City Council
AGENDA

Tuesday, November 12, 2024, 5:30 p.m.

Council Chambers, 990 Palm Street, San Luis Obispo

Council meetings may be viewed remotely on Channel 20, the City's YouTube Channel, and on the City's website under the Public Meeting Agendas web page. Attendees of City Council or Advisory Body meetings are eligible to receive one hour of complimentary parking; restrictions apply, visit Parking for Public Meetings for more details.

INSTRUCTIONS FOR PUBLIC COMMENT:

Public Comment prior to the meeting (must be received 3 hours in advance of the meeting):

Mail - Delivered by the U.S. Postal Service. Address letters to the City Clerk's Office at 990 Palm Street, San Luis Obispo, California, 93401.

Email - Submit Public Comments via email to emailcouncil@slocity.org. In the body of your email, please include the date of the meeting and the item number (if applicable). Emails *will not* be read aloud during the meeting.

Voicemail - Call (805) 781-7164 and leave a voicemail. Please state and spell your name, the agenda item number you are calling about, and leave your comment. Verbal comments must be limited to 3 minutes. Voicemails *will not* be played during the meeting.

**All correspondence will be archived and distributed to councilmembers, however, submissions received after the deadline may not be processed until the following day.*

Public Comment during the meeting:

Meetings are held in-person. To provide public comment during the meeting, you must be present at the meeting location.

Electronic Visual Aid Presentation. To conform with the City's Network Access and Use Policy, Chapter 1.3.8 of the Council Policies & Procedures Manual, members of the public who desire to utilize electronic visual aids to supplement their oral presentation must provide display-ready material to the City Clerk by 12:00 p.m. on the day of the meeting. Contact the City Clerk's Office at cityclerk@slocity.org or (805) 781-7114.

Pages

1. CLOSED SESSION (4:30 PM to 5:30 PM)

1.a CALL TO ORDER

Mayor Erica A. Stewart will call the Closed Session to order at 4:30 p.m. in the Council Hearing Room at City Hall, 990 Palm Street, San Luis Obispo.

1.b PUBLIC COMMENT FOR CLOSED SESSION ITEMS ONLY

Public Comment will only be accepted for items listed on the Closed Session agenda.

1.c CONFERENCE WITH LEGAL COUNSEL - ANTICIPATED LITIGATION

Significant exposure to litigation pursuant to paragraph (2) of subdivision (d) of Section 54956.9. No. of potential cases: One.

1.d ADJOURNMENT

The City Council will hold a *rescheduled* Regular Meeting on November 12, 2024 at 5:30 p.m. in the Council Chambers at City Hall, 990 Palm Street, San Luis Obispo.

2. CALL TO ORDER

Mayor Erica A. Stewart will call the *rescheduled* Regular Meeting of the San Luis Obispo City Council to order.

3. PLEDGE OF ALLEGIANCE

Council Member Emily Francis will lead the Council in the Pledge of Allegiance.

4. PRESENTATIONS

4.a NATIONAL HOSPICE AND PALLIATIVE CARE MONTH PROCLAMATION

Mayor Stewart will present a proclamation declaring the month of November as "National Hospice and Palliative Care Month".

4.b CITY MANAGER REPORT

Receive a brief report from City Manager Whitney McDonald.

5. PUBLIC COMMENT PERIOD FOR ITEMS NOT ON THE AGENDA

Not to exceed 15 minutes. The Council welcomes your input. State law does not allow the Council to discuss or take action on issues not on the agenda, except that members of the Council or staff may briefly respond to statements made or questions posed by persons exercising their public testimony rights (Gov. Code sec. 54954.2). Staff may be asked to follow up on such items.

6. CONSENT AGENDA

Not to exceed 15 minutes. Matters appearing on the Consent Calendar are expected to be non-controversial and will be acted upon at one time. A member of the public may request the Council to pull an item for discussion. Pulled items shall be heard at the close of the Consent Agenda unless a majority of the Council chooses another time. The public may comment on any and all items on the Consent Agenda within the three-minute time limit.

Recommendation:

To approve Consent Calendar Items 6a to 6g.

6.a WAIVE READING IN FULL OF ALL RESOLUTIONS AND ORDINANCES

Recommendation:

Waive reading of all resolutions and ordinances as appropriate.

6.b MINUTES REVIEW - OCTOBER 15, 2024 AND OCTOBER 22, 2024 13

Recommendation:

Approve the following minutes of the City Council:

- October 15, 2024 - Regular Meeting
- October 22, 2024 - Special Meeting

6.c AUTHORIZATION TO ADVERTISE JACK HOUSE ROOF, WIDOWS WALK REPAIR, AND ARBOR REPLACEMENT PROJECT, SPECIFICATION NO. 2000075-13.01

Recommendation:

1. Approve the project plans and special provisions for the Jack House Roof, Widows Walk Repair, and Arbor Replacement Project, Specification 2000075-13.01; and

2. Authorize staff to advertise for bids; and

3. Authorize the City Manager to award the construction contract pursuant to Section 3.24.190 of the Municipal Code, including the Base Bid and Additive Alternate, if the lowest responsible bid is within the Publicly Disclosed Funding Limit of $397,000; and

4. Authorize the City Engineer to approve Contract Change Orders up to the available project budget: and

5. Authorize a transfer of $130,000 in funding from CIP Completed Projects, LRM Capital Outlay Fund, to the Jack House Roof, Widows Walk Repair, and Arbor Replacement project account (2000075-13.01) to support completion of the project; and

6. Authorize a transfer of $177,160 from the Jack House Arbor Fund (2001010-03.02) to Jack House Roof, Widows Walk Repair, and Arbor Replacement Project (Account 2000075-13.01).

6.d AUTHORIZATION TO ADVERTISE 1106 WALNUT TENANT IMPROVEMENTS PROJECT, SPECIFICATION 2000577-04 AND FENCING PROJECT, SPECIFICATION NO. 2000577-02

Recommendation:

1. Approve the project plans and specifications for the 1106 Walnut Tenant Improvement (TI) Project, Specification No. 2000577-04 and 1106 Walnut Fencing (Fence) Project, Specification No. 2000577-02; and,

2. Authorize advertisement of the 1106 Walnut Tenant Improvement (TI) Project; and,

3. Authorize advertisement of the 1106 Walnut Fencing Project; and,

4. Authorize the City Manager to award the Construction Contract pursuant to Section 3.24.190 of the Municipal Code, for the 1106 Walnut TI project Specification No. 2000577-04 if the lowest responsible bid is within the Engineering Estimate of $1,470,000; and

5. Authorize the City Manager to award the Construction Contract pursuant to Section 3.24.190 of the Municipal Code, for the 1106 Walnut Fencing project, Specification No. 2000577-02 if the lowest responsible bid is within the Engineering Estimate of $470,000; and

6. Authorize the City Engineer to approve Contract Change Orders up to the available budget for each project; and

7. Authorize the City Manager to amend the total project budget with undesignated capital project funding up to the purchasing authority limit of $200,000; and,

8. Authorize the following appropriations and transfers:

    a. Authorize an appropriation of $396,914.41 from the Police Impact Fees Revenue account (517.9101.47201) to

Project Expenditure account (517.9101.71006) in support of the project; and

b. Authorize the transfer up to $232,000 from Police Station Replacement account (2000522-03) to project account (2000577-04); and

9. Adopt a Draft Resolution entitled, “A Resolution of the City Council of the City San Luis Obispo, California, authorizing use of Police Impact Fees Revenue and Police Station Replacement account to support the 1106 Walnut TI Project, Specification No. 2000577-04 and 1106 Walnut Fencing Project, Specification No. 2000577-02.”

6.e AUTHORIZE THE POLICE DEPARTMENT TO APPLY FOR FY 2024-25 BUREAU OF JUSTICE ASSISTANCE EDWARD BYRNE MEMORIAL GRANT 635

Recommendation:

1. Authorize staff to submit a grant application to the Bureau of Justice Assistance for the FY 2024-25 Edward Byrne Memorial Grant, amounting to $14,882; and

2. Authorize the City Manager or their designee to execute grant related documents and authorize the Finance Director to make the necessary budget adjustments upon the award of the grant.

6.f AUTHORIZE THE FIRE DEPARTMENT TO APPLY FOR THE SAN LUIS OBISPO OFF-HIGHWAY VEHICLE GRANT PROGRAM 639

Recommendation:

1. Authorize the Fire Department to apply to the San Luis Obispo County Off-Highway Vehicle Grant Program to replace Utility Task Vehicle-2; and

2. Authorize the City Manager, or their designee, to execute the grant documents and approve the budget changes necessary to appropriate the grant amount upon notification that the grant has been awarded.

6.g AUTHORIZE THE POLICE DEPARTMENT TO ACCEPT FISCAL YEAR 2024-25 DEPARTMENT OF JUSTICE OFFICE OF COMMUNITY ORIENTED POLICING SERVICES GRANT AWARD 643

Recommendation:

1. Authorize the Police Department to accept the Fiscal Year 2024-25 Department of Justice, Office of Community Oriented Policing Services grant award in the amount of $250,000, subject to the approval of the additional two positions and identification of funding for the City's match requirement in the 2025-27 Financial Plan; and

2. Authorize the City Manager or their designee to execute grant related documents.

7. PUBLIC HEARING AND BUSINESS ITEMS

7.a PUBLIC HEARING TO CONSIDER A RESOLUTION TO ABANDON PORTIONS OF SLACK STREET AND TO CONSIDER A DETACHMENT TO ADJUST CITY LIMIT BOUNDARIES AND ACCOMMODATE A CAL POLY FACULTY HOUSING DEVELOPMENT (STAB-0038-2024, ANNX-0219-2024) (Estimated Time: 30 minutes) 649

Recommendation:

Adopt a Draft Resolution entitled, "A Resolution of the City Council of the City of San Luis Obispo, California, to Abandon portions of Slack Street Rights-of-Way and to direct City Staff to submit a Detachment Application to the San Luis Obispo Local Agency Formation Commission (LAFCO) (STAB-0038-2024 and ANNX-0219-2024)" to adjust City limit boundaries near Cal Poly University.

7.b DOWNTOWN PARKING PROGRAM TECHNOLOGY ROADMAP REPORT (Estimated Time: 60 minutes) 687

Recommendation:

1. Receive and file Downtown Parking Technology Roadmap; and

2. Adopt a Draft Resolution entitled, "A Resolution of the City Council of the City of San Luis Obispo, California, to designate Flash Parking, Inc. as the standard vendor for the Gated

Parking Access and Revenue Control System in City of San Luis Obispo owned and operated parking garages"; and

3. Appropriate $1,200,000 from Parking Fund Unreserved Fund Balance for purchase of Flash equipment, installation and ongoing support services; and

4. Approve and authorize staff to advertise a Request for Proposals (RFP) for multi-space pay stations, authorize the City Manager to execute a contract with selected vendor, and appropriate $600,000 from Parking Fund Unreserved Fund Balance for the purchase and installation of the multi-space pay stations with the vendor; and

5. Approve surplus of existing multi-space pay station once removed; and

6. Authorize the City Manager to extend mobile payment application contracts up to 5 years based on ongoing performance with PayByPhone; and

7. Authorize the City Manager to execute a one-year contract with automatic annual extensions for a maximum of five years with the selected Citation and Permit Management System vendor; and

8. Appropriate $100,000 from Parking Fund Unreserved Fund Balance for design of garage security fencing for existing garages, utilizing the materials selected for the Cultural Arts District Parking Garage.

7.c RECEIVE THE MISSION PLAZA ENHANCEMENT PROJECT, SPECIFICATION NO. 91439-01, CONSTRUCTION BID AND PROJECT BUDGET UPDATE (Estimated Time: 60 minutes)

Recommendation:

1. Receive a presentation on the “Mission Plaza Enhancements Project – Construction Bids and Budget Update,” Specification No. 91439-01; and

2. Provide input and direct staff to proceed with Alternative One, Two, or Three, or some combination thereof, as discussed in this staff report.

8. LIAISON REPORTS AND COMMUNICATIONS

Not to exceed 15 minutes. Council Members report subcommittee assignments, listed below, and other City activities. At this time, any Council Member or the City Manager may ask a question for clarification, make an announcement, or report briefly on their activities. In addition, subject to Council Policies and Procedures, they may provide a reference to staff or other resources for factual information, request staff to report back to the Council at a subsequent meeting concerning any matter or take action to direct staff to place a matter of business on a future agenda. (Gov. Code Sec. 54954.2)

Mayor Stewart	**Vice Mayor Pease**	**Council Member Francis**	**Council Member Marx**	**Council Member Shoresman**
City Selection Committee	SLO Council of Government	Nacimiento Water Project	Airport Land Use	SLO Climate Coalition Liaison
Whale Rock Commission	Downtown Association Board	Community Action Partnership	Central Coast Clean Energy	Zone 9 Advisory Committee
City/University Quarterly Meeting	SLO Regional Transit Authority	Cal Poly Campus Planning Committee	Air Pollution Control District	CA Men's Colony Citizens Advisory Committee
Performing Arts Center Commission	County Water Resources Advisory Committee	Local Agency Formation Commission	Integrated Waste Management Authority	Homeless Services Oversight Committee
Visit SLO County Advisory Committee				
Regional Economic Action Coalition				

9. ADJOURNMENT

The next Regular Meeting of the City Council will be held on November 19, 2024 with **Closed Session at 4:30 p.m. in the Council Hearing Room** and the **Regular Meeting at 5:30 p.m. in the Council Chambers** at City Hall, 990 Palm Street, San Luis Obispo.

LISTENING ASSISTIVE DEVICES for the hearing impaired - see the Clerk.

The City of San Luis Obispo wishes to make all of its public meetings accessible to the public. Upon request, this agenda will be made available in appropriate alternative formats to persons with disabilities. Any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct such request to the City Clerk's Office at (805) 781-7114 at least 48 hours before the meeting, if possible. Telecommunications Device for the Deaf (805) 781-7410.

City Council meetings are televised live on Charter Channel 20 and the City's YouTube Channel: www.youtube.com/CityofSanLuisObispo. Agenda related writings or documents provided to the City Council are available for public inspection in the City Clerk's Office located at 990 Palm Street, San Luis Obispo, California during normal business hours, and on the City's website https://www.slocity.org/government/mayor-and-city-council/agendas-and-minutes. Persons with questions concerning any agenda item may call the City Clerk's Office at (805) 781-7114.

Council Minutes

October 15, 2024, 5:30 p.m.
Council Chambers, 990 Palm Street, San Luis Obispo

Council Members Present:	Council Member Emily Francis, Council Member Jan Marx, Council Member Michelle Shoresman, Vice Mayor Andy Pease, Mayor Erica A. Stewart
City Staff Present:	City Manager Whitney McDonald, Christine Dietrick, City Attorney, Teresa Purrington, City Clerk

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1. CALL TO ORDER

A Regular Meeting of the San Luis Obispo City Council was called to order on October 15, 2024 at 5:30 p.m. in the Council Chambers, 990 Palm Street, San Luis Obispo, by Mayor Stewart with all Council Members present.

2. PLEDGE OF ALLEGIANCE

Vice Mayor Andy Pease led the Council in the Pledge of Allegiance.

3. PRESENTATIONS

3.a ARBOR DAY PROCLAMATION

Mayor Erica A. Stewart presented a proclamation declaring November 2nd as "Arbor Day" to Walter Gault on behalf of the City's Community Development Department.

3.b CITY MANAGER REPORT

City Manager Whitney McDonald provided a report on upcoming projects.

4. PUBLIC COMMENT PERIOD FOR ITEMS NOT ON THE AGENDA

Public Comment:
David Yohe
Weston Patrick

--End of Public Comment--

5. CONSENT AGENDA

Vice Mayor Pease requested Item 5k be pulled from the Consent Agenda.

Council Member Shoresman requested Item 5g be pulled from the Consent Agenda.

Public Comments:
None

---End of Public Comment---

Motion By Council Member Francis
Second By Council Member Shoresman

To approve Consent Calendar Items 5a to 5f and 5h to 5j.

Ayes (5): Council Member Francis, Council Member Marx, Council Member Shoresman, Vice Mayor Pease, and Mayor Stewart

CARRIED (5 to 0)

5.a WAIVE READING IN FULL OF ALL RESOLUTIONS AND ORDINANCES

Waive reading of all resolutions and ordinances as appropriate.

5.b MINUTES REVIEW - OCTOBER 1, 2024 COUNCIL MINUTES

Approve the minutes of the City Council meeting held on October 1, 2024.

5.c UPDATE TO TRIP REDUCTION INCENTIVE PROGRAM

Adopt Resolution No. 11524 (2024 Series) entitled, “A Resolution of the City Council of the City of San Luis Obispo, California, amending the Trip Reduction Incentive Program,” effective January 1, 2025.

5.d CONSIDERATION OF A RESOLUTION ALLOWING PREVIOUSLY CONTRIBUTING EMPLOYEES TO CONTINUE PARTICIPATING IN THE FIRE RETIREE MEDICAL TRUST

Adopt Resolution No. 11525 (2024 Series) entitled, “A Resolution of the City Council of the City of San Luis Obispo, California, allowing previously contributing employees to continue participating in the Retiree Medical Trust through the Peace Officers Research Association of California.”

5.e AUTHORIZATION TO ADVERTISE MILL STREET SEWER REPLACEMENT PROJECT, SPECIFICATION NO. 2000561

1. Approve the project plans and specifications for Mill Street Sewer Replacement, Specification Number 2000561; and
2. Authorize staff to advertise for bids; and
3. Authorize the City Manager to award the Construction Contract pursuant to Section 3.24.190 of the Municipal Code if the lowest responsible bid is within the Engineer's Estimate of $2,400,000; and
4. Authorize the City Engineer to approve Contract Change Orders up to the available project budget and any amended budget subsequently approved by the City Manager up to $200,000.

5.f CONSIDERATION OF A RESOLUTION OF INTENTION TO ABANDON PORTIONS OF SLACK STREET TO ACCOMMODATE CAL POLY FACULTY AND STAFF HOUSING, AS WELL AS CONSIDERATION OF A DETACHMENT TO ADJUST CITY LIMIT BOUNDARIES NEAR CAL POLY (STAB-0038-2024, ANNX-0219-2024)

Adopt Resolution No. 11526 (2024 Series) entitled, "A Resolution of the City Council of the City of San Luis Obispo, California, to abandon portions of Slack Street, which is proposed to accommodate Cal Poly faculty and staff housing, as well as future consideration of a detachment to adjust city limit boundaries near Cal Poly (STAB-0038-2024, ANNX-0219-2024)", and set a public hearing for November 12, 2024, to consider a Resolution of Abandonment and Detachment.

5.h AUTHORIZATION TO RECLASSIFY ENGINEERING MANAGEMENT CLASSIFICATIONS

Adopt Resolution No. 11527 (2024 Series) entitled, "A Resolution of the City Council of the City of San Luis Obispo, California, authorizing an amendment to the FY 2024-25 Budget Appropriation to fund compensation changes to the Engineering Management Classifications and adopt a revised Regular and Contract Employee Salary Schedule."

5.i AUTHORIZE WASTEWATER IMPACT FEE FUNDS AND EXECUTION OF A CONTRACT CHANGE ORDER FOR THE BUCKLEY SEWER LIFT STATION

1. Authorize Wastewater Impact Fee Funds in the amount of $281,358.15 to reimburse Wathen Castanos Homes for the construction of the Buckley Lift Station; and

2. Authorize the Utilities Director and City Engineer to execute a Contract Change Order No. 1 in the amount of $281,358.15 with Wathen Castanos Homes for construction modifications made to the Buckley Lift Station.

5.j ADVISORY BODY APPOINTMENT – MASS TRANSPORTATION COMMITTEE, ASSOCIATED STUDENTS INCORPORATED (ASI) REPRESENTATIVE

Confirm the appointment of Emily McBride as the ASI Representative on the Mass Transportation Committee (MTC), to fill an unscheduled vacancy with a term ending August 31, 2026.

Item 5k pull from Consent Agenda by Vice Mayor Pease.

5.k APPROVE THE REVISED SCHEDULE OF CITY COUNCIL MEETINGS FOR 2024

Public Comments:
None

---End of Public Comment---

Motion By Council Member Francis
Second By Council Member Marx

Approve reinstating and rescheduling the Regular City Council meeting on December 17th to December 10th, as shown on the revised 2024 Regular City Council Meeting Calendar, and to reschedule the December 3rd meeting to December 9th for the Reorganization Ceremony for the new City Council based on the election results.

Ayes (5): Council Member Francis, Council Member Marx, Council Member Shoresman, Vice Mayor Pease, and Mayor Stewart

CARRIED (5 to 0)

Item 5g pulled from Consent by Council Member Shoresman

5.g FINAL ACCEPTANCE OF PUBLIC IMPROVEMENTS FOR TRACT 2428 PHASE 3 – A RESIDENTIAL SUBDIVISION AT 3000 CALLE MALVA

Public Comments:
Addie Barkley
Barbara Thompson
Daniel Thompson
Gail Ryff

---End of Public Comment---

Motion By Council Member Francis
Second By Council Member Shoresman

To continue the item to a date uncertain to allow staff time to conduct an inspection of the property.

Ayes (5): Council Member Francis, Council Member Marx, Council Member Shoresman, Vice Mayor Pease, and Mayor Stewart

CARRIED (5 to 0)

6. PUBLIC HEARING AND BUSINESS ITEMS

6.a ANNUAL PUBLIC HEARING FOR THE TOURISM BUSINESS IMPROVEMENT DISTRICT (Estimated Time: 30 Minutes)

Deputy City Manager Greg Hermann, Tourism & Community Promotions Manager Jacqui Clark-Charlesworth and TBID Chair Lydia Bates provided an in-depth staff report and responded to Council questions.

Public Comments:
None
---End of Public Comment---

Motion By Council Member Marx
Second By Council Member Francis

Adopt Resolution No. 11528 (2024 Series) entitled, “A Resolution of the City Council of the City of San Luis Obispo, California, declaring the basis for and the levy of the assessment for the San Luis Obispo Tourism Business Improvement District and affirming the establishment of the District.”

Ayes (5): Council Member Francis, Council Member Marx, Council Member Shoresman, Vice Mayor Pease, and Mayor Stewart

CARRIED (5 to 0)

6.b REVIEW OF AN APPEAL OF THE PLANNING COMMISSION'S DECISION TO APPROVE A CONDITIONAL USE PERMIT TO ESTABLISH A FRATERNITY (USE-0331-2023, APPL-0365-2024)

Director of Community Development Timmi Tway and Associate Planner Hannah Hanh provided an in-depth staff report and responded to questions.

Public Comments:
Kathie Walker, Appellant's Representative
Thomas Symer, Applicant's Representative
Brett Cross
Sandra Rowley
Felicia Lewis
Stew Jenkins
---End of Public Comment---

Motion By Council Member Shoresman
Second By Council Member Marx

Adopt Resolution No. 11529 (2024 Series) entitled, "A Resolution of the City Council of the City of San Luis Obispo, California, denying an appeal and upholding the Planning Commission's decision to approve a Conditional Use Permit to establish a fraternity for up to 24 residents at 1264 and 1264 ½ East Foothill Boulevard and 1241, 1243, 1249, and 1251 Monte Vista Place. The project includes a request to provide two (2) parking spaces in tandem on an existing driveway along East Foothill Boulevard. The project is exempt from environmental review under Section 15301 (Existing Facilities) of the California Environmental Quality Act (CEQA) Guidelines as represented in the council agenda report and attachments dated October 15, 2024 (USE-0331-2023, APPL-0365-2024)" *with the following changes to the Resolution as shown in* ***bold*** *and italics or* ~~*strikethrough*~~ *to Conditions 3, 5, 14, 15, 16:*

3. The Conditional Use Permit shall be reviewed by the Planning Commission ***as soon as practical if 1) conduct on the permitted premises results in three (3) citation(s) within any 12-month period for a violation of law or permitted condition. 2) that citation is not contested or us upheld on appeal, and 3) conduct for which the citation was issued resulted in adverse impacts, to or complaints from, residents or occupants of the surrounding neighborhood.*** At the time of the Conditional Use Permit review, to ensure ongoing compatibility with nearby uses, the conditions of approval may be added, modified, and/or removed, or the Conditional Use Permit may be revoked.

The City shall notify Cal Poly if the Use Permit is revoked. A re-review by the Planning Commission shall be accompanied by the appropriate fee.

5. Routine meetings and gatherings for the fraternity shall be limited to a maximum of 48 people (32 people x 1.5), except as otherwise approved by the Community Development Director for special events. If the fraternity hosts special events involving more than 48 people, a transportation management plan to reduce impacts to the surrounding neighborhood shall be submitted to the Community Development Department, at least 30 days prior to the event taking place, for review and approval. ***No exception from the Noise Ordinance shall be approved by the Director as Part of the special event.***

14. The fraternity use shall comply with Table 1 (Exterior Noise Limits) of Section 9.12.060 (Exterior Noise Limits) between the extended hours of 10:00 p.m. and 9:00 a.m.~~, except as approved in writing as a special event by the Community Development Director.~~

15. Prior to a special event approved by the Community Development Director pursuant to Condition No. 5, the fraternity shall provide written notification of the event to occupants within 300 feet of the site. The written notification shall include the date, hours, and contact information for the responsible party for the special event. ***No exception from the Noise Ordinance shall be approved by the Director as part of the special event.***

16. Live entertainment, bands, and/or amplified sounds are prohibited, unless otherwise approved through a special event by the Community Development Department. ***No exception from the Noise Ordinance shall be approved by the Director as part of the special event.***

And adding the following Condition:

"***Failure to comply with any of the above conditions or code requirements, or the conduct of the use so as to constitute a violation of Federal, State, or local law, or so as to constitute a public nuisance or so as to cause adverse impacts on the health, safety, or welfare of persons in the vicinity of this use is prohibited and may constitute grounds for the revocation of this permit.***"

Ayes (5): Council Member Francis, Council Member Marx, Council Member Shoresman, Vice Mayor Pease, and Mayor Stewart

CARRIED (5 to 0)

7. LIAISON REPORTS AND COMMUNICATIONS

Mayor Stewart reported that none of her Subcommittee assignments met since the last City Council Meeting. She attended the Anderson Hotel grand opening, appeared on the Dave Congalton show with Homeless Response Manager Daisy Wiberg, attended the open house at the La Loma Adobe, and the ASI event *Every Voice Counts in the Vote*.

Vice Mayor Pease provided an update from the SLOCOG meeting.

Council Member Francis provided an update on the Air Pollution Control District meeting, the CAPSLO meeting, and a Nacimiento Water Board meeting. She attended the Passenger Rail Summit in San Diego with SLOCOG and the dedication of the Chumash Marine Sanctuary in Pismo.

Council Member Marx provided an update on an item going to the Air Pollution Control District Hearing Board. She also provided an update on the SLO Climate Coalition, which she attended for Council Member Shoresman. She attended the groundbreaking for the new student housing at Cal Poly, the groundbreaking event for the Calle Joaquin Homekey Project, the Commemoration Ceremony at Beth David, Diversity Coalition Annual fundraising event, the Anderson Hotel ribbon cutting, the Fire Department open house, and Indigenous People's Day.

Council Member Shoresman provided an update on Homelessness Services Oversight Committee Executive Committee meeting. She attended the Homekey groundbreaking ceremony and the Cheng Park Rededication ceremony.

8. ADJOURNMENT

The meeting was adjourned at 9:44 p.m. The next Regular Meeting of the City Council has been *rescheduled* to **November 12, 2024 at 5:30 p.m. in the Council Chambers** at City Hall, 990 Palm Street, San Luis Obispo. Council approved rescheduling the November 5th Regular Meeting on November 14, 2023, during their annual review of the 2024 Council Meeting Calendar.

APPROVED BY COUNCIL: XX/XX/2024

Council Minutes

October 22, 2024, 12:00 p.m.
Council Hearing Room, 990 Palm Street, San Luis Obispo

Council Members Present:	Council Member Emily Francis, Council Member Jan Marx, Council Member Michelle Shoresman, Vice Mayor Andy Pease, Mayor Erica A. Stewart
City Staff Present:	City Manager Whitney McDonald, Christine Dietrick, City Attorney, Teresa Purrington, City Clerk

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1. CALL TO ORDER

A Special Meeting of the San Luis Obispo City Council was called to order on October 22, 2024 at 12:17 p.m. in the Council Hearing Room at City Hall, 990 Palm St, San Luis Obispo, by Mayor Stewart.

2. PUBLIC COMMENT FOR ITEMS ON THE AGENDA ONLY

Public Comment:
None

--End of Public Comment--

3. CITY COUNCIL DISCUSSION ITEMS

3.a DISCUSSION ON NEW COUNCIL MEMBER ONBOARDING (Estimated time: 40 minutes)

ACTION: Council discussed the spreadsheet staff uses to track items for new Council Member onboarding. Council directed staff to include the revised spreadsheet in the New Council Member Onboarding binder.

3.b DISCUSSION ON COUNCIL SUBCOMMITTEE LIAISON ASSIGNMENT PROCESS (Estimated time: 40 minutes)

ACTION: Council discussed the process for assigning subcommittee liaisons. Council directed staff to schedule a Special Meeting on December 17, 2024 at 12:00 p.m. to allow Council time to discuss the subcommittee liaison assignments. The City Clerk will publish the draft subcommittee assignment spreadsheet with the December 17th agenda.

3.c FEEDBACK ON PILOT PROGRAM TO MOVE COUNCIL SUBCOMMITTEE LIAISON REPORTS ON REGULAR MEETING AGENDAS (Estimated Time: 10 minutes)

ACTION: Council decided not to continue the pilot program of moving the Liaison Reports to the beginning of the meeting. Council directed staff to continue displaying the list of each Council Member's regional committee assignments on the agenda.

4. ADJOURNMENT

The meeting was adjourned at 1:32 p.m. The next Regular Meeting of the City Council has been *rescheduled* to **November 12, 2024 at 5:30 p.m. in the Council Chambers** at City Hall, 990 Palm Street, San Luis Obispo. Council approved rescheduling the November 5th Regular Meeting on November 14, 2023, during their annual review of the 2024 Council Meeting Calendar.

APPROVED BY COUNCIL: XX/XX/2024

Council Agenda Report

Department: Public Works
Cost Center: 5002
For Agenda of: 11/12/2024
Placement: Consent
Estimated Time: N/A

FROM: Matt Horn, Public Works Director
Prepared By: Sandra Golonka, Capital Projects Manager III

SUBJECT: AUTHORIZATION TO ADVERTISE JACK HOUSE ROOF, WIDOWS WALK REPAIR, AND ARBOR REPLACEMENT PROJECT, SPECIFICATION NO. 2000075-13.01

RECOMMENDATION

1. Approve the project plans and special provisions for the Jack House Roof, Widows Walk Repair, and Arbor Replacement Project, Specification 2000075-13.01; and
2. Authorize staff to advertise for bids; and
3. Authorize the City Manager to award the construction contract pursuant to Section 3.24.190 of the Municipal Code, including the Base Bid and Additive Alternate, if the lowest responsible bid is within the Publicly Disclosed Funding Limit of $397,000; and
4. Authorize the City Engineer to approve Contract Change Orders up to the available project budget: and
5. Authorize a transfer of $130,000 in funding from CIP Completed Projects, LRM Capital Outlay Fund, to the Jack House Roof, Widows Walk Railing, and Arbor Repair project account (2000075-13.01) to support completion of the project; and
6. Authorize a transfer of $177,160 from the Jack House Arbor Fund (2001010-03.02) to Jack House Roof, Widows Walk Repair, and Arbor Replacement, (Account 2000075-13.01).

POLICY CONTEXT

The recommended action for the advertisement is supported by the City Council's adopted Capital Improvement Plan for the 2021-23 and 2023-2025 Financial Plans. The Jack House was identified as part of the Annual Asset Maintenance Plan for Parks Maintenance to continue to provide users with a safe and quality experience.

On May 17, 2022, Council approved a Purchasing Policy Update to the Financial Management Manual that required Council approval for Public Projects that cost over $200,000.

DISCUSSION

Background
The Jack House, built in the 1880s by a prominent local businessman, holds significant historical value for the City of San Luis Obispo. This structure has undergone numerous renovations over the years and was donated to the City by the Jack Family in 1992 to ensure its ongoing preservation. The City has committed to maintaining the property as an event space, museum, and historical site, protecting and preserving this integral part of our City's history for future generations.

Recent challenges have highlighted the urgent need for further restoration and protection of the Jack House. A severe storm in 2021 caused large leaks in the roof that caused damage throughout the structure, and the arbor was damaged, necessitating its removal in March 2023. The disassembled arbor is currently being stored at the Corp Yard. While emergency roofing repairs were completed in September 2022, the roof and exterior wooden railings continue to deteriorate due to weather exposure, posing a risk to the structural integrity of the house.

Project
The project plans (Attachment A) and specifications (Attachment B) improvements include removing and replacing the existing roof, repairing and replacing portions of the Widows Walk railing, and upper porch railing, repointing the chimney[1], masonry repair, and gutter repairs. The project also includes reconstructing the arbor, and a template will be created using existing pieces to recreate the original structure.

The project is structured with a Base Bid (Jack House Roof and Widows Walk Railing Repair) and Additive Alternate (Jack House Arbor Replacement) in order to maximize what the City can construct within the available funding identified. The strategy is to award the contract with the Base Bid and Additive Alternate as funding will allow, up to the Publicly Disclosed amount of $397,000 in compliance with Public Contract Code Section 20103.8(c). If the Base Bid is within the Publicly Disclosed amount, but the Alternate is not, staff would proceed with award of the Base contract (Jack House Roof and Widows Walk Railing Repair) within the identified budget and return to Council later with a separate project for the Arbor replacement, likely with funding identified in the 2025-27 Financial Plan. This strategy allows the available funding to be prioritized towards the most crucial components of the project, which is the repair of the Jack House structure.

FISCAL IMPACT

The table below shows the funding received to date.

[1] The process of repointing involves grinding out the mortar joints between the brick and then filling back in with new mortar. The excess motor is removed for a smooth finish.

Prior Funding for Jack House Roof Repair, Widows Walk, and Arbor Replacement				
	21/22	22/23	23/24	Total
Jack House (2000075.13.01)	$ 100,000.00		$ 250,000.00	$ 350,000.00
Jack House Arbor (2001010.03.02)		$ 7,500.00	$ 175,000.00	$ 182,500.00

The Jack House Roof and Widows Walk Railing Repair Project was initially identified in the 2021-23 Financial Plan and the project was allocated $100,000 for design costs. An additional $250,000 was allocated for the Jack House Roof and Widows Walk Railing Repair and $175,000 for the Jack House Arbor as part of the 2023-25 Financial Plan. The project accounts 2000075-13.01 and 2001010-03.02 have a cumulative balance of $369,554 to use towards construction.

An additional $130,000 from the CIP Completed Projects, Capital Outlay LRM, account will support the budget request to complete the project. This funding is necessary to supplement the additional estimated cost of construction as well as establish sufficient construction contingencies due to the risks and unknowns of working with a historic structure that has not seen significant repairs for some time.

The table below outlines all estimated project costs to complete the work within the available budget, assuming bids come in under the Publicly Disclosed Funding Limit of $397,000.

	Jack House Roof, Widows Walk Repair, and Arbor Replacement	**Jack House Arbor Replacement**	
	(2000075-13.01)	**(2001010-03-02)**	**Total**
Base Bid Construction Estimate	$282,000		$282,000
Additive Alternate A		$115,000	$115,000
Total Construction Estimate / Publicly Disclosed Funding Limit	***$282,000***	***$115,000***	***$397,000***
Contingencies (25%)	$70,500	$28,750	$99,250
Special Inspection	$2,500	$0	$2,500
Printing & Advertising	$500	$0	$500
Total Project Estimate (Including Additive Alternate)	***$355,500***	***$143,750***	***$499,250***
Current Project Account Balance	*$192,394*	*$177,160*	*$369,554*
Requested Funding	*$130,000*	*$0*	*$130,000*
Total Funding	**$322,394**	**$177,160**	**$499,554**

Budgeted: Yes
Budget Year: 2024-25
Funding Identified: Yes

Fiscal Analysis:

Funding Sources	Total Budget Available	Current Funding Request	Remaining Balance	Annual Ongoing Cost
General Fund	$369,554	$369,554	$304	
State				
Federal				
Fees				
CIP Completed Projects:	$150,185	$130,000	$20,185	
Total	**$519,739**	**$499,554**	**$20,489**	**N/A**

Staff recommends appropriating $130,000 from the CIP Completed Projects, Capital Outlay LRM fund balance. This additional funding will cover anticipated cost attributed to rising construction prices since the project's initial budget, as well as specialized skills and care required for restoring the historical features.

ALTERNATIVES

1. ***Deny authorization to advertise***. The City Council may choose not to authorize project advertisement. Staff does not recommend this alternative as the Jack House is a registered historical site and needs repair to preserve its historical significance.
2. ***Authorization advertisement of the project, but direct staff to remove Additive Alternative "A" from the project plans and special provisions and defer the arbor as a future project***. The City Council may choose to authorize project advertisement without additive alternative "A" and direct staff to modify special provisions and plans to remove the arbor before advertising the project. The additional funding transfer recommendations in the above Fiscal Impact section would be unchanged, as this funding may still be necessary to support the base project. Staff does not recommend this alternative as construction cost trends have consistently increased and this project presents an opportunity to replace the arbor at the same time as the other Jack House improvements, reducing public impacts and further costs of delaying replacement of the arbor.

ATTACHMENTS

A - Project Plans (Spec No. 2000075-13.01)
B - Project Specifications (Spec No. 2000075-13.01)

general notes:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR PERMITTEE TO CONTACT "UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA" BY PHONE AT 8-1-1 FORTY-EIGHT (48) HOURS PRIOR TO START OF CONSTRUCTION FOR LOCATION OF POWER, TELEPHONE, OIL AND NATURAL GAS UNDERGROUND FACILITIES. CONTRACTOR OR PERMITTEE SHALL ALSO CONTACT THE APPROPRIATE AGENCY FOR THE LOCATION OF CABLE T.V., WATER, SEWER, DRAINAGE OR UNDERGROUND FACILITIES.
2. THE CONTRACTOR SHALL POSSESS A CLASS B LICENSE AT THE TIME OF BID OPENING.

datum:

HORIZONTAL CONTROL FOR POINTS 8207 & 8405 AS PUBLISHED IN THE CITY OF SAN LUIS OBISPO 2007 HORIZONTAL CONTROL NETWORK. CITY NETWORK IS BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83) EPOCH DATE 1991.35, ZONE 5 CALIFORNIA.

VERTICAL CONTROL BENCHMARK NO. 12A WITH AN ELEVATION OF 183.59 AS PUBLISHED IN THE CITY OF SAN LUIS OBISPO 2007 BENCHMARK SYSTEM. CITY'S BENCHMARK SYSTEM IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

PROJECT INFORMATION

ADDRESS: 536 MARSH STREET
SAN LUIS OBISPO, CA 93401

APN: 003-511-022

PROJECT DESCRIPTION: THE PROJECT SCOPE ON THE HISTORIC JACK HOUSE INCLUDES - REHABILITATION OF THE WOOD RAILING AT THE WIDOW'S WALK AND AT THE ENTRY PORCH ROOF, REPLACEMENT OF THE CEDAR SHINGLE ROOFING, CLEANING & REPAIR, AS NEEDED, OF SHEET METAL ROOFING TILES ABOVE PORCH. ALSO INCLUDED ARE REPLACEMENT OF ROOFING AT EACH OF THE PROJECTING BAYS AND AT THE REAR PORCH. AS NEEDED, MATERIALS WILL BE REPLACED IN-KIND PER SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION. SITE WORK WILL BE THE RECONSTRUCTION OF THE ARBOR ADJACENT TO THE CARRIAGE HOUSE

OCCUPANCY: EXISTING: A-3 (HOUSE MUSEUM)
PROPOSED A-3 (HOUSE MUSEUM)

ZONING: C-D (DOWNTOWN COMMERCIAL)

CONSTRUCTION TYPE: TYPE V-B

PROJECT DATA SUMMARY:
NET LOT AREA: 36,450 SF (0.83+/- AC)
EXISTING BUILDING FOOTPRINT: 1,829 SF
GROSS FLOOR AREA (SF)

EXISTING	
FIRST	1,829 SF (INCL. OPEN PORCHES)
SECOND	1,505 SF
TOTAL	3,334 SF

OCCUPANT LOADS:

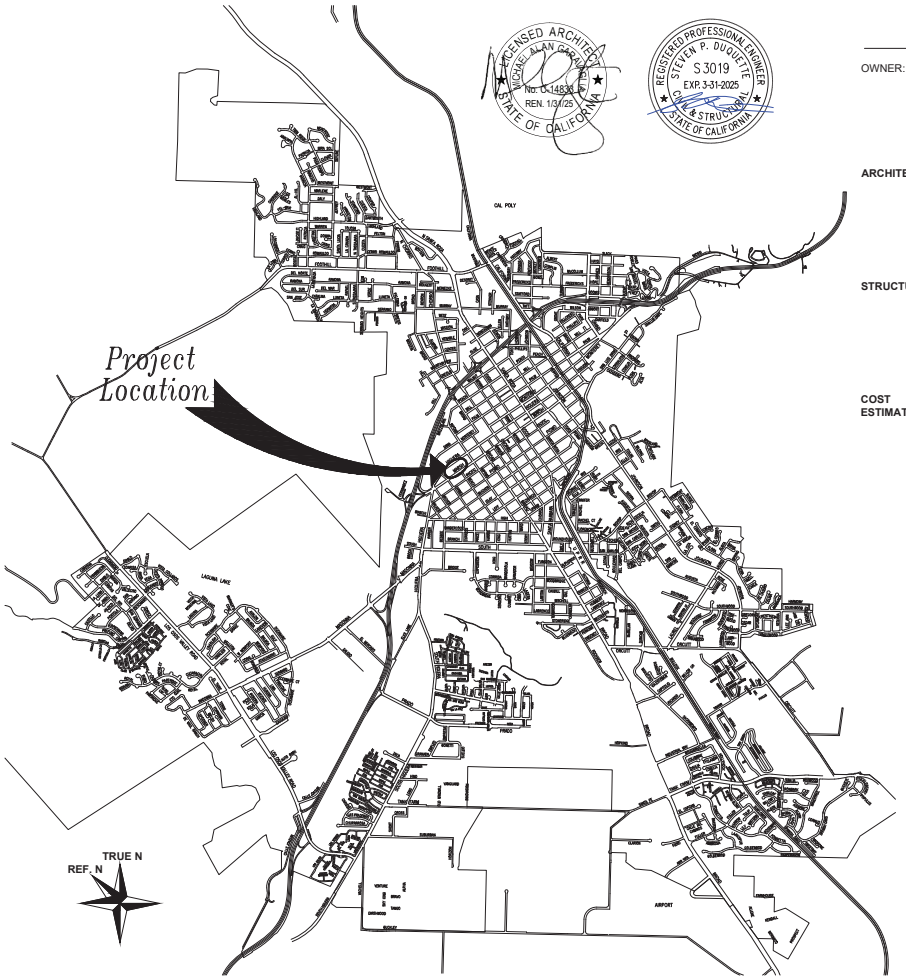
A-3 USED	AREA	LOAD FACTOR	#OCC
FIRST	1,025 SF	30/OCC NET	35
SECOND	868 SF	30/OCC NET	29
TOTAL	1893 SF		64

CODE INFORMATION

BUILDING CODE: 2022 CALIFORNIA HISTORICAL BUILDING CODE
2022 CALIFORNIA BUILDING CODE

FIRE PROTECTION: BUILDING IS FULLY SPRINKLERED

MEANS OF EGRESS: EXISTING 2 STORY BUILDING
BASED ON CALCULATED OCCUPANT LOAD, 1 EXIT REQUIRED AT SECOND 1 EXIT REQUIRED AT FIRST;
EXISTING 1 EXIT AT SECOND FLOOR, AND 2 EXITS AT FIRST FLOOR PROVIDED
MAXIMUM EXIT TRAVEL DISTANCE ALLOWED: 250 FT FOR FULLY SPRINKLERED



ARCHITECTURAL SYMBOLS

(E) CONSTRUCTION TO REMAIN
(E) CONSTRUCTION TO BE REMOVED
(N) 2x WOOD FRAME CONSTRUCTION
LINE ABOVE
LINE BELOW
CENTER LINE
DIRECTION OF SLOPE (DOWN)
PROPERTY LINE
1 / A1.01 DETAIL
1 KEYNOTE
1 / A1.01 SECTION
1 / A1.01 ELEVATION

PROJECT DIRECTORY

OWNER: CITY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS
919 PALM STREET
SAN LUIS OBISPO, CA 93401
CONTACT: SANDRA GOLONKA
TEL: 805.781.7239
EML:sgolonka@slocity.org

ARCHITECT: MICHAEL GARAVAGLIA AIA
GARAVAGLIA ARCHITECTURE, INC.
582 MARKET STREET, SUITE 1800
SAN FRANCISCO, CA 94104
CONTACT: AMBROSE WONG
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CONTACT: STEVE DUQUETTE
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COST ESTIMATION:
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1777 OAKLAND BOULEVARD
SUITE 103
WALNUT CREEK, CA 94596
CONTACT: JEFF SAYLOR
TEL: 925.330.2642
FAX: 415.291.3201
EML:jsaylor@lelandsaylor.com

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2 OF 13	A0.01 GENERAL NOTES
3 OF 13	A1.01 SITE PLAN - EXISTING/DEMO/PROPOSED
4 OF 13	A2.01 FLOOR PLANS-FIRST & SECOND EXISTING
5 OF 13	A2.02 PLANS- FOUNDATION & ROOF EXISTING
6 OF 13	A3.01 EXTERIOR ELEVATION - EXISTING SOUTH & EAST
7 OF 13	A3.02 EXTERIOR ELEVATION - EXISTING NORTH &WEST
8 OF 13	A8.01 EXTERIOR DETAILS
9 OF 13	A8.02 EXTERIOR DETAILS
10 OF13	A8.03 EXISTING RAILING DETAILS
11 OF13	A8.04 ARBOR (PLAN, ELEVATION, AND DETAILS)
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12 OF 13	S0.0 STRUCTURAL SPECS, ABBREVIATIONS SYMBOLS LEGEND, TABLE OF CONTENTS
13 OF 13	S1.0 ROOF FRAMING PLAN, TRELLIS EAST-WEST ELEVATION, TRELLIS NORTH-SOUTH ELEVATION TRELLIS SECTION/DETAILS

Reference Documents:
City Standard Specifications - August 2020 Edition
City Engineering Standards - August 2020 Edition
Project Specifications - 12 July 2024
Lead Paint / Asbestos Survey - Jack House - February 7, 2024

san luis obispo county, california

Jack House Roof, Widows Walk Repair, and Arbor Replacement

APPROVED BY

[MO DAY, YEAR]

Brian A. Nelson, City Engineer *R.C.E. C79870* *Approved Date*

SPECIFICATION NO.	DATE	SHEET
2000075-13	12 JULY 2024	1 of 13
	FILE NO./LOCATION -	

000-Architecture-NAS/2023022 - Jack House Repairs, SLO/Plot File/Plot Files/Jack House-A000 Cover Sheet-240904.dwg

ARCHITECTURAL GENERAL NOTES

1. THE CONTRACT FOR CONSTRUCTION WILL UTILIZE THE CITY PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION'S STANDARD FORM OF AGREEMENT FOR WORK ON CITY STRUCTURES.

2. THE CITY SHALL SUBMIT DRAWINGS FOR PLAN CHECK. THE CITY SHALL PAY FOR ALL PLAN CHECK FEES. THE CONTRACTOR SHALL PICK UP PERMITS.

3. ALL WORK SHALL CONFORM TO THE 2022 CALIFORNIA HISTORICAL BUILDING CODE, THE 2022 CALIFORNIA BUILDING CODE AS WELL AS TO THE LATEST EDITIONS OF THE ELECTRICAL, PLUMBING, MECHANICAL, AND ANY OTHER APPLICABLE CODES FOR THE COMPLETE SCOPE OF WORK. ALL WORK SHALL CONFORM TO THE SECRETARY OF THE INTERIOR STANDARDS FOR REHABILITATION AS OUTLINED ON THIS SHEET.

4. ALL WORK SHALL CONFORM TO ALL LOCAL CODES AND/OR ORDINANCES. ALL WORK SHALL BE PERFORMED IN CONFORMANCE WITH THESE PLANS, SPECIAL PROVISIONS PREPARED FOR THIS PROJECT AND THE 2020 CITY OF SAN LUIS OBISPO STANDARD SPECIFICATIONS AND ENGINEERING STANDARDS, IN CONJUNCTION WITH THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND STANDARD PLANS, 2015 EDITION (UNREVISED), AND LATEST EDITION OF CALIFORNIA MUTCO.

5. ALL WORK SHALL BE COMPLETED SKILLFULLY AND IN ACCORDANCE WITH ACCEPTED TRADE STANDARDS.

6. EXCEPT WHERE CONTRACT DOCUMENTS INCLUDE MORE STRINGENT REQUIREMENTS, APPLICABLE INDUSTRY STANDARDS INCLUDING MANUFACTURER STANDARDS AND INSTALLATION INSTRUCTIONS HAVE THE SAME FORCE AND EFFECT AS IF BOUND OR COPIED INTO THE CONTRACT DOCUMENTS. SUCH STANDARDS ARE PART OF THE CONTRACT DOCUMENTS BY REFERENCE. WHERE COMPLIANCE WITH A STANDARD IS REQUIRED, COMPLY WITH THE STANDARD IN EFFECT AS OF THE DATE OF THE CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL COORDINATE THE VARIOUS CONSTRUCTION ACTIVITIES TO ENSURE EFFICIENT AND ORDERLY INSTALLATION OF EACH PART OF THE WORK. COORDINATE CONSTRUCTION OPERATIONS THAT ARE DEPENDENT UPON EACH OTHER FOR PROPER INSTALLATION, CONNECTION, AND OPERATION.

8. CONTRACTOR SHALL INFORM THE CITY OF SCHEDULE REVISIONS.

9. CONTRACTOR SHALL INFORM THE CITY ON THE PROGRESS OF THE WORK ON A WEEKLY BASIS OR MORE FREQUENTLY AS CONDITIONS WARRANT.

10. CONTRACTOR SHALL SCHEDULE MEETINGS WITH THE CITY ON A TIMELY BASIS AND TO ALLOW FOR TIME REQUIRED TO PROVIDE APPROPRIATE RESPONSE TO ANY QUESTIONS OR SITE CONDITIONS.

11. CONTRACTOR SHALL ARRANGE FOR A MEETING AFTER DETERMINING THE PROJECT DIMENSIONAL LAYOUT FOR THE REVIEW BY THE CITY.

12. CONTRACTOR SHALL ALLOW TWO WEEKS FOR REVIEW BY THE CITY OF SUBMITTALS, SHOP DRAWINGS, SUBSTITUTIONS, AND RFI'S. CONTRACTOR SHALL REVIEW ALL SUBMITTALS FOR CLARITY AND COMPLETENESS BEFORE ISSUING THEM TO THE CITY FOR REVIEW.

13. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE CITY FOR REVIEW OF CONFORMANCE WITH DESIGN INTENT.

14. ALL CHANGE ORDERS SHALL BE IN WRITING AND SHALL BE SIGNED BY THE CITY, AND CONTRACTOR. CHANGE ORDERS SHALL BE SIGNED PRIOR TO BEGINNING THE WORK OR ORDERING THE MATERIALS ADDRESSED IN THE CHANGE ORDER.

15. CONTRACTOR SHALL SUBMIT ALL PROPOSED DESIGN CHANGES OR SUBSTITUTIONS TO THE CITY FOR APPROVAL. THE CITY SHALL NOT BE RESPONSIBLE FOR ANY FIELD CHANGES IN PLANS, DETAILS, OR SPECIFICATIONS UNLESS APPROVED IN WRITING AND IN ADVANCE BY THE CITY.

16. THE CONTRACTOR SHALL NOTIFY THE CITY OF ALL MODIFICATIONS REQUESTED BY THE BUILDING DEPARTMENT, OR OFFICIAL HAVING JURISDICTION, AND OF ALL CHANGES REQUESTED BY THE INSPECTOR, CITY, OR OTHERS. SUBSTITUTIONS WILL BE CONSIDERED, BUT DO NOT SUBSTITUTE DETAILS, EQUIPMENT, OR METHODS WITHOUT SPECIFIC WRITTEN APPROVAL BY THE CITY.

17. CONTRACTOR SHALL VERIFY WITH THE CITY, CODE UPGRADE WORK NOT REQUIRED BY BUILDING INSPECTORS. IF THE CONTRACTOR BELIEVES CODE WORK IS NECESSARY, AND IT HAS NOT BEEN REQUIRED BY BUILDING INSPECTOR, THE CITY SHALL DETERMINE WHETHER WORK SHALL BE UNDERTAKEN.

18. REMODELING OR REHABILITATION OF AN EXISTING BUILDING REQUIRES THAT CERTAIN ASSUMPTIONS BE MADE REGARDING EXISTING CONDITIONS. BECAUSE SOME OF THE ASSUMPTIONS MAY NOT BE VERIFIABLE WITHOUT DESTROYING ADEQUATE OR SERVICEABLE PORTIONS OF THE BUILDING, THE CONTRACTOR SHALL VERIFY ALL QUESTIONS, CONDITIONS, AND PROCEDURES WITH THE CITY PRIOR TO COMMENCING EACH PORTION OF THE WORK.

19. THE CONTRACTOR SHALL CONFIRM ALL EXISTING DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO BEGINNING WORK. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CITY FOR CLARIFICATION PRIOR TO PROCEEDING WITH WORK. THE CONTRACTOR SHALL RESOLVE ANY DISCREPANCY PRIOR TO PROCEEDING WITH WORK.

20. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS. DIMENSIONS ARE TO THE FACE OF FINISH, UNLESS OTHERWISE NOTED.

21. WHERE CONSTRUCTION ABUTS ADJACENT PROPERTY OR AN EXISTING STRUCTURE, THE CONTRACTOR SHALL VERIFY, PRIOR TO THE START OF WORK, IF ANY CONDITIONS WILL AFFECT WORK PROGRESS OR CONFORMANCE TO THESE DOCUMENTS.

22. THE REMOVAL OR ALTERING IN ANY WAY OF EXISTING WORK SHALL BE CARRIED ON IN SUCH A MANNER AS TO PREVENT INJURY OR DAMAGE TO ANY PORTION(S) OF THE EXISTING WORK, WHICH REMAIN(S).

23. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE INCURRED AS A RESULT OF THE WORK. ANY DAMAGE SHALL BE REHABILITATED AT NO ADDITIONAL COST TO CITY. REPAIR WORK MUST FOLLOW THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION.

24. EXECUTE WORK TO ENSURE THE SAFETY OF PERSONS AND ADJACENT PROPERTY FROM DAMAGE CAUSED BY CONSTRUCTION OPERATIONS IN CONNECTION WITH THIS WORK. WHERE EXISTING CONSTRUCTION IS CUT, DAMAGED, OR REMODELED, PATCH OR REPLACE WITH MATERIALS TO MATCH IN KIND, QUALITY, AND PERFORMANCE WITH ADJACENT MATERIALS.

25. DO NOT NOTCH, BORE, OR CUT MEMBERS FOR PIPES, DUCTS, OR OTHER REASONS WITHOUT THE SPECIFIC, ADVANCE WRITTEN APPROVAL OF THE CITY.

26. THE CONTRACTOR IS RESPONSIBLE FOR CAPPING OFF ANY UTILITY LINES DISTURBED DURING THE DEMOLITION AND CONSTRUCTION PROCESS THAT COULD BE A SAFETY HAZARD OR CAUSE DAMAGE TO THE BUILDING.

27. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TEMPORARY SUPPORTS, BARRICADES, AND SHORING AS REQUIRED DURING THE CONSTRUCTION PROCESS.

28. UNLESS OTHERWISE INDICATED, ALL NEW WORK SHALL MATCH EXISTING MATERIALS, DETAILS, TRIM, ETC. TO THE FULLEST EXTENT POSSIBLE. PROVIDE PRODUCTS OF THE SAME KIND AND FROM A SINGLE SOURCE.

29. PRIOR TO ORDERING OR FABRICATING MATERIAL, EQUIPMENT, OR PRODUCTS, THE CONTRACTOR SHALL DETERMINE THAT THE SIZE AND PRODUCTS INDICATED MEET THE INTENT OF THE CONTRACT DOCUMENTS.

30. THE CONTRACTOR SHALL INSPECT MATERIALS AND EQUIPMENT IMMEDIATELY UPON DELIVERY AND AGAIN PRIOR TO INSTALLATION. CONTRACTOR SHALL REJECT DAMAGED AND DEFECTIVE ITEMS.

31. CONTRACTOR SHALL INSTALL ALL EQUIPMENT, FIXTURES, AND MATERIALS PER MANUFACTURER'S RECOMMENDATIONS. FOLLOW MANUFACTURER'S INSTRUCTIONS CAREFULLY. MANUFACTURER'S INSTRUCTIONS AND GUARANTEES SHALL BE GIVEN TO THE CITY AT THE END OF THE JOB.

32. THE CONTRACTOR SHALL FLASH AND COUNTER FLASH TO SMACNA STANDARDS, INDUSTRY STANDARDS, AND MANUFACTURER'S SPECIFICATIONS WHEREVER NECESSARY TO PROVIDE A WATERPROOF AND WEATHERPROOF CONSTRUCTION PROJECT.

33. IF OPENED IN COURSE OF WORK PROVIDE AND INSTALL NEW FIBERGLASS BATT INSULATION TO MEET THE MINIMUM R-VALUE REQUIREMENTS SPECIFIED IN THE CALIFORNIA ENERGY CODE.

34. NOT USED

35. ADEQUATE PREPARATION OF THE SUBSTRATE IS IMPERATIVE FOR PROPER BONDING OF THE PAINT. PREPARE EACH SUBSTRATE AS RECOMMENDED BY THE MANUFACTURER. CLEAN ALL SURFACES THROUGHOUT, REMOVE ANY PAINT WHERE BONDING FAILURE IS EVIDENT & ROUGHEN ANY SURFACES AS REQUIRED FOR ADHESION OF (N) PAINT.

36. ALL EXTERIOR EXPOSED WOOD TO BE APPROVED, NATURALLY WEATHER AND PEST RESISTANT, OR PRESSURE TREATED WHERE ALLOWED BY THE DOCUMENTS. ALL CUTS SHALL BE TREATED W/ PRESERVATIVE COATING BEFORE INSTALLATION. ALL METAL CONNECTORS AND FASTENERS IN CONTACT WITH TREATED WOOD SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL.

37. ALL REPLACEMENT SIDING AND EXTERIOR TRIM SHALL BE TIGHT VERTICAL GRAIN REDWOOD (NO SAP WOOD), ALTERNATE CAN BE TIGHT VERTICAL GRAIN YELLOW CEDAR (NO SAP WOOD,) U.O.N.;ALL TO MATCH PROFILE AND DIMENSIONS OF THE EXISTING, U.O.N.

38. ALL FINISHES SHALL BE APPLIED AS FOLLOWS:
a. EXTERIOR: THREE COAT, (STAIN & SEAL WHERE INDICATED)
b. INTERIOR: TWO COAT FOR LIGHT INTERIOR, THREE COAT FOR DARK INTERIOR, (STAIN & SEAL WHERE INDICATED)
c. COLORS TO BE SELECTED BY THE CITY FROM SHERWIN-WILLIAMS AS STANDARD PAINT MANUFACTURER FOR THE PROPERTY. FINAL ACCEPTANCE OF COLORS WILL BE FROM JOB-APPLIED SAMPLES. PROVIDE FULL COAT FINISH SAMPLES ON SURFACES WITH A MINIMUM SIZE OF 4 SF FOR APPROVAL BY THE CITY.

39. AS A MINIMUM, ALL EXTERIOR WOOD TRIM SHALL BE PAINT GRADE, TIGHT VERTICAL GRAIN, WEATHER-RESISTANT WOOD.

40. CONTRACTOR SHALL CONTACT CITY FOR DECISIONS REGARDING ALL MATERIALS PROVIDED BY CONTRACTOR WHICH REQUIRE COLOR OR FINISH SELECTIONS.

41. NOT USED

42. THE CONTRACTOR SHALL KEEP THE JOB SITE CLEAN AND SAFE AT ALL TIMES, INCLUDING CLEANING MATERIALS, PROTECTING CONSTRUCTION IN PROGRESS AND ADJOINING MATERIALS IN PLACE. PROVIDE TEMPORARY, PROTECTIVE COVERINGS WHERE NECESSARY TO ENSURE PROTECTION FROM DAMAGE OR DETERIORATION.

43. CONTRACTOR SHALL PERIODICALLY CLEAN AND MAINTAIN COMPLETED CONSTRUCTION ON A REGULAR BASIS. AT THE COMPLETION OF THE PROJECT, PROVIDE A FINAL CLEANING OF ALL SURFACES. BROOM SWEEP EXTERIOR SURFACES, AND VACUUM INTERIOR FLOORS ALONG PATH OF TRAVEL. CONTRACTOR SHALL LEAVE THE PREMISES CLEAN AND ORDERLY AND READY FOR OCCUPANCY.

44. CONTRACTOR SHALL DISPOSE OF ALL DEBRIS AND WASTE OFF SITE IN A LEGAL MANNER ON A REGULAR BASIS TO PREVENT EXCESS ACCUMULATION ON SITE.

45. CONTRACTOR SHALL INSPECT THE (E) BUILDING FOR ANY ADDITIONAL PROBLEMS OR CONCERNS (STRUCTURAL, FINISH, MECHANICAL, ETC.) WHICH ARE NOT REFLECTED IN THE DRAWINGS & NOTATIONS AND THEN REPORT ANY FINDINGS TO THE CITY DURING BID PHASE AND BEFORE PROCEEDING WITH WORK.

46. CONTRACTOR SHALL COVER AND PROTECT LANDSCAPE AREAS AND PLANTS TO PREVENT DAMAGE DURING EACH WORK DAY. APPLIED COVER MATERIAL SHALL ALLOW AIRFLOW TO PLANTS.

47. CONTRACTOR SHALL PROVIDE THEIR OWN TOILET FACILITIES FOR DURATION OF WORK; ON SITE TOILET FACILITIES ARE NOT TO BE UTILIZED BY CONSTRUCTION STAFF.

SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION

FOR COMPLETE TEXT AND GUIDELINES, GO TO:
https://www.nps.gov/articles/000/treatment-standards-rehabilitation.htm

1. A PROPERTY WILL BE USED AS IT WAS HISTORICALLY OR BE GIVEN A NEW USE THAT REQUIRES MINIMAL CHANGE TO ITS DISTINCTIVE MATERIALS, FEATURES, SPACES AND SPATIAL RELATIONSHIPS.

2. THE HISTORIC CHARACTER OF A PROPERTY WILL BE RETAINED AND PRESERVED. THE REMOVAL OF DISTINCTIVE MATERIALS OR ALTERATION OF FEATURES, SPACES AND SPATIAL RELATIONSHIPS THAT CHARACTERIZE A PROPERTY WILL BE AVOIDED.

3. EACH PROPERTY WILL BE RECOGNIZED AS A PHYSICAL RECORD OF ITS TIME, PLACE AND USE. CHANGES THAT CREATE A FALSE SENSE OF HISTORICAL DEVELOPMENT, SUCH AS ADDING CONJECTURAL FEATURES OR ELEMENTS FROM OTHER HISTORIC PROPERTIES, WILL NOT BE UNDERTAKEN.

4. CHANGES TO A PROPERTY THAT HAVE ACQUIRED HISTORIC SIGNIFICANCE IN THEIR OWN RIGHT WILL BE RETAINED AND PRESERVED.

5. DISTINCTIVE MATERIALS, FEATURES, FINISHES AND CONSTRUCTION TECHNIQUES OR EXAMPLES OF CRAFTSMANSHIP THAT CHARACTERIZE A PROPERTY WILL BE PRESERVED.

6. DETERIORATED HISTORIC FEATURES WILL BE REPAIRED RATHER THAN REPLACED. WHERE THE SEVERITY OF DETERIORATION REQUIRES REPLACEMENT OF A DISTINCTIVE FEATURE, THE NEW FEATURE WILL MATCH THE OLD IN DESIGN, COLOR, TEXTURE AND, WHERE POSSIBLE, MATERIALS. REPLACEMENT OF MISSING FEATURES WILL BE SUBSTANTIATED BY DOCUMENTARY AND PHYSICAL EVIDENCE.

7. CHEMICAL OR PHYSICAL TREATMENTS, IF APPROPRIATE, WILL BE UNDERTAKEN USING THE GENTLEST MEANS POSSIBLE. TREATMENTS THAT CAUSE DAMAGE TO HISTORIC MATERIALS WILL NOT BE USED.

8. ARCHEOLOGICAL RESOURCES WILL BE PROTECTED AND PRESERVED IN PLACE. IF SUCH RESOURCES MUST BE DISTURBED, MITIGATION MEASURES WILL BE UNDERTAKEN.

9. NEW ADDITIONS, EXTERIOR ALTERATIONS OR RELATED NEW CONSTRUCTION WILL NOT DESTROY HISTORIC MATERIALS, FEATURES AND SPATIAL RELATIONSHIPS THAT CHARACTERIZE THE PROPERTY. THE NEW WORK WILL BE DIFFERENTIATED FROM THE OLD AND WILL BE COMPATIBLE WITH THE HISTORIC MATERIALS, FEATURES, SIZE, SCALE AND PROPORTION, AND MASSING TO PROTECT THE INTEGRITY OF THE PROPERTY AND ITS ENVIRONMENT.

10. NEW ADDITIONS AND ADJACENT OR RELATED NEW CONSTRUCTION WILL BE UNDERTAKEN IN SUCH A MANNER THAT, IF REMOVED IN THE FUTURE, THE ESSENTIAL FORM AND INTEGRITY OF THE HISTORIC PROPERTY AND ITS ENVIRONMENT WOULD BE UNIMPAIRED.

ARCHITECTURAL REPLACEMENT OF MISSING HISTORICAL ELEMENTS

1. GENERAL PROCEDURE: SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

2. ALL WORK FOR THIS PROJECT SHALL CONFORM TO THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION. THESE STANDARDS ARE LISTED ON THIS SHEET.

3. THE REPLACEMENT OF MISSING HISTORICAL CONSTRUCTION ELEMENTS REQUIRES THE FULL ATTENTION AND COOPERATION OF THE CONTRACTOR. THE CONTRACTOR SHALL DEVELOP A SYSTEM OR PROCESS OF RECORDATION PRIOR TO THE START OF ANY WORK.

4. EVERY EFFORT SHALL BE MADE TO REPAIR, RATHER THAN REPLACE, EXISTING ELEMENTS. SUCH REPAIR MAY INCLUDE REPLACEMENT OF EXTENSIVELY DETERIORATED OR MISSING ELEMENTS.

5. HISTORICAL PHYSICAL AND PICTORIAL DOCUMENTATION, IN ADDITION TO SURVIVING PROTOTYPES, WILL BE THE BASIS FOR ANY HISTORIC REHABILITATION MEASURE. DOCUMENT ALL EXISTING DETAILS PRIOR TO START OF ANY REPAIR OR REPLACEMENT WORK,

6. THE USE OF SALVAGED MATERIALS IS STRONGLY ENCOURAGED AS A MEANS OF REPLACING FEATURES NO LONGER COMMONLY AVAILABLE. THIS OPTION SHALL BE GIVEN THE HIGHEST PRIORITY WHEN IT IS NOT FEASIBLE TO REPAIR A DETERIORATED ELEMENT.

7. CONTRACTOR SHALL DOCUMENT THE LOCATION, ORIENTATION AND ANY OTHER INFORMATION THAT WILL AID IN THE CORRECT REINSTALLATION OF AN ELEMENT PRIOR TO REMOVAL AND STORAGE OF THAT ELEMENT AS REQUIRED BY THE CONTRACT DOCUMENTS OR AS MIGHT BE REQUIRED TO ALLOW OTHER WORK TO PROCEED.

8. PROTECT ALL EXISTING ELEMENTS DURING ALL PHASES OF CONSTRUCTION WORK.

9. CONTRACTOR SHALL PROVIDE HISTORICAL ELEMENT SHOP DRAWINGS AS OUTLINED BELOW AND IN THE SPECIFICATIONS.

10. CONTRACTOR SHALL MEASURE AND DOCUMENT ON HISTORICAL ELEMENT SHOP DRAWINGS THE "GHOSTING" OF MISSING ELEMENTS REQUIRING REPLACEMENT AND THEIR LOCATIONS. THE CONTRACTOR SHALL ALSO RECORD ON THESE SHOP DRAWINGS ANY OTHER RELEVANT INFORMATION REGARDING THESE MISSING ELEMENTS THAT CAN BE GLEANED FROM THE FIELD. THESE MEASUREMENTS SHALL BE RECORDED ONTO THESE SHOP DRAWINGS AT AN APPROPRIATE SCALE AND SUBMITTED TO THE ARCHITECT FOR REVIEW.

11. THE CONTRACTOR SHALL NOTE ON THE HISTORICAL ELEMENT SHOP DRAWINGS THE MATERIALS OF IN SITU ELEMENTS AND PROPOSE ALTERNATIVE MATERIALS, SHOULD THE IN SITU MATERIALS NO LONGER BE AVAILABLE.

12. THE HISTORICAL ELEMENT SHOP DRAWINGS/SUBMITTALS SHALL IDENTIFY HOW THE CONTRACTOR INTENDS TO FABRICATE AND INSTALL THESE ELEMENTS. THE CITY WILL REVIEW THESE SHOP DRAWINGS/SUBMITTALS FOR DESIGN INTENT.

13. ONCE THE CITY HAS HAD AN OPPORTUNITY TO REVIEW THESE SHOP DRAWINGS, THE CITY AND CONTRACTOR SHALL ARRANGE A SPECIAL COORDINATION MEETING TO REVIEW THE INTERPRETATION PROPOSED BY THE CITY AND THE RECONSTRUCTION METHOD PROPOSED BY THE CONTRACTOR.

14. THE CITY WILL THEN ISSUE THE REVIEWED HISTORICAL ELEMENT SHOP DRAWINGS TO THE CONTRACTOR WITH APPROPRIATE COMMENTS.

ARCHITECTURAL ABBREVIATIONS

∠	ANGLE	KIT.	KITCHEN
@	AT	LAM.	LAMINATE
℄	CENTERLINE	LAV.	LAVATORY
#	POUND OR NUMBER	L.P.	LOW POINT
(E)	EXISTING	M.O.	MASONRY OPENING
(N)	NEW	MAX.	MAXIMUM
A.F.F.	ABOVE FINISH FLOOR	MECH.	MECHANICAL
ACOUS.	ACOUSTICAL	MTL.	METAL
ADJ.	ADJUSTABLE	MIN.	MINIMUM
AGGR.	AGGREGATE	N.A.	NOT APPLICABLE
ALUM.	ALUMINUM	N.I.C.	NOT IN CONTRACT
APPROX.	APPROXIMATE	N.T.S.	NOT TO SCALE
ARCH.	ARCHITECTURAL	NO.	NUMBER
ASPH.	ASPHALT	O.C.	ON CENTER
BM.	BEAM	OPNG.	OPENING
BTWN.	BETWEEN	OPP.	OPPOSITE
BITUM.	BITUMINOUS	OFOS	OUTSIDE FACE OF STUD
BLKG.	BLOCKING	o/	OVER
BD.	BOARD	OD	OUTSIDE DIAMETER
BOT.	BOTTOM	OFD	OVERFLOW DRAIN
BLDG.	BUILDING	PTD	PAINTED
CLG.	CEILING	PR	PAIR
CEM.	CEMENT	PART.	PARTITION
CER.	CERAMIC	PERM.	PERMANENT
CLR.	CLEAR	PLAS.	PLASTER
CLO.	CLOSET	PL.	PLATE
COL.	COLUMN	PLUMB.	PLUMBING
CONC.	CONCRETE	PLYWD.	PLYWOOD
CONT.	CONTINUOUS	PT.	POINT
CORR.	CORRIDOR	PREFIN.	PREFINISHED
DTL.	DETAIL	PTDF	PRESSURE TREATED DOUGLAS FIR
DIA.	DIAMETER	P.B.O.	PROVIDED BY OWNER
DIM.	DIMENSION	R.	RADIUS
DR.	DOOR	RWL	RAIN WATER LEADER
D.H.	DOUBLE HUNG	REF.	REFRIGERATOR
DN	DOWN	REINF.	REINFORCED
DWG.	DRAWING	REQ.	REQUIRED
EA.	EACH	R.D.	ROOF DRAIN
ELEC.	ELECTRICAL	RM.	ROOM
ELEV.	ELEVATION / ELEVATOR	R.O.	ROUGH OPENING
EQ.	EQUAL	S.S.D.	SEE STRUCTURAL DRAWINGS
E.J.	EXPANSION JOINT	SHT.	SHEET
EXT.	EXTERIOR	SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION
F.O.C.	FACE OF CONCRETE	SIM.	SIMILAR
FOF	FACE OF FINISH	S.H.	SINGLE HUNG
FOS	FACE OF STUD	S.C.	SOLID CORE
FIN.	FINISH	SPEC.	SPECIFICATION
F.E.	FIRE EXTINGUISHER	SQ.	SQUARE
FLR.	FLOOR	S.S.	STAINLESS STEEL
FD	FLOOR DRAIN	STOR.	STORAGE
FLUOR.	FLUORESCENT	STRUCT.	STRUCTURAL
FT.	FOOT OR FEET	SUSP.	SUSPENDED
FTG.	FOOTING	SYM.	SYMBOL
F.A.U.	FORCED AIR UNIT	TEL.	TELEPHONE
FDN.	FOUNDATION	TOI.	TOILET
FURR.	FURRING	T&G	TONGUE AND GROOVE
GALV.	GALVANIZED	T.O.	TOP OF
GA.	GAUGE	T.O.C.	TOP OF CURB
GL.	GLASS	T.O.W.	TOP OF WALL
GYP.	GYPSUM	TYP.	TYPICAL
HT.	HEIGHT	U.O.N.	UNLESS OTHERWISE NOTED
H.P.	HIGH POINT	VERT.	VERTICAL
H.C.	HOLLOW CORE	VEST.	VESTIBULE
H.B.	HOSE BIBB	W.C.	WATER CLOSET
HR.	HOUR	W/	WITH
INSUL.	INSULATION	W/O	WITHOUT
INT.	INTERIOR	WD.	WOOD
ID	INSIDE DIAMETER		

CITY OF SAN LUIS OBISPO

PROJECT TITLE: Jack House Roof, Widows Walk Repair, and Arbor Replacement

SHEET TITLE: A0.01 GENERAL NOTES

LICENSED ARCHITECT
MICHAEL ALAN GARAVAGLIA
No. C-14833
REN. 1/31/25
STATE OF CALIFORNIA

DESIGNED BY:	MG
DRAWN BY:	HA
CHECKED BY:	AW
APPROVED BY:	
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	2 of 13

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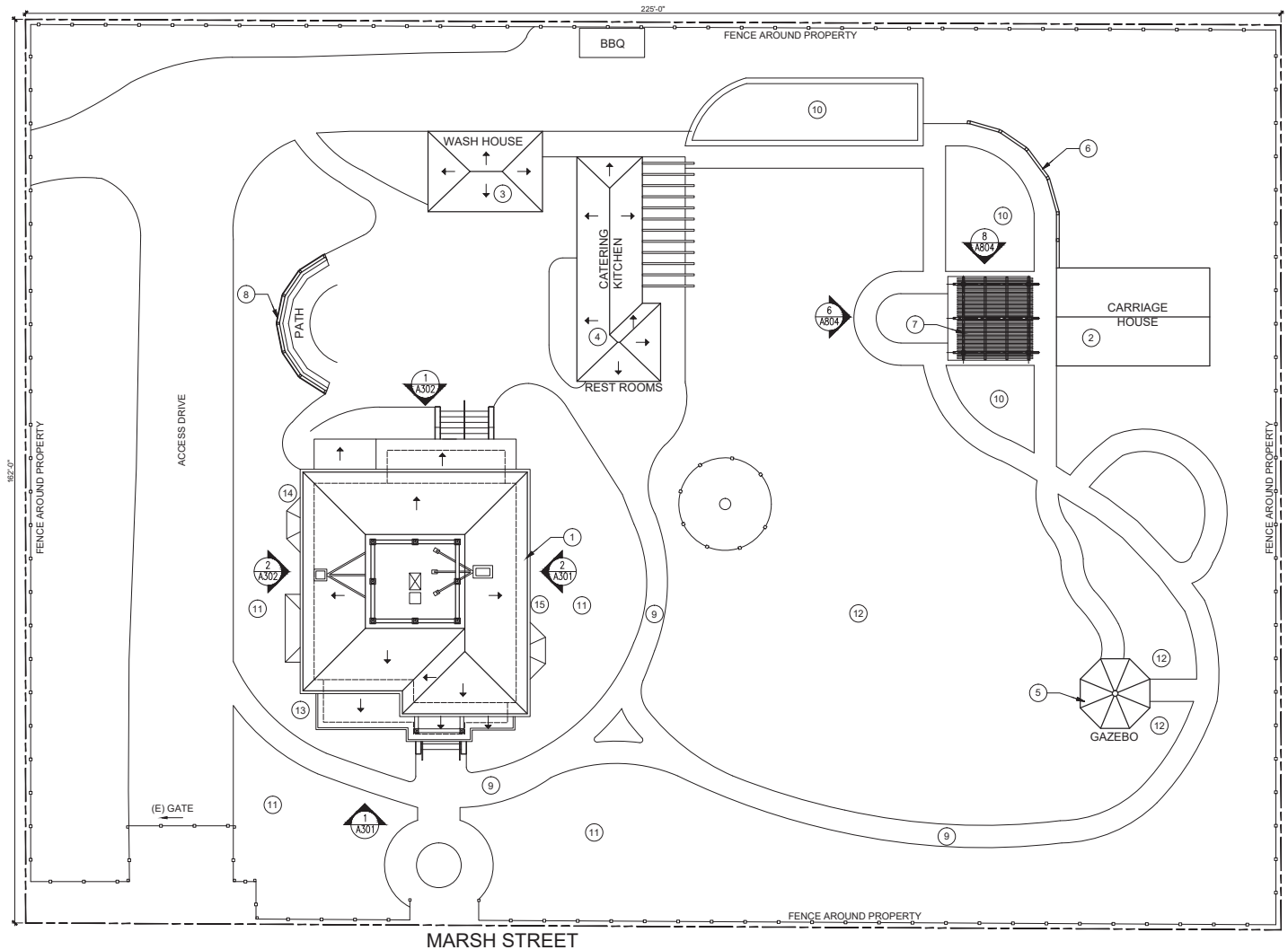


1 SITE PLAN
SCALE: 1" = 10'

SHEET NOTES

1. PROPERTY LINES ARE FROM ASSESSOR PARCEL MAP, EXISTING STRUCTURE LOCATION, SITE FEATURES, & DRIVEWAYS ARE BASED ON A CITY LANDSCAPE PLAN.
2. (E) TREE LOCATIONS ARE BASED ON CITY LANDSCAPE PLAN
3. (E) PAVED PEDESTRIAN PATHS ARE TO REMAIN, UON; ALL PATHS IMMEDIATELY ADJACENT TO AREA OF WORK OR USED FOR CREW CIRCULATION / MATERIAL TRANSPORT ARE TO BE PROTECTED FOR DURATION OF SCOPE OF WORK.
4. (E) PICKET FENCING TO REMAIN, UON
5. MATERIALS STORAGE, EXTERIOR WORK AREA, AND PATH OF TRAVEL FOR CREW CIRCULATION / MATERIAL TRANSPORT TO BE COORDINATED WITH AND APPROVED BY CITY. COORDINATE SCOPE OF WORK OF ALL TRADES BEFORE ANY WORK STARTED.

KEY NOTES

1. (E) HISTORIC HOUSE, TO REMAIN; SEE PLANS FOR SPECIFIC SCOPE OF WORK
2. (E) HISTORIC CARRIAGE HOUSE, TO REMAIN AND BE PROTECTED FOR DURATION OF CONSTRUCTION
3. (E) HISTORIC WASH HOUSE, TO REMAIN AND BE PROTECTED
4. (E) CATERER'S KITCHEN, RESTROOM BUILDING, AND ATTACHED TRELLIS TO REMAIN AND BE PROTECTED
5. (E) GAZEBO, TO REMAIN AND BE PROTECTED
6. (E) FACETED FENCE IS NOT IN SCOPE AND IS TO REMAIN AND BE PROTECTED FOR DURATION OF CONSTRUCTION
7. ARBOR/ TRELLIS TO BE RECONSTRUCTED BASED ON (E) POST BASE LOCATIONS; EXISTING SALVAGED ELEMENTS LOCATED AT CITY CORP YARD ARE TO BE USED AS TEMPLATES FOR RECREATING THE REPLACEMENT PARTS; SEE SHEET A8.04
8. (E) CURVED LATTICE SCREEN & BENCH IS NOT IN SCOPE AND IS TO REMAIN AND BE PROTECTED FOR DURATION OF CONSTRUCTION
9. (E) ACCESSIBLE PATH OF TRAVEL
10. (E) PLANTER TO REMAIN AND BE PROTECTED FOR DURATION OF CONSTRUCTION
11. (E) PLANTING AREAS OF GARDEN TO REMAIN AND BE PROTECTED, TYPICAL
12. (E) LAWN AREA OF GARDEN TO REMAIN AND BE PROTECTED, TYPICAL
13. (E) FIRE SPRINKLER POC INTO HOUSE TO REMAIN AND BE PROTECTED FOR DURATION OF CONSTRUCTION
14. (E) ELECTRICAL METER PANEL TO REMAIN AND BE PROTECTED FOR DURATION OF CONSTRUCTION
15. (E) GAS METER TO REMAIN AND BE PROTECTED FOR DURATION OF CONSTRUCTION

CITY OF SAN LUIS OBISPO

PROJECT TITLE: Jack House Roof, Widows Walk Repair, and Arbor Replacement

SHEET TITLE: A1.01

SITE PLAN

LICENSED ARCHITECT MICHAEL ALAN GARAVAGLIA No. C-14863 REN. 1/31/25 STATE OF CALIFORNIA

DESIGNED BY:	MG
DRAWN BY:	HA
CHECKED BY:	AW
APPROVED BY:	
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	3 of 13

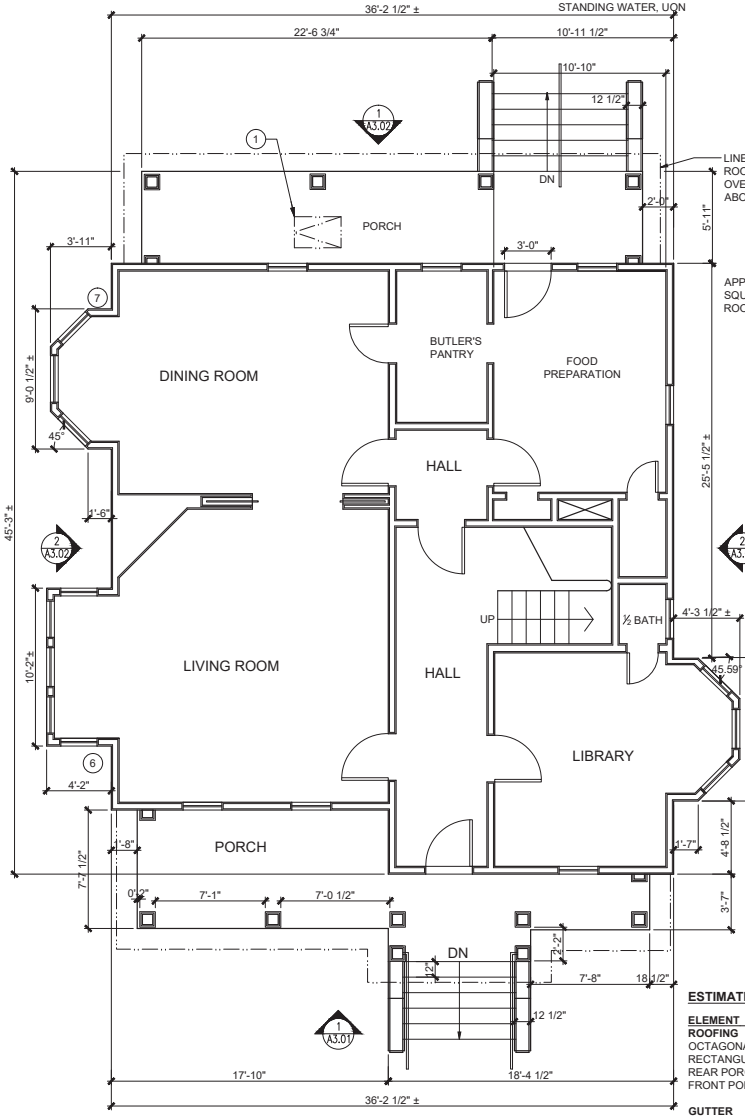
000-Architecture-NAS/2023022 - Jack House Repairs, SLO/Flat File/Plot Files/Jack House-A101 Site Plan-240904.dwg

SHEET NOTES

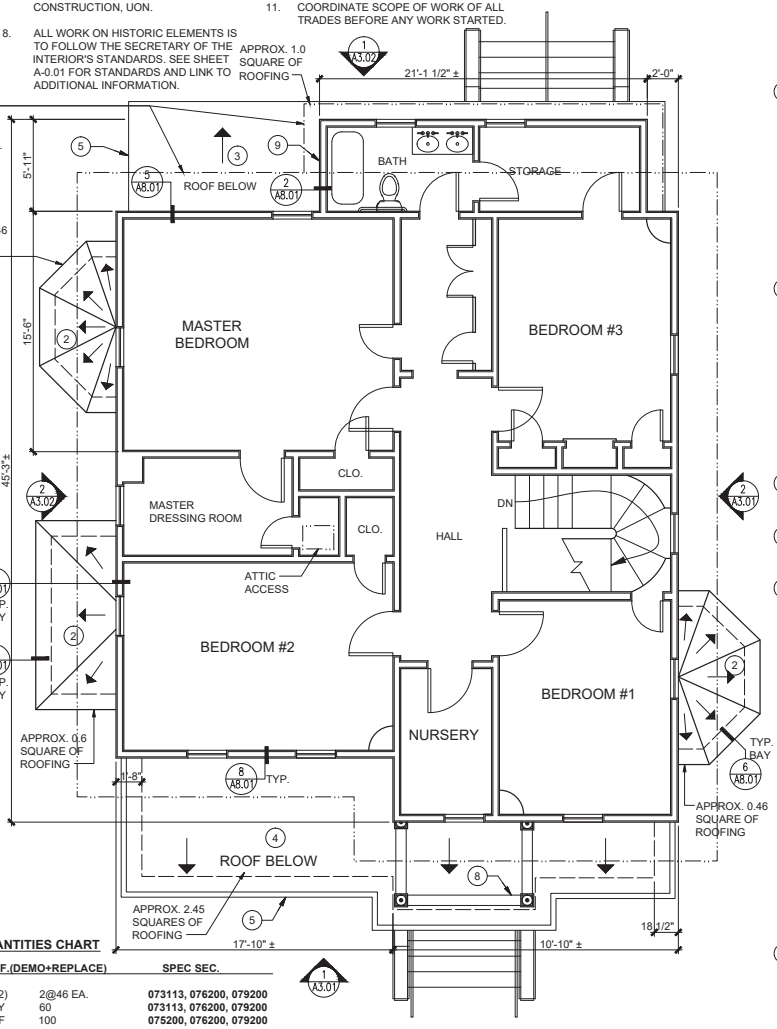
1. PROTECT IN PLACE ALL EXISTING (E) ELEMENTS TO REMAIN, TO PREVENT DAMAGE OF ADJACENT AREAS DURING CONSTRUCTION WORK.
2. DEMOLISH AND REMOVE COMPLETE ITEMS NOTED FOR DEMOLITION.REFER TO ARCHITECTURAL GENERAL NOTES, AND SPECIFICATIONS FOR ADDITIONAL DEMOLITION-SPECIFIC REQUIREMENTS.
3. MOVE ITEMS NOTED FOR SALVAGE TO CITY'S DESIGNATED STORAGE LOCATION, PROTECTED FROM WEATHER AND RAISED ABOVE GROUND SURFACE, UON
4. ALL HORIZONTAL SURFACES ARE TO HAVE MINIMUM 1/4"/FT SLOPE TO AVOID STANDING WATER, UON
5. ALL SHEET METAL JOINTS TO BE SOLDERED OR SEALED TO BE WEATHER TIGHT FOLLOWING SMACNA STANDARDS.
6. ALL ROOF TO WALL JOINTS MUST BE PROPERLY FLASHED WEATHER TIGHT.
7. ALL (E) HISTORIC WINDOWS & DOORS, TRIM & OTHER SIMILAR ELEMENTS ARE TO REMAIN IN PLACE & BE PROTECTED FROM DAMAGE FOR THE DURATION OF CONSTRUCTION, UON.
8. ALL WORK ON HISTORIC ELEMENTS IS TO FOLLOW THE SECRETARY OF THE INTERIOR'S STANDARDS. SEE SHEET A-0.01 FOR STANDARDS AND LINK TO ADDITIONAL INFORMATION.
9. AREAS OF ROOFING NOTED ARE APPROXIMATE FOR REFERENCE ONLY FOR PURPOSES OF BIDDING. FINAL ACTUAL AREA QUANTITIES MUST BE FIELD MEASURED BY CONTRACTOR.
10. ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY AND NEED TO BE VERIFIED IN FIELD PRIOR TO BEING USED FOR AREA/QUANTITY DETERMINATION.
11. COORDINATE SCOPE OF WORK OF ALL TRADES BEFORE ANY WORK STARTED.

KEY NOTES

1. (E) CRAWL SPACE ACCESS TO REMAIN
2. REMOVE ALL (E) ROLL ROOFING MATERIALS, AND FLASHING DOWN TO (E) WOOD SHEATHING, REPLACE ANY DAMAGED OR DETERIORATED SHEATHING AS REQUIRED TO PROVIDE A PROPER SUBSTRATE. INSTALL (N) DOUBLE LAPPED CAP SHEET ROOFING W/ 17" EXPOSURE FROM A 39" WIDTH ROLL. INSTALL GALV SHT MTL BASE & COUNTER FLASHING AT WALL INTEGRATED WITH ROOFING AND GALV SHT MTL EDGE FLASHING PER NRCA STANDARDS
3. REMOVE (E) MINERAL CAP SHEET ROOFING MATERIAL, AND FLASHING DOWN TO (E) WOOD SHEATHING, REPLACE ANY DAMAGED OR DETERIORATED SHEATHING AS REQUIRED TO PROVIDE A PROPER SUBSTRATE. INSTALL (N) DOUBLE LAPPED CAP SHEET ROOFING W/ 17" EXPOSURE FROM A 39" WIDTH ROLL. INSTALL GALV SHT MTL BASE & COUNTER FLASHING AT WALL INTEGRATED WITH ROOFING AND GALV SHT MTL EDGE FLASHING PER NRCA STANDARDS
4. (E) CONDITIONS OF SHEET METAL TILE ROOFING TO BE DOCUMENTED IN WRITING, AND BY PHOTOS THEN SUBMITTED TO CITY, IDENTIFYING S.F. AREA OF CORROSION & L.F. OF SOLDERING/JOINT SEALING. SURFACE CORROSION TO BE CLEANED, TREATED WITH RUST CONVERTING SOLUTION, COATED W/ CORROSION INHIBITIVE PRIMER, AND THEN REPAINTED W/ COLOR TO MATCH (E). ALL OPEN JOINTS ARE TO BE SEALED W/ A COMPATIBLE, PAINTABLE SEALANT AFTER CLEANING OF SHEET METAL.
5. CLEAN SURFACE CORROSION ON (E) SHEET METAL FLASHING & GUTTER AT ROOF OVERHANG, TREAT WITH RUST CONVERTING SOLUTION, COAT W/ CORROSION INHIBITIVE PRIMER, AND THEN REPAINT TO MATCH (E) BY COLOR NUMBER; WHERE CORROSION IS NOT REPAIRABLE REPLACE W/ (N) GALV SHT MTL GUTTER & FLASHING TO MATCH (E) PROFILE AND FINISH. REMOVE ALL DEBRIS FROM AND CLEAN GUTTERS, THEN INSTALL (N) DEBRIS SCREEN O/ ALL GUTTERS TO KEEP OUT TREE DEBRIS
6. (E) FIRE SPRINKLER CONNECTIONS TO REMAIN AND BE PROTECTED FOR DURATION OF ALL WORK
7. (E) ELECTRICAL METER PANEL TO REMAIN AND BE PROTECTED FOR DURATION OF ALL WORK
8. (E) DECORATIVE WOOD ROOF RAILING TO BE REHABILITATED WITH RAILING TO BE DISASSEMBLED INTO INDIVIDUAL ELEMENTS & TAGGED FOR SPECIFIC LOCATION IN ASSEMBLY, AND ALL PAINT TO BE STRIPPED, METHOD TO BE DETERMINED BY CONTRACTOR PER SPECIFICATIONS. AFTER PAINT IS STRIPPED, PREPARE A SUMMARY LIST OF HISTORIC RAIL ELEMENTS THAT WILL NEED TO BE REPLACED IN-KIND, DUE TO DETERIORATION, AND SUBMIT TO CITY. ALL REPLACEMENT ELEMENTS SHALL BE FABRICATED USING THE SHAPE AND PROFILE OF THE REMAINING (E) ELEMENTS, THAT ARE TO BE RE-INSTALLED, AS TEMPLATES. DUTCHMAN REPAIRS SHOULD BE USED BEFORE FULL REPLACEMENT OF ELEMENT. EPOXY WOOD PATCHING LIMITED TO 1 CUBIC INCH OF VOLUME PER PATCH FOLLOWING MANUFACTURER'S MINIMUM THICKNESS EDGE. ALL REPLACEMENT WOOD MUST BE NATURALLY WEATHER & PEST RESISTANT, NO EXPOSED PTDF. SEE SHT A8.03
9. (E) PLUMBING PENETRATIONS, AT THIS LOCATION, TO BE REMOVED, AND CAPPED IF REQUIRED, THEN PATCH HOLES IN SHEATHING IN PREPARATION FOR FLASHING & REROOFING. SEE DETAIL 3/A8.01.



1 FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"



2 SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"

ESTIMATED QUANTITIES CHART

ELEMENT	S.F.(DEMO+REPLACE)	SPEC SEC.
ROOFING		
OCTAGONAL BAY (2)	2@46 EA.	**073113, 076200, 079200**
RECTANGULAR BAY	60	**073113, 076200, 079200**
REAR PORCH ROOF	100	**075200, 076200, 079200**
FRONT PORCH (METAL)	245 (REPAIR ONLY)	**076100, 076200, 079200**
GUTTER	**L.F.(CLEAN/REPLACE)**	
FRONT PORCH ROOF	54 / 5	**076200, 079200**

0' 1' 2' 4' 8'

REF. N
TRUE N

CITY OF SAN LUIS OBISPO

PROJECT TITLE: Jack House Roof, Widows Walk Repair, and Arbor Replacement

SHEET TITLE: FLOOR PLANS

SHEET NO.: A2.01

LICENSED ARCHITECT — MICHAEL GRANGER — No. C-14833 — REN. 1/31/25 — STATE OF CALIFORNIA

DESIGNED BY:	MG
DRAWN BY:	HA
CHECKED BY:	AW
APPROVED BY:	
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	4 of 13

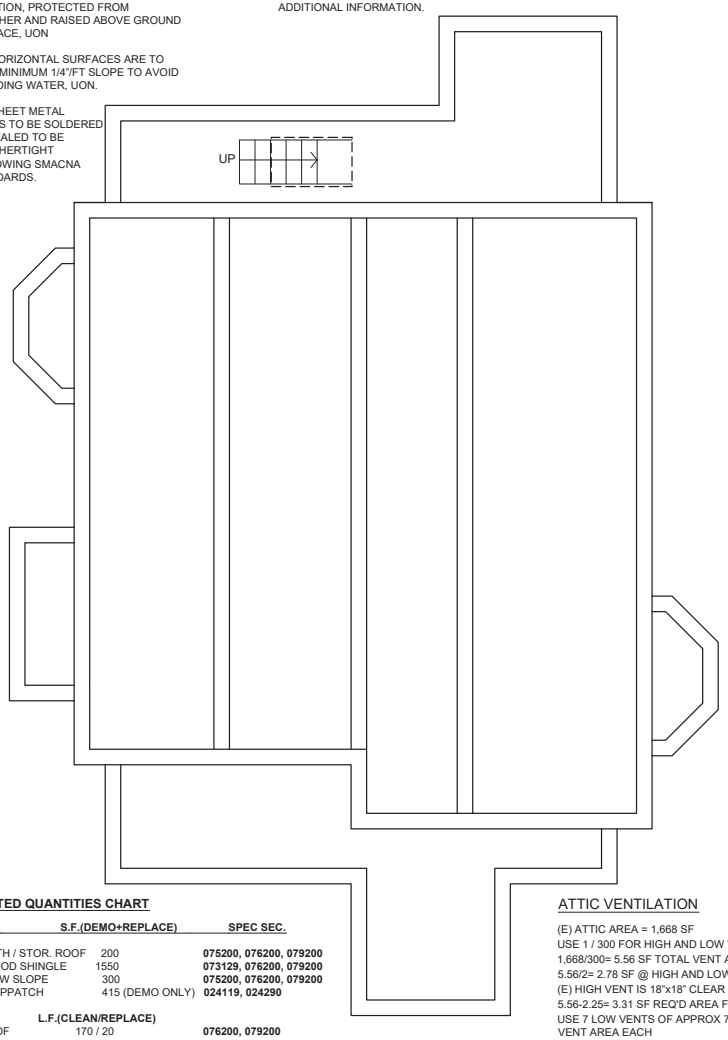
000--Architecture--NAS/2023022 -- Jack House Repairs, SLO/Flat File/Plot Files/Jack House--A201 Floor Plans--240904.dwg

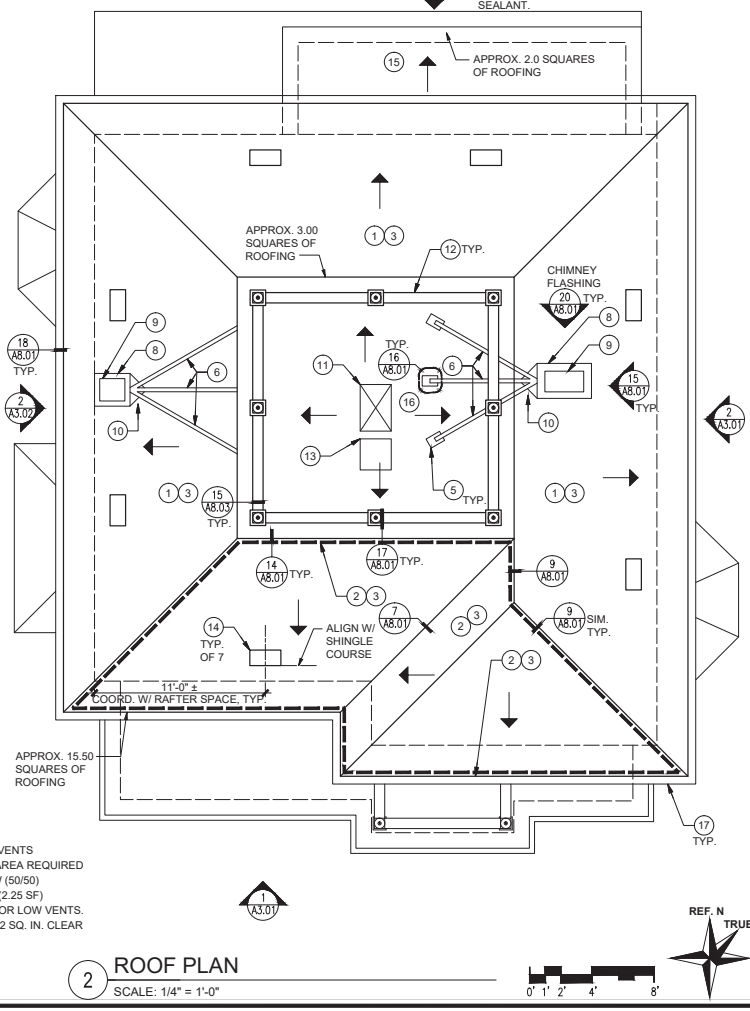
SHEET NOTES

1. PROTECT IN PLACE ALL EXISTING (E) ELEMENTS TO REMAIN, TO PREVENT DAMAGE OF ADJACENT AREAS DURING CONSTRUCTION WORK.
2. DEMOLISH AND REMOVE COMPLETE ITEMS NOTED FOR DEMOLITION. REFER TO ARCHITECTURAL GENERAL NOTES, AND SPECIFICATIONS FOR ADDITIONAL DEMOLITION-SPECIFIC REQUIREMENTS
3. MOVE ITEMS NOTED FOR SALVAGE TO CITY'S DESIGNATED STORAGE LOCATION, PROTECTED FROM WEATHER AND RAISED ABOVE GROUND SURFACE, UON
4. ALL HORIZONTAL SURFACES ARE TO HAVE MINIMUM 1/4"/FT SLOPE TO AVOID STANDING WATER, UON.
5. ALL SHEET METAL JOINTS TO BE SOLDERED OR SEALED TO BE WEATHERTIGHT FOLLOWING SMACNA STANDARDS.
6. ALL PLUMBING AND MECHANICAL PENETRATIONS MUST BE FLASHED WEATHERTIGHT TO ROOF ASSEMBLY PER SMACNA STANDARDS.
7. PROVIDE REQUIRED HIGH /LOW ATTIC VENTILATION, PER CBC SECTION 1202.2.1 W/ FREE AREA NOT LESS THAN 1/300 OF ATTIC AREA.
8. ALL WORK ON HISTORIC ELEMENTS IS TO FOLLOW THE SECRETARY OF THE INTERIOR'S STANDARDS. SEE SHEET A-0.01 FOR STANDARDS AND LINK TO ADDITIONAL INFORMATION.
9. AREAS OF ROOFING NOTED ARE APPROXIMATE FOR REFERENCE ONLY FOR PURPOSES OF BIDDING. FINAL ACTUAL AREA QUANTITIES MUST BE FIELD MEASURED BY CONTRACTOR.
10. ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY AND NEED TO BE VERIFIED IN FIELD PRIOR TO BEING USED FOR AREA/QUANTITY DETERMINATION.
11. COORDINATE SCOPE OF WORK OF ALL TRADES BEFORE ANY WORK STARTED.

KEY NOTES

1. REMOVE (E) WOOD SHINGLES ROOFING MATERIALS, AND FLASHING DOWN TO (E) PLYWOOD SHEATHING, REPLACE ANY DAMAGED OR DETERIORATED PLYWOOD AS REQUIRED TO PROVIDE A PROPER SUBSTRATE. PREP FOR INSTALLATION OF (N) FIRE RETARDANT TREATED CEDAR SHINGLES.
2. REMOVE (E) CAP SHEET PATCH ROOFING MATERIALS, AND FLASHING DOWN TO (E) PLYWOOD SHEATHING, REPLACE ANY DAMAGED OR DETERIORATED PLYWOOD AS REQUIRED TO PROVIDE A PROPER SUBSTRATE. PREP FOR INSTALLATION OF (N) FIRE RETARDANT TREATED CEDAR SHINGLES.
3. INSTALL (N) CLASS "B" FIRE RETARDANT TREATED CEDAR SHINGLES O/ VENTILATION MAT, O/ ROOFING FELT O/ 5/8" TYPE "X" GYP SHEATHING O/ (E) PLYWOOD SHEATHING.
4. REMOVE & REPLACE (E) MINERAL CAP SHEET ROOFING MATERIALS, AND FLASHING.
5. PROVIDE STEEL ANGLE RISERS SET IN PITCH PANS FOR (E) STEEL ANGLE CHIMNEY BRACES AND RECONNECT BRACES ABOVE PITCH PAN.
6. (E) STEEL ANGLE CHIMNEY BRACES TO REMAIN.
7. NOT USED
8. PROVIDE AND INSTALL (N) STEPPED HOT DIPPED GALV SHEET METAL COUNTER FLASHING AT CHIMNEY, SET INTO RAKED AND CLEANED OUT MORTAR JOINT W/ HOOKED METAL EDGE, THEN FILL JOINT WITH SPECIFIED SEALANT.
9. PROVIDE AND INSTALL (N) HOT DIPPED, SOLDERED, GALV SHEET METAL CAP EXTENDED OVER (E) CHIMNEY BRACE BAND AND BRACE ANGLE CONNECTIONS. FINISH TO MATCH BRICK COLOR. SEE DTL 20/A8.01
10. PROVIDE AND INSTALL (N) HOT DIPPED, SOLDERED, GALV SHT MTL CRICKET W/ GALV SHT MTL COUNTER FLASHING SET INTO MORTAR JOINT W/ HOOKED METAL EDGE, THEN FILL JOINT W/ SEALANT. SEE DTLS 10/A8.01 & 20/A8.01
11. (E) ROOF ACCESS HATCH TO REMAIN. FLASH (N) MINERAL CAP SHEET ROOFING TO (E) CURB
12. (E) DECORATIVE WOOD ROOF RAILING TO BE REHABILITATED WITH RAILING TO BE DISASSEMBLED INTO INDIVIDUAL ELEMENTS & TAGGED FOR SPECIFIC LOCATION IN ASSEMBLY, AND ALL PAINT TO BE STRIPPED, METHOD TO BE DETERMINED BY CONTRACTOR PER SPECIFICATIONS. AFTER PAINT IS STRIPPED, PREPARE A SUMMARY LIST OF HISTORIC RAIL ELEMENTS THAT WILL NEED TO BE REPLACED IN-KIND, DUE TO DETERIORATION, AND SUBMIT TO CITY. ALL REPLACEMENT ELEMENTS SHALL BE FABRICATED USING THE SHAPE AND PROFILE OF THE REMAINING (E) ELEMENTS, THAT ARE TO BE RE-INSTALLED, AS TEMPLATES. DUTCHMAN REPAIRS SHOULD BE USED BEFORE FULL REPLACEMENT OF ELEMENT. EPOXY WOOD PATCHING LIMITED TO 1 CUBIC INCH OF VOLUME PER PATCH FOLLOWING MANUFACTURER'S MINIMUM THICKNESS EDGE. ALL REPLACEMENT WOOD MUST BE NATURALLY WEATHER & PEST RESISTANT, NO EXPOSED PTDF. SEE SHT A8.03
13. (E) HIGH ROOF VENT TO HAVE (N) LOUVERED SCREENED VENTS INSTALLED (MATCHING EXISTING OPENING SIZE) @ ALL 4 FACES, JOINTS SEALED, REPAINTED. PROPERLY FLASH THE VENT TO (N) LOW SLOPE ROOFING SYSTEM.
14. INSTALL PAINTED (N) LOW-PROFILE SHT MTL LOW ROOF VENTS OPENING TO ATTIC, TYP OF 7. ALIGNMENT OF LOWER VENT EDGE SHALL BE COORDINATED W/ SHINGLE COURSES, TYP. AT ALL LOCATIONS.
15. REMOVE (E) CAP SHEET ROOFING AND FLASHING DOWN TO (E) WOOD SHEATHING, REPLACE ANY DAMAGED OR DETERIORATED SHEATHING AS REQUIRED TO PROVIDE A PROPER SUBSTRATE. INSTALL (N) DOUBLE LAPPED CLASS "A" MINERAL CAP SHEET ROOFING W/ 17" EXPOSURE FROM A 39" WIDTH ROLL. INSTALL GALV SHT MTL BASE & COUNTER FLASHING AT WALL INTEGRATED WITH ROOFING AND GALV SHT MTL EDGE FLASHING PER NRCA STANDARDS
16. REMOVE (E) CAP SHEET ROOFING MATERIALS AND FLASHING DOWN TO (E) SHEATHING, REPLACE ANY DAMAGED OR DETERIORATED SHEATHING AS REQUIRED TO PROVIDE A PROPER SUBSTRATE. INSTALL (N) CLASS "A" MINERAL CAP SHEETING ROLL ROOFING SLOPED TO DRAIN @ ALL 4 EDGES
17. SURFACE CORROSION ON (E) GUTTER & TRANSITION FLASHING TO BE CLEANED, TREATED WITH RUST CONVERTING SOLUTION, COATED W/ CORROSION INHIBITIVE PRIMER, RECOAT INTERIOR, AND THEN REPAINT W/ COLOR TO MATCH (E). ALL OPEN JOINTS ARE TO BE SEALED W/ A COMPATIBLE, PAINTABLE SEALANT AFTER CLEANING OF SHT MTL. IF GUTTER HAS THROUGH-CORROSION, REPLACE CORRODED GUTTER SECTION W/ (N) METAL GUTTER SECTION THAT MATCHES (E) MATERIAL, PROFILE, AND FINISH. SOLDER IN (N) SECTION TO BE WATERTIGHT. REMOVE ALL DEBRIS FROM AND CLEAN GUTTERS, THEN INSTALL (N) DEBRIS SCREEN O/ ALL GUTTERS TO KEEP OUT TREE DEBRIS





ESTIMATED QUANTITIES CHART

ELEMENT	S.F.(DEMO+REPLACE)	SPEC SEC.
ROOFING		
REAR BATH / STOR. ROOF	200	**075200, 076200, 079200**
MAIN -WOOD SHINGLE	1550	**073129, 076200, 079200**
MAIN - LOW SLOPE	300	**075200, 076200, 079200**
MAIN - CAPPATCH	415 (DEMO ONLY)	**024119, 024290**
GUTTER	**L.F.(CLEAN/REPLACE)**	
MAIN ROOF	170 / 20	**076200, 079200**

ATTIC VENTILATION

(E) ATTIC AREA = 1,668 SF
USE 1 / 300 FOR HIGH AND LOW VENTS
1,668/300= 5.56 SF TOTAL VENT AREA REQUIRED
5.56/2= 2.78 SF @ HIGH AND LOW (50/50)
(E) HIGH VENT IS 18"x18" CLEAR (2.25 SF)
5.56-2.25= 3.31 SF REQ'D AREA FOR LOW VENTS.
USE 7 LOW VENTS OF APPROX 72 SQ. IN. CLEAR VENT AREA EACH

1 (E) FOUNDATION PLAN - REF. ONLY
SCALE: 1/4" = 1'-0"

2 ROOF PLAN
SCALE: 1/4" = 1'-0"

CITY OF SAN LUIS OBISPO

PROJECT TITLE: Jack House Roof, Widows Walk Repair, and Arbor Replacement

SHEET TITLE: A2.02 FOUNDATION & ROOF PLANS

LICENSED ARCHITECT MICHAEL ANTHONY GARCIA No. C-14803 REN. 1/31/25 STATE OF CALIFORNIA

DESIGNED BY:	MG
DRAWN BY:	HA
CHECKED BY:	AW
APPROVED BY:	
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	5 of 13

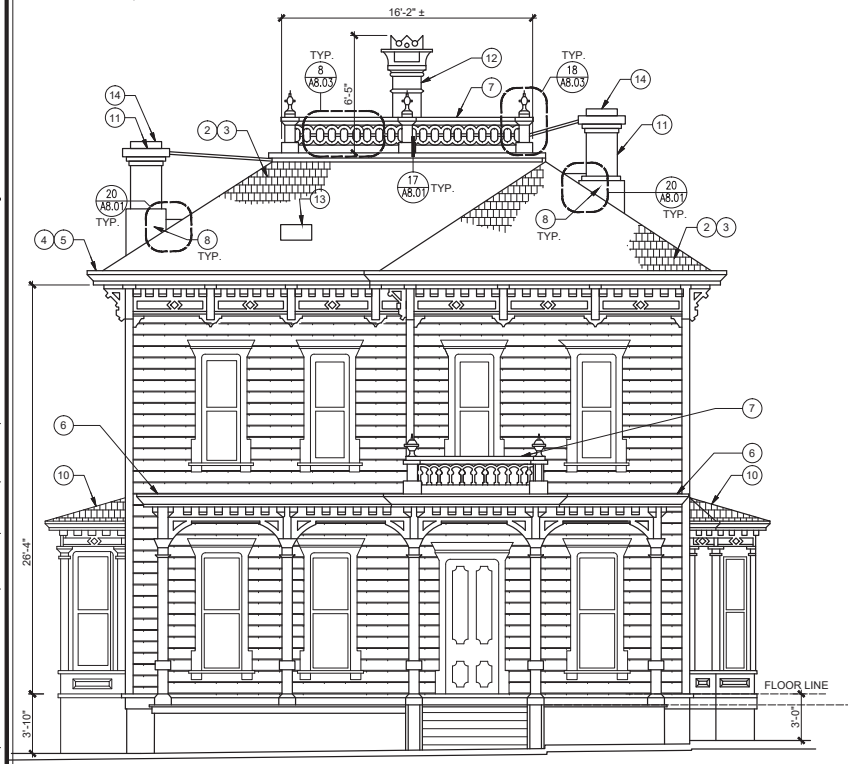
000--Architecture--NAS/2023022 - Jack House Repairs, SLO/Plot File/Plot Files/Jack House--A202 Floor Plans--240904.dwg

SHEET NOTES

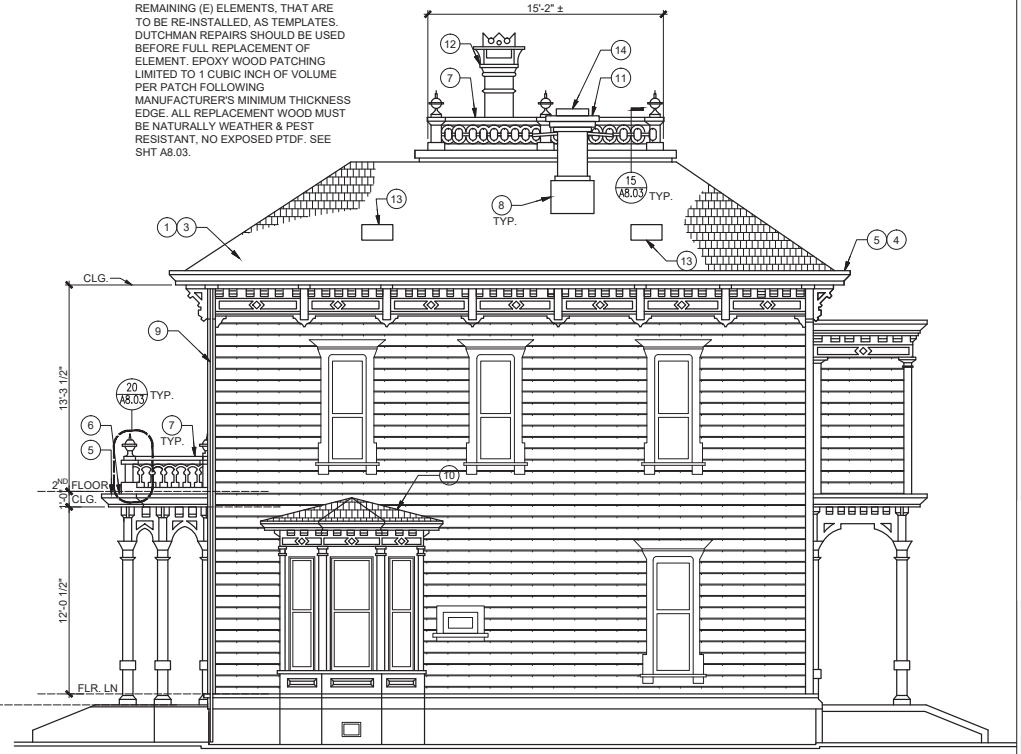
1. PROTECT IN PLACE ALL EXISTING (E) ELEMENTS TO REMAIN, TO PREVENT DAMAGE OF ADJACENT AREAS DURING CONSTRUCTION WORK.
2. DEMOLISH AND REMOVE COMPLETE ITEMS NOTED FOR DEMOLITION. REFER TO ARCHITECTURAL GENERAL NOTES, AND SPECIFICATIONS FOR ADDITIONAL DEMOLITION-SPECIFIC REQUIREMENTS.
3. MOVE ITEMS NOTED FOR SALVAGE TO CITY'S DESIGNATED STORAGE LOCATION, PROTECTED FROM WEATHER AND RAISED ABOVE GROUND SURFACE, UON.
4. ALL SHEET METAL JOINTS TO BE SOLDERED OR SEALED TO BE WEATHERTIGHT FOLLOWING SMACNA STANDARDS.
5. ALL ROOF TO WALL JOINTS MUST BE PROPERLY FLASHED WEATHERTIGHT.
6. ALL (E) HISTORIC WINDOWS & DOORS, TRIM & OTHER SIMILAR ELEMENTS ARE TO REMAIN IN PLACE & BE PROTECTED FROM DAMAGE FOR THE DURATION OF CONSTRUCTION, UON.
7. ALL WORK ON HISTORIC ELEMENTS IS TO FOLLOW THE SECRETARY OF THE INTERIOR'S STANDARDS. SEE SHEET A-0.01 FOR STANDARDS AND LINK TO ADDITIONAL INFORMATION.
8. ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY AND NEED TO BE VERIFIED IN FIELD PRIOR TO BEING USED FOR AREA/QUANTITY DETERMINATION.
9. ONCE REPAIRED AND AFTER COMPLETING SURFACE PREP, ALL RAILING & TRIM TO BE PRIMED AND PAINTED PER SPECIFICATIONS W/ SELECTED COLOR SCHEME.
10. PROVIDE REQUIRED HIGH / LOW ATTIC VENTILATION, PER CBC SECTION 1202.2.1 W/ FREE AREA NOT LESS THAN 1/300 OF ATTIC AREA.
11. COORDINATE SCOPE OF WORK OF ALL TRADES BEFORE ANY WORK STARTED.

KEY NOTES

1. REMOVE (E) WOOD SHINGLE ROOFING AND FLASHING DOWN TO (E) SHEATHING, REPLACE ANY DAMAGED OR DETERIORATED SHEATHING AS REQUIRED TO PROVIDE A PROPER SUBSTRATE. PREP FOR NEW ROOFING.
2. REMOVE (E) CAP SHEET PATCH ROOFING AND FLASHING DOWN TO (E) SHEATHING, REPLACE ANY DAMAGED OR DETERIORATED SHEATHING AS REQUIRED TO PROVIDE A PROPER SUBSTRATE. PREP FOR NEW ROOFING.
3. INSTALL (N) CLASS "B" FIRE RETARDANT TREATED CEDAR SHINGLES O/ VENTILATION MAT, O/ ROOFING FELT O/ 5/8" TYPE "X" GYP SHEATHING O/ (E) PLYWOOD SHEATHING.
4. (E) SHEET METAL BASE FLASHING AND GUTTER TO BE CLEANED, RECOATED, AND REPAINTED W/ CORROSION INHIBITIVE PRIMER, AND FINISH COATS.
5. REMOVE ALL DEBRIS FROM AND CLEAN GUTTERS, THEN RESEAL/RESOLDER ANY OPEN JOINTS.
6. (E) CONDITIONS OF SHEET METAL TILE ROOFING TO BE DOCUMENTED IN WRITING, AND BY PHOTOS THEN SUBMITTED TO CITY, IDENTIFYING S.F. AREA OF CORROSION & L.F. OF SOLDERING/JOINT SEALING. SURFACE CORROSION TO BE CLEANED, TREATED WITH RUST CONVERTING SOLUTION, COATED W/ CORROSION INHIBITIVE PRIMER, AND THEN REPAINTED W/ COLOR TO MATCH (E). ALL OPEN JOINTS ARE TO BE SEALED W/ A COMPATIBLE, PAINTABLE SEALANT AFTER CLEANING OF SHEET METAL.
7. (E) DECORATIVE WOOD ROOF RAILING TO BE REHABILITATED WITH RAILING TO BE DISASSEMBLED INTO INDIVIDUAL ELEMENTS & TAGGED FOR SPECIFIC LOCATION IN ASSEMBLY, AND ALL PAINT TO BE STRIPPED, METHOD TO BE DETERMINED BY CONTRACTOR PER SPECIFICATIONS. AFTER PAINT IS STRIPPED, PREPARE A SUMMARY LIST OF HISTORIC RAIL ELEMENTS THAT WILL NEED TO BE REPLACED IN-KIND, DUE TO DETERIORATION, AND SUBMIT TO CITY. ALL REPLACEMENT ELEMENTS SHALL BE FABRICATED USING THE SHAPE AND PROFILE OF THE REMAINING (E) ELEMENTS, THAT ARE TO BE RE-INSTALLED, AS TEMPLATES. DUTCHMAN REPAIRS SHOULD BE USED BEFORE FULL REPLACEMENT OF ELEMENT. EPOXY WOOD PATCHING LIMITED TO 1 CUBIC INCH OF VOLUME PER PATCH FOLLOWING MANUFACTURER'S MINIMUM THICKNESS EDGE. ALL REPLACEMENT WOOD MUST BE NATURALLY WEATHER & PEST RESISTANT, NO EXPOSED PTDF. SEE SHT A8.03.
8. PROVIDE AND INSTALL (N) STEPPED HOT DIPPED GALV SHEET METAL COUNTER FLASHING AT CHIMNEY, SET INTO RAKED AND CLEANED OUT MORTAR JOINT W/ HOOKED METAL EDGE, THEN FILL JOINT WITH SPECIFIED SEALANT. SEE DETAIL 10/A8.01.
9. INSPECT (E) SHEET METAL RWL FOR PROPER ATTACHMENT, AND WATERTIGHTNESS. REPLACE DAMAGED OR DETERIORATED SECTIONS IN-KIND, MATCHING PROFILE, MATERIAL & FINISH. RWL OUTLET TO BE CENTERED DIRECTLY OVER (E) STORM WATER DRAINAGE SYSTEM INLETS MAINTAINING AIR GAP, TYP.
10. REMOVE ALL (E) ROLL ROOFING AND FLASHING DOWN TO (E) WOOD SHEATHING. INSTALL (N) CLASS "A" COMP SHINGLE ROOFING O/ ROOFING FELT W/ (N) SHT MTL FLASHING @ ROOF TO WALL JOINT AND AT EAVE EDGES.
11. CONTRACTOR TO HAVE A CHEMICAL ANALYSIS CONDUCTED ON HISTORIC MORTAR TO DETERMINE (E) MIX, WHICH WILL BE USED FOR REPOINTING. REPOINT ALL EXISTING MORTAR JOINTS; REPOINT JOINTS W/ MIX MORTAR MATCHING HISTORIC MIX. SEE 11/A8.01
12. (E) HIGH ROOF VENT TO HAVE (N) LOUVERED SCREENED VENTS INSTALLED (MATCHING EXISTING OPENING SIZE) @ ALL 4 FACES, JOINTS SEALED, REPAINTED. PROPERLY FLASH THE VENT TO (N) LOW SLOPE ROOFING SYSTEM.
13. INSTALL PAINTED (N) LOW-PROFILE SHT MTL LOW ROOF VENTS, TYP OF 7. PLACEMENT SHALL BE COORDINATED W/ SHINGLE COURSES
14. PROVIDE AND INSTALL (N) HOT DIPPED, SOLDERED, GALV SHEET METAL CAP EXTENDED OVER (E) CHIMNEY BRACE BAND AND BRACE ANGLE CONNECTIONS. FINISH TO MATCH BRICK COLOR. SEE DTL 20/A8.01



1 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



2 EAST ELEVATION
SCALE: 1/4" = 1'-0"

0' 1' 2' 4' 8'

CITY OF SAN LUIS OBISPO

PROJECT TITLE: Jack House Roof, Widows Walk Repair, and Arbor Replacement

SHEET TITLE: A3.01 EXTERIOR ELEVATIONS

LICENSED ARCHITECT MICHAEL A. NASH SANDERS No. C-14833 REN: 1/31/25 STATE OF CALIFORNIA

DESIGNED BY:	MG
DRAWN BY:	HA
CHECKED BY:	AW
APPROVED BY:	
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	6 of 13

000-Architecture-NAS/2023022 - Jack House Repairs, SLO/Plot File/Plot Files/Jack House-A301 Ext Elev-240904.dwg

SHEET NOTES

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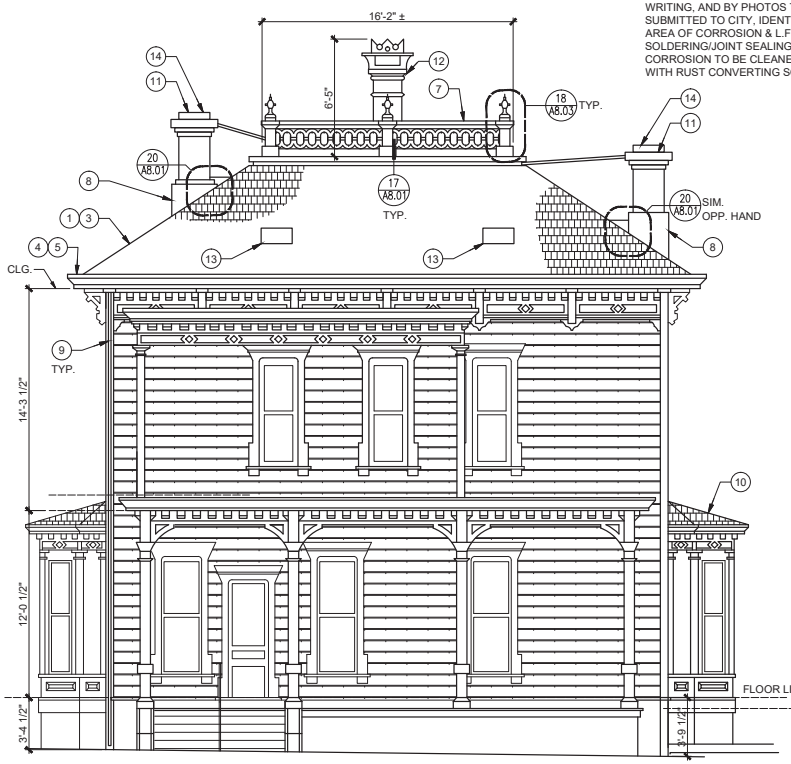
14. PROVIDE AND INSTALL (N) HOT DIPPED, SOLDERED, GALV SHEET METAL CAP EXTENDED OVER (E) CHIMNEY BRACE BAND AND BRACE ANGLE CONNECTIONS. FINISH TO MATCH BRICK COLOR. SEE DTL 20/A8.01



1 NORTH ELEVATION
SCALE: 1/4" = 1'-0"

2 WEST ELEVATION
SCALE: 1/4" = 1'-0"

0' 1' 2' 4' 8'

CITY OF SAN LUIS OBISPO

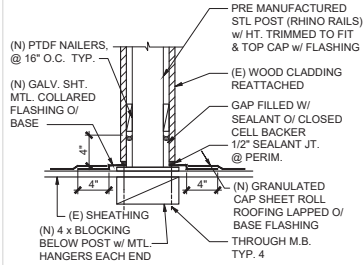
PROJECT TITLE: Jack House Roof, Widows Walk Repair, and Arbor Replacement

SHEET TITLE: A3.02 EXTERIOR ELEVATIONS

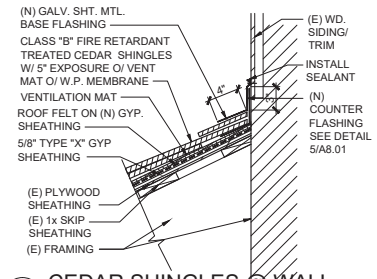
LICENSED ARCHITECT DANIEL PLANT CHADDICK No. C-14823 REN: 1/31/25 STATE OF CALIFORNIA

DESIGNED BY:	MG
DRAWN BY:	HA
CHECKED BY:	AW
APPROVED BY:	
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	7 of 13

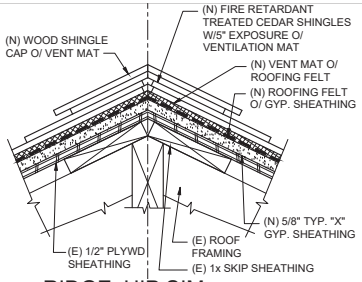
000--Architecture--NAS/2023022 -- Jack House Repairs, SLO/Plot File/Plot Files/Jack House--A302 Ext Elev--2409004.dwg



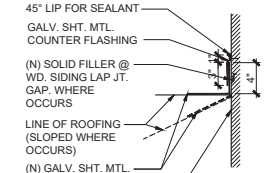
17 RAIL POST BASE
SCALE: 1-1/2" = 1'-0"



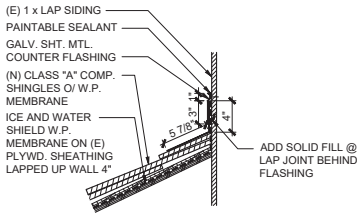
13 CEDAR SHINGLES @ WALL
SCALE: 1-1/2" = 1'-0"
CLASS "A" ASSEMBLY



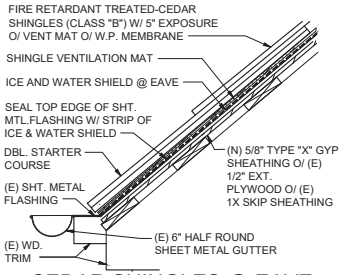
9 RIDGE, HIP SIM
SCALE: 3" = 1'-0"



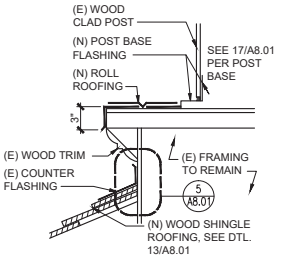
5 COUNTER FLASHING @ WALL
SCALE: 1-1/2" = 1'-0"



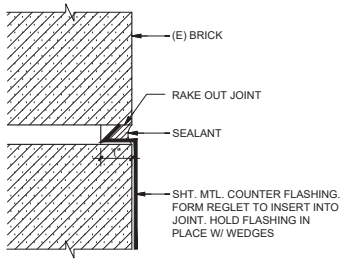
1 COMP SHINGLES @ WALL
SCALE: 1-1/2" = 1'-0"



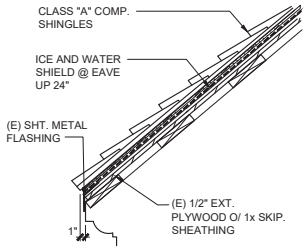
18 CEDAR SHINGLES @ EAVE
SCALE: 1-1/2" = 1'-0"
CLASS "A" ASSEMBLY



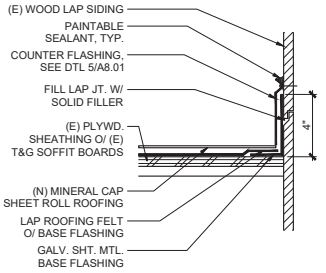
14 FLAT ROOFING EDGE
SCALE: 1-1/2" = 1'-0"



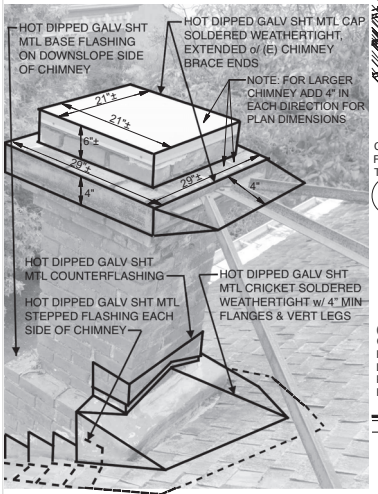
10 FLASHING @ BRICK JOINT
SCALE: 6" = 1'-0"



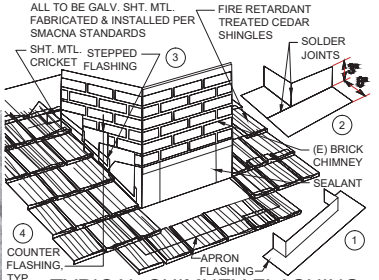
6 COMP SHINGLES @ EAVE
SCALE: 1-1/2" = 1'-0"



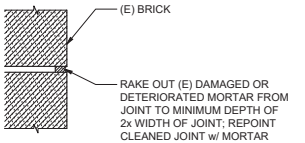
2 BASE & COUNTER FLASHING
SCALE: 3" = 1'-0"



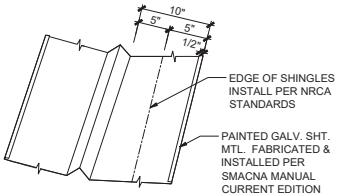
20 ROOF CHIMNEY CRICKET DET.
SCALE: N.T.S.
(APPROX. DIM. OF CAP)



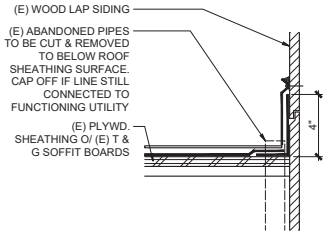
15 TYPICAL CHIMNEY FLASHING
SCALE: 1-1/2" = 1'-0"
(INSTALL SEQUENCE #)



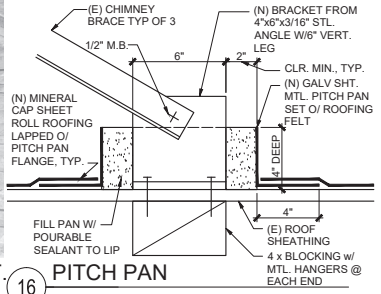
11 REPOINTING DETAIL
SCALE: 3" = 1'-0"



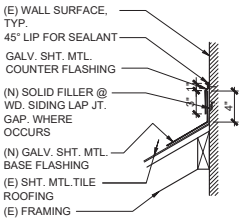
7 ROOF VALLEY FLASHING
SCALE: 1-1/2" = 1'-0"



3 ROOF @ ABANDONED PIPES
SCALE: 3" = 1'-0"
SEE DTL 2 FOR SIM. NOTES



16 PITCH PAN
SCALE: 3" = 1'-0"



8 COUNTER FLASHING
SCALE: 1-1/2" = 1'-0"

CITY OF SAN LUIS OBISPO

Jack House Roof, Widows Walk Repair, and Arbor Replacement

PROJECT TITLE:

DETAILS

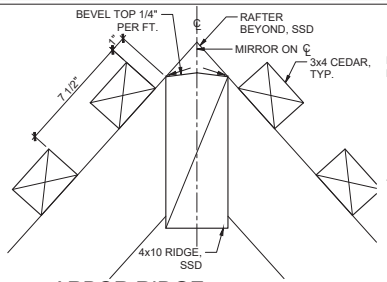
SHEET TITLE:

A8.01

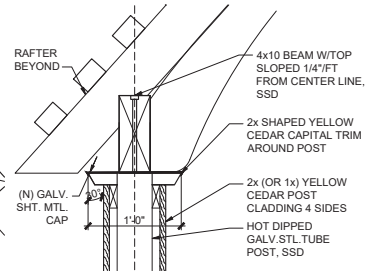
LICENSED ARCHITECT
No. C-14823
REN. 1/31/25
STATE OF CALIFORNIA

DESIGNED BY:	MG
DRAWN BY:	HA
CHECKED BY:	AW
APPROVED BY:	
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	8 of 13

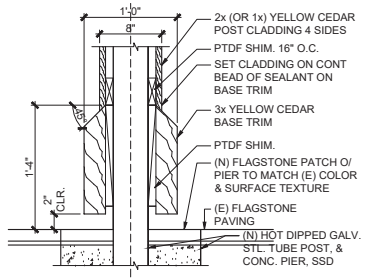
000--Architecture--NAS/2023022 -- Jack House Repairs, SLO/Plot File/Plot Files/Jack House--A801 Typ Details--240904.dwg



5 ARBOR RIDGE
SCALE: 3" = 1'-0"



1 ARBOR POST & BEAM
SCALE: 1-1/2" = 1'-0"



2 ARBOR POST BASE TRIM
SCALE: 1-1/2" = 1'-0"

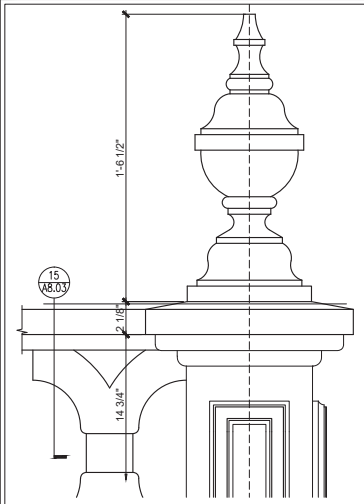
PROJECT TITLE: Jack House Roof, Widows Walk Repair, and Arbor Replacement

SHEET TITLE: A8.02 DETAILS

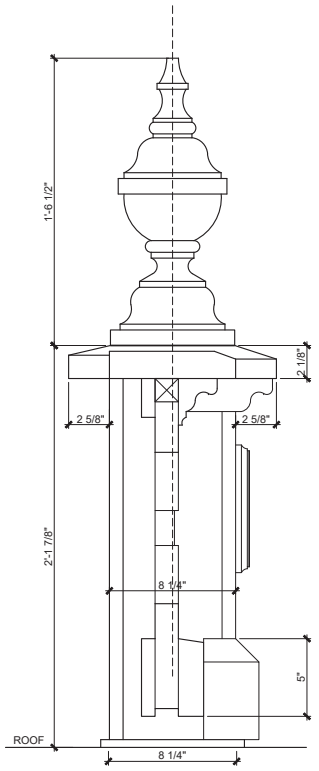
LICENSED ARCHITECT MICHAEL ALAN BARTAMAGUA No. C-14833 REN. 1/31/25 STATE OF CALIFORNIA

DESIGNED BY: MG
DRAWN BY: HA
CHECKED BY: AW
APPROVED BY:
SCALE: AS NOTED
DATE: 12 JULY 2024
CITY SPECIFICATION NO. 2000075-13
PLAN FILE NO. / LOCATION
SHEET NO. 9 of 13

000-Architecture-NAS/2023022 - Jack House Repairs, SLO/Flat File/Plot Files/Jack House-A802 Typ Details-240904.dwg



18 WIDOW'S WALK CORNER POST
SCALE: 3" = 1'-0" SEE 8/A8.03 FOR RAIL ELEVATION



15 WIDOW'S WALK RAILING
SCALE: 3" = 1'-0"

DETAIL NOTES ON SCOPE AND MATERIAL FOR WOOD RAILING

ALL DIMENSIONS PROVIDED ARE FOR GENERAL REFERENCE ONLY. REPLACE ELEMENTS FROM EXISTING ORIGINAL ASSEMBLY WHERE REQUIRED BY REHABILITATION.

THE INTENT IS TO RE-ASSEMBLE THE EXISTING RAILINGS AFTER ALL OF THE PAINT HAS BEEN STRIPPED OFF. THIS REQUIRES THAT EACH RAILING ASSEMBLY BE CAREFULLY DIS-ASSEMBLED, BOTH FOR EASE OF STRIPPING OFF THE EXISTING PAINT, AND DETERMINATION OF QUANTITY OF DETERIORATED MATERIAL THAT WILL NEED TO BE PATCHED OR REPLACED. BECAUSE THE BUILDING IS A HISTORIC RESOURCE, REPAIR BEFORE REPLACEMENT IS THE PROTOCOL.

PATCHING WITH EPOXY WOOD FILLER SHOULD BE LIMITED TO SMALL QUANTITIES - APPROXIMATELY 1 CUBIC INCH OR SMALLER IN VOLUME - AND SHOULD BE KEYED OR PINNED IN PLACE. FOLLOW MANUFACTURER MINIMUM EDGE THICKNESS REQUIREMENTS. LARGER WOOD REPLACEMENT CAN UTILIZE THE DUTCHMAN METHOD OF CUTTING OUT A SQUARED OFF AREA OF ROT AND INSERTING A SCRIBED PIECE OF NEW WOOD IN THE VOID. FOR ELEMENTS SUCH AS RAIL CAP ENDS, A WHOLE NEW SECTION OF WOOD MATCHING EXISTING LENGTH AND PROFILE CAN REPLACE THE SECTION OF REMOVED ROTTED PORTION UTILIZING DUTCHMAN REPAIR. ALL PATCHES OR REPLACEMENT SHALL BE SHAPED TO MATCH AND ALIGN WITH THE ADJACENT EXISTING SURFACE. SEE DTL17/A8.03

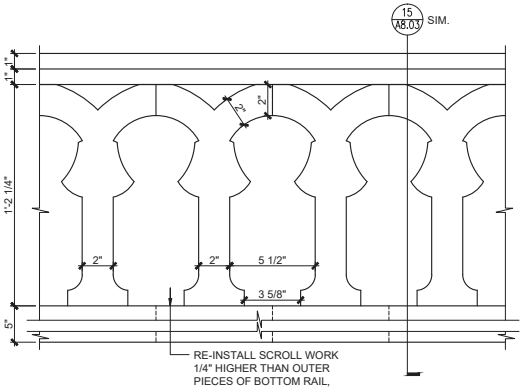
AT THE HIDDENPORTIONS OF THE SCROLLWORK OF THE RAILING, SOME OF THE "EARS" (DIRECTLY BELOW THE OPENINGS) MAY BE ROTTED OR MISSING. ALL ROTTED MATERIAL IS TO BE REMOVED FROM THESE AREAS BUT THESE SECTIONS DO NOT NEED TO BE REPLACED. BECAUSE OF THE ORIGINAL DESIGN THESE HIDDEN SECTIONS AT THE OPENINGS ARE PRONE TO COLLECT WATER (WITH END GRAIN) SO ALLOWING DRAINAGE AND AIRFLOW WOULD BE BENEFICIAL.

REPLACEMENT WOOD SHOULD BE TIGHT GRAIN REDWOOD (NO SAPWOOD) OR YELLOW CEDAR. NO PRESSURE TREATED WOOD IS TO BE LEFT VISIBLE, EVEN IF PAINTED.

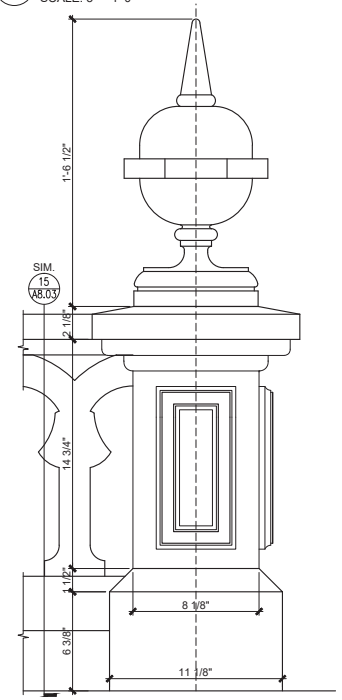
FOR CRACKED/SPLIT SCROLLWORK: NON-ROTTED DAMAGED PIECES SHALL BE GLUED AND PINNED TO CLOSE GAP PRIOR TO RE-INSTALLATION.

QUANTITY ASSUMPTIONS REGARDING REPAIR & REPLACEMENT
(FOR BIDDING REFERENCE)

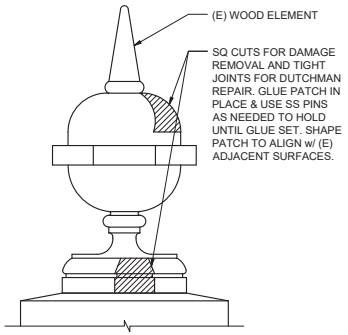
ELEMENT	% REPAIR	% REPLACE
POST	40%	15%
FINIALS	15%	8%
TOP RAIL	40%	15%
BOTTOM RAIL	50%	20%
SCROLLWORK	40%	20%



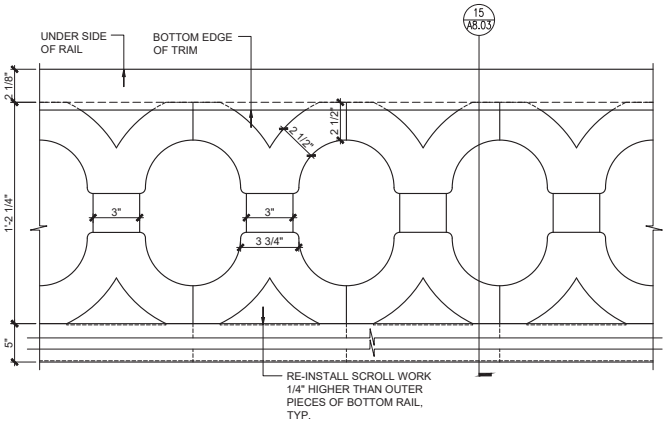
6 FRONT PORCH ROOF RAILING EXTERIOR FACING VIEW
SCALE: 3" = 1'-0"



20 PORCH ROOF RAIL POST
SCALE: 3" = 1'-0" SEE 6/A8.03 FOR RAIL ELEVATION



17 DUTCHMAN PATCH, TYP.
SCALE: 3" = 1'-0"



8 WIDOW'S WALK RAILING EXTERIOR FACING VIEW
SCALE: 6" = 1'-0"

CITY OF SAN LUIS OBISPO

PROJECT TITLE:
Jack House Roof, Widows Walk Repair, and Arbor Replacement

SHEET TITLE:
A8.03 EXISTING WOOD RAILINGS

LICENSED ARCHITECT
MICHAEL A. WILLIAMS
No. C-14833
REN. 1/31/25
STATE OF CALIFORNIA

DESIGNED BY:	MG
DRAWN BY:	HA
CHECKED BY:	AW
APPROVED BY:	
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	10 of 13

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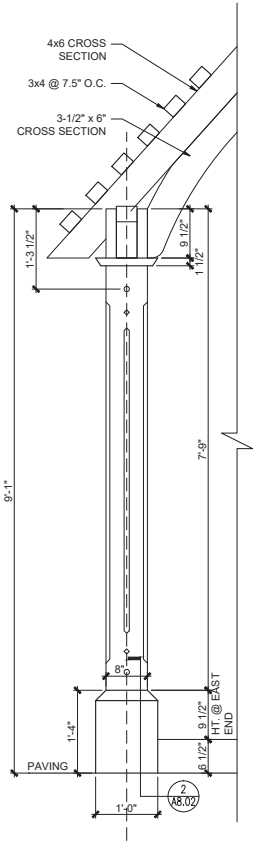
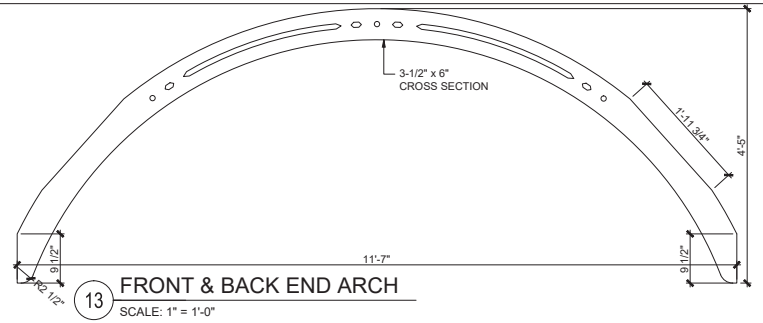
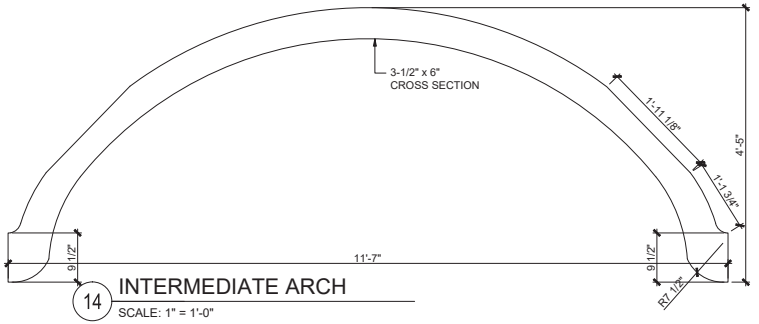


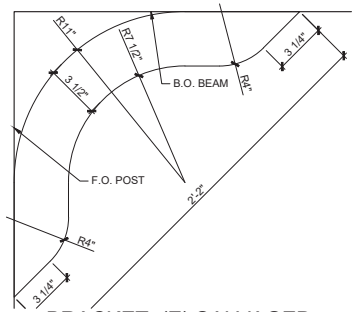
19 POST
SCALE: 1" = 1'-0"



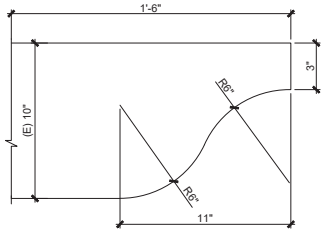
13 FRONT & BACK END ARCH
SCALE: 1" = 1'-0"



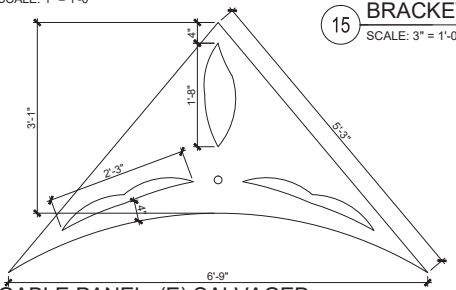
14 INTERMEDIATE ARCH
SCALE: 1" = 1'-0"



15 BRACKET, (E) SALVAGED
SCALE: 3" = 1'-0"



11 BEAM END, (E) SALVAGED
SCALE: 3" = 1'-0"



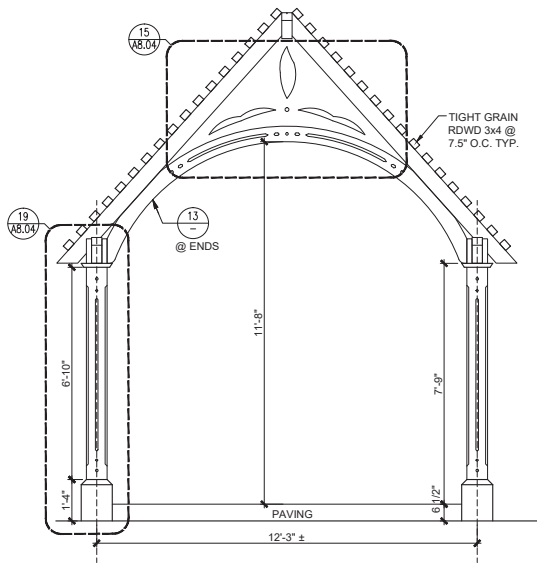
20 GABLE PANEL, (E) SALVAGED
SCALE: 1" = 1'-0"

DETAIL NOTES ON SCOPE AND MATERIAL FOR THE ARBOR

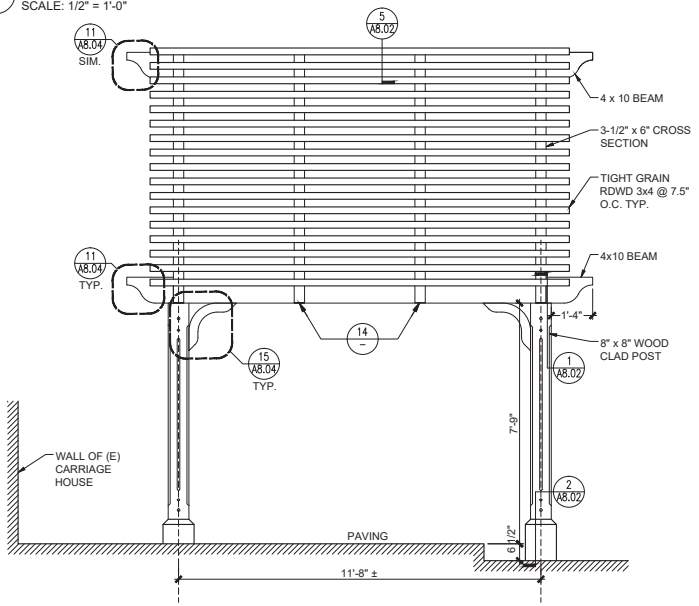
THE INTENT IS TO RE-CONSTRUCT THE ORIGINAL ARBOR BASED ON THE EXISTING SALVAGED ELEMENTS LOCATED IN THE CITY CORP YARD. THE EXISTING ELEMENTS ARE TO BE USED AS TEMPLATES FOR THE NEW ELEMENTS NEEDED. THE SHAPE, PROFILE, AND DETAILING (INCLUDING ROUTED SHAPES) ARE TO MATCH THE SALVAGED ELEMENTS. THE DIMENSIONS PROVIDED FOR EACH SHAPE ON THIS DRAWING ARE FOR REFERENCE ONLY AND MUST BE FIELD VERIFIED BY CONTRACTOR TO CREATE TEMPLATES. SHOP DRAWINGS MUST BE PREPARED WITH THE FINAL DIMENSIONS FOR REVIEW.

ALL WOOD SHALL BE TIGHT GRAIN REDWOOD (NO SAPWOOD), OR YELLOW CEDAR. NO PRESSURE TREATED WOOD IS TO BE LEFT VISIBLE, EVEN IF PAINTED.

ALL WOOD ELEMENTS SHALL BE PRIMED ON ALL FACES BEFORE ASSEMBLY. ALL CUTS ARE TO BE PRIMED BEFORE ASSEMBLY.ALL BOLT AND SCREW FASTENER HOLES SHALL BE PLUGGED WITH WOOD PLUGS.



6 WEST ELEVATION
SCALE: 1/2" = 1'-0"



8 NORTH ELEVATION
SCALE: 1/2" = 1'-0"

CITY OF SAN LUIS OBISPO

Jack House Roof, Widows Walk Repair, and Arbor Replacement

PROJECT TITLE:

A8.04 ARBOR (PLAN, ELEV & DETAILS)

SHEET TITLE

LICENSED ARCHITECT
MICHAEL ALAN ANDRADE
No. C-14833
REN 1/31/25
STATE OF CALIFORNIA

DESIGNED BY:	MG
DRAWN BY:	HA
CHECKED BY:	AW
APPROVED BY:	
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	11 of 13

000--Architecture-NAS/2023022 -- Jack House Repairs, SLO/Flat File/Plot Files/Jack House--A804 Typ Details--240904.dwg

STRUCTURAL SPECIFICATIONS

FRAMING

ALASKA YELLOW CEDAR COAST REGION, CONFORMING TO WEST COAST LUMBER INSPECTION BUREAU STANDARD GRADING AND DRESSING RULE NO. 17 AS AMENDED TO DATE.

1. 2x, 3x, PLATES, JOISTS, AND PURLINS NO.2 (800F–b)
2. 4x, PURLINS, LEDGERS, AND BEAMS, NO.1 (800F–b)
3. 2x4, 3x4, STUDS BLOCKING, CONSTRUCTION GRADE, (800F–b)
4. 2x6 OR LARGER STUDS AND BLOCKING NO.1 (800F–b)

ALL FRAMING LUMBER 6" OR LARGER IN THE LEAST DIMENSION SHALL BE F.O.H.C.

SHEATHING

SHALL BE MINIMUM ¾"–4 PLY MARINE GRADE PLYWOOD TYPE RATED STURD–1–FLOOR, PREMIUM "B" GRADE VENEER WITH EXTERIOR WATERPROOF GLUE (EXPOSURE 1), SPAN RATING 24" O.C., SPECIES GROUP 2 OR BETTER.

CONCRETE

ALL CONCRETE SHALL HAVE PROPERTIES AS LISTED BELOW.
MAXIMUM WATER–CEMENT RATIO, BY WEIGHT SHALL BE AS FOLLOWS:

	W/O FLY ASH	W/ UP TO 15% FLY ASH
5000 PSI CONCRETE AT 28 DAYS	.48	0.43
4000 PSI CONCRETE AT 28 DAYS	.55	0.5
3500 PSI CONCRETE AT 28 DAYS	.55	0.5
3000 PSI CONCRETE AT 28 DAYS	.55	0.5
2500 PSI CONCRETE AT 28 DAYS	.55	0.5
2000 PSI CONCRETE AT 28 DAYS	.67	0.60

APPROXIMATELY 3 OUNCES PER SACK OF CEMENT OF POZZOLITH 300R OR APPROVED EQUAL SHALL BE USED AS A WATER DISPERSING ADDITIVE. AT CONTRACTOR'S OPTION, AN AIR ENTRAINING AGENT CONFORMING TO THE LATEST REVISION OF ASTM SPECIFICATION C 260 MAY BE ADDED TO THE CONCRETE TO PROVIDE SPECIFIED AMOUNTS OF ENTRAINED AIR.

CONCRETE ELEMENT	MIN. 28 DAY COMPRESSIVE STRENGTH	MAX. SIZE AGGREGATE (INCHES)	MAX. SLUMP	TOTAL AIR CONTENT
DRILLED PIER	*3000	3/4	4	--%
SLAB ON GRADE	*3000	3/4	4	4%±1.5%
YARD CONCRETE, WALKS, AND CURBS	2500	3/4	4	--

*2500 PSI USED FOR DESIGN, NO SPECIAL INSPECTION REQUIRED

REINFORCING STEEL

BARS FOR REINFORCING SHALL BE GRADE 60 DEFORMED BARS CONFORMING TO ASTM A–615 INCLUDING SUPPLEMENT S1. LAP SPLICES SHALL BE IN ACCORDANCE WITH ACI 318 UNLESS NOTED OTHERWISE ON THE PLANS.

STRUCTURAL STEEL AND MISCELLANEOUS IRON

ALL STRUCTURAL STEEL AND MISCELLANEOUS IRON SHALL RECEIVE SHOP PRIME COAT.
INDIVIDUAL SPECIFICATIONS ARE AS FOLLOWS.

1.) HOLLOW STRUCTURAL STEEL AND TUBE STEEL – ASTM A500, GRADE B, Fy = 46ksi
2.) MISCELLANEOUS IRON – ASTM A36M Fy = 36ksi

MACHINE BOLTS, ANCHOR BOLTS AND STUDS

ASTM A307

THREADED RODS

ASTM F1554 GRADE A36

SHOP DRAWINGS

FOR THE ENGINEERS REVIEW WILL BE REQUIRED AS FOLLOWS:

1. MIX DESIGNS;
2. STRUCTURAL STEEL AND MISCELLANEOUS METALS;

CONTRACTOR SHALL SUBMIT THREE SETS OF PRINTS FOR REVIEW. FABRICATION SHALL NOT PROCEED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ENGINEER.

WELDING

ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS PER AWS "STANDARD QUALIFICATION PROCEDURE" TO PERFORM THE TYPE OF WORK REQUIRED. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS WELDING CODE. ARC WELDING ELECTRODES SHALL BE E70 SERIES. WELDING SHALL BE INSPECTED AS REQUIRED BY THE CALIFORNIA BUILDING CODE.

CONSTRUCTION LIABILITY

CONSTRUCTION CONTRACTOR AND HIS SUBCONTRACTORS AGREE THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR AND HIS SUBCONTRACTORS WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR AND HIS SUBCONTRACTORS FURTHER AGREE TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.

EXISTING CONDITIONS

THE CONTRACTOR OR SUBCONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION AND OR ORDERING MATERIAL, ANY DISCREPANCIES DISCOVERED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

SPECIAL INSPECTIONS

THE OWNER SHALL EMPLOY A SPECIAL INSPECTOR DURING CONSTRUCTION ON THE FOLLOWING TYPES OF WORK:

WELDING

– ALL STRUCTURAL WELDING, INCLUDING WELDING OF REINFORCING STEEL.

EXCEPTIONS:

1. WELDING DONE IN A FABRICATOR'S SHOP, APPROVED BY THE CITY BUILDING OFFICIAL.
2. SINGLE PASS FILLET WELDS MAY HAVE PERIODIC INSPECTION PER C.B.C. NOTED OTHERWISE UNLESS ON THE CONTRACT DRAWINGS.

SPECIAL INSPECTOR

– THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE HIS COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF A PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR

– THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPLICABLE DESIGN DRAWINGS AND SPECIFICATIONS.

– THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR ARCHITECT OF RECORD, AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.

– THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF HIS KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISION OF THIS CODE.

DESIGN CRITERIA: 2022 C.B.C.

SITE LOCATION:
LATITUDE: 35.276977
LONGITUDE: –120.666284

SEISMIC DESIGN CATEGORY: D

SEISMIC FORCE–RESISTANCE SYSTEM:
– INVERTED PENDULUM TYPE STRUCTURE

SEISMIC DESIGN ANALYSIS PROCEDURE:
EQUIVALENT LATERAL FORCE PROCEDURE

EARTHQUAKE DESIGN DATA:
RISK CATEGORY = II

I_e	= 1.0
S_s	= 1.056g
S_1	= 0.389g
SITE CLASS	= D
F_a	= 1.2
F_v	= 1.7
S_{MS}	= 1.267g
S_{M1}	= 1.020g
S_{DS}	= 0.845g
S_{D1}	= 0.680g
R_{wh}	= 2.0
R_{ow}	= 2.0
V_{wh}	= 0.384W (ASD)
V_{ow}	= 0.384W (ASD)

NEW ROOF LOADS:

	DEAD	LIVE
TYPICAL ROOF	10.0 PSF	20.0 PSF

ALLOWABLE SKIN FRICTION PER CBC TABLE 1806.2

150 PSF (1500 PSF * 1%)	DEAD + LIVE
200 PSF (150 PSF * 1.33)	DEAD + LIVE + SEISMIC

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SHEET	CONTENT
S0.0	STRUCTURAL SPECIFICATIONS ABBREVIATIONS LEGEND SYMBOLS LEGEND TABLE OF CONTENTS
S1.0	TRELLIS ROOF FRAMING PLAN TRELLIS ELEVATIONS TRELLIS DETAILS

SYMBOLS LEGEND

SYMBOL DESCRIPTION

- 1 / S2.1 — Detail No. / Sheet Location
- 1 / S0.1 — View Direction; Section/Elevation No. / Sheet Location
- 1/4" SLOPE — Indicates Degree of Slope; Indicates Sloped Beam, Slab, or Deck. Arrowhead Indicates direction.
- 6'–0"± — Indicates estimated dimension. For Exact Dimension see Architect
- 1/4 TYP. — Indicates Field Weld, Shop Weld when not shown.; Weld Notes; Weld Type; Weld Size; Weld all sides
- Refer to AISC, Latest Edition, for All Weld Types & Symbols
- 1 — Revision Number
- Affected Region due to Current Revision.

ABBREVIATIONS

&	And
A.B.	Anchor bolt
ABV.	Above
@	At
ALUM.	Aluminum
ARCH.	Architect or Architectual
BLK.	Block
BLKG.	Blocking
BLW.	Below
BM	Boundary Nailing per Schedule/Plan
BTWN.	Between
C	Channel
CANTL.	Cantilevered
CL or ℄	Centerline
C.J.	Construction Joint or Cold Joint
C.J.P.	Complete Joint Penetration
CLR	Clear
COL.	Column
COLL.	Collector
CONC.	Concrete
CONN.	Connection
CONT.	Continuous
CMU	Concrete Masonry Unit
DBL.	Double
DF	Douglas Flr
DIA. or ⌀	Diameter
DWG.	Drawing(s)
(E)	Existing
EA.	Each
EF	Edge Fastening
ELEV.	Elevation
EMBED.	Embedment
EN	Edge Nail per Shearwall Schedule
EQ.	Equal
EXT.	Exterior
E.W.	Each Way
FDN.	Foundation
F.F.	Finish Floor
FLR.	Floor
FN	Field Nailing per Schedule
F.O.H.C.	Free of Heart Center
F.P.	Full Penetration
FRMG.	Framing
FTG.	Footing
ga.	Gage (Gauge)
GALV.	Galvanized
G.I.	Galvanized Iron
GLB	Glulam Beam
HD	Holdown
HDR	Header
HGR	Hanger
HORIZ.	Horizontal
H.S.B.	High Strength Bolt(s)
H.S.S.	Hollow Structural Section
HT	Height
INT.	Interior
I.M.R.F.	Intermediate Moment Resisting Frames
LBS. or #	Pounds
LSL	Laminated Strand Lumber
LVL	Laminated Veneer Lumber
LT.	Light
(L.L.H.)	Long Leg Horizontal
(L.L.V.)	Long Leg Vertical
MAX.	Maximum
M.B.	Machine Bolt(s)
MC	Miscellaneous Channel
MECH.	Mechanical
MFR.	Manufacturer
MIN.	Minimum
(N)	New
N.T.S.	Not To Scale
o/	Over
O.C.	On Center
O.M.R.F.	Ordinary Moment Resisting Frame
O.F.	Outside Face
O.H.	Opposite Hand
OSB	Oriented Strand Board
PL. or ℄	Plate
PLYWD.	Plywood
P.J.P.	Partial Joint Penetration
P.P.	Partial Penetration
PSL	Parallel Strand Lumber
PTDF	Pressure Treated Douglas Flr
REINF.	Reinforcing or Reinforcement
REQ.	Require or Required
RDWD.	Redwood
S.A.D.	See Architectural Drawings
SECT.	Section
SHT.	Sheet
SIM.	Similar
SN	Sill Nail
SMRF	Special Moment Resisting Frame
SPECS.	Specifications
SQ. or ⌗	Square
S.S.	Stainless Steel
SP	Standard Pipe
XSP	Extra Strong Pipe
XXSP	Double Extra Strong Pipe
STAGG	Staggered
STD.	Standard
STIFF.	Stiffener
STL.	Steel
T&B	Top and Bottom
T.&G.	Tongue and Groove
TN	Toe Nail
T.O.C.	Top of Concrete or Top of Curb
T.O.P.	Top of Plywood
T.O.S.	Top of Steel
TS	Tube Steel
TYP.	Typical
U.N.O.	Unless Noted Otherwise
VERT.	Vertical
V.I.F. or ±	Verify In Field
w/	With
w/o	Without
W.P.	Work Point
WT.	Weight

CITY OF SAN LUIS OBISPO

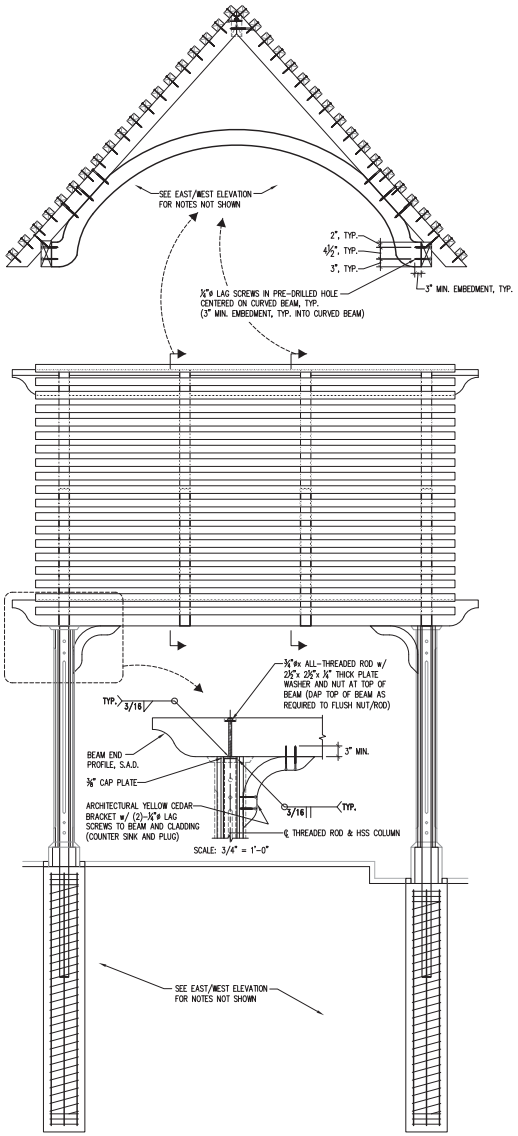
PROJECT TITLE: Jack House Roof, Widows Walk Repair, and Arbor Replacement

SHEET TITLE: STRUCTURAL SPECIFICATIONS

S0.0

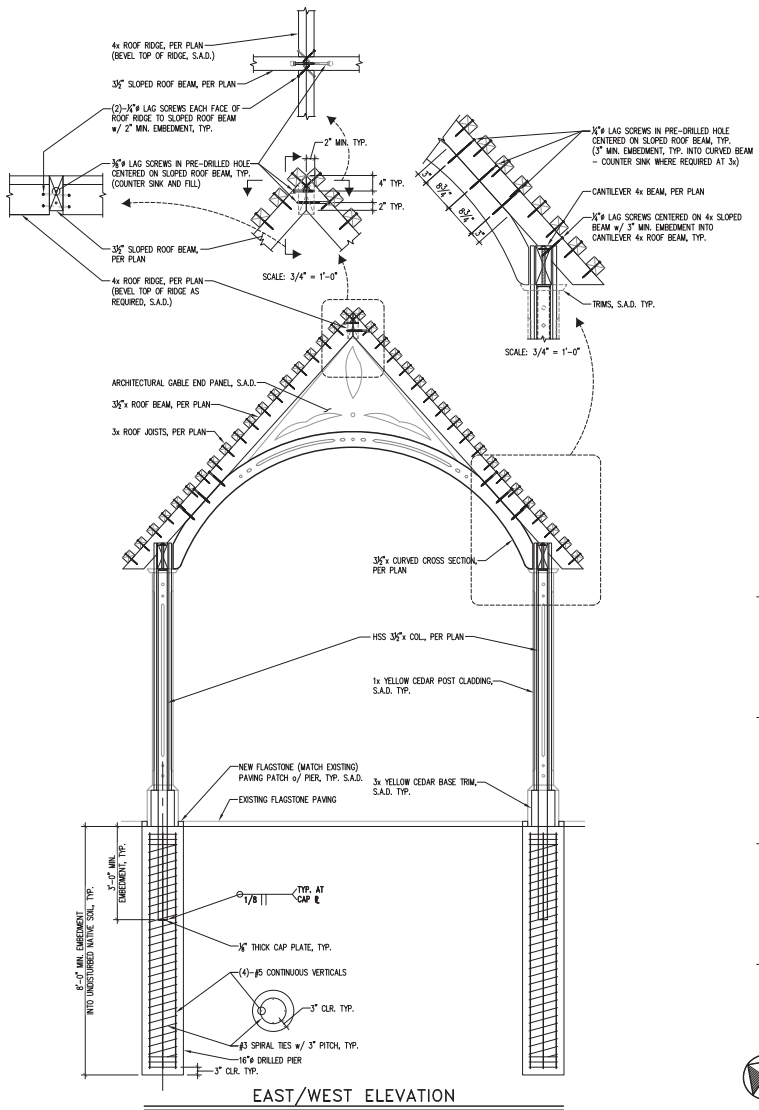
REGISTERED PROFESSIONAL ENGINEER
STEVEN P. DUQUETTE
S 3019
EXP. 3-31-2025
CIVIL & STRUCTURAL
STATE OF CALIFORNIA

DESIGNED BY:	TD
DRAWN BY:	JGL
CHECKED BY:	SPD
APPROVED BY:	--
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	12 of 13



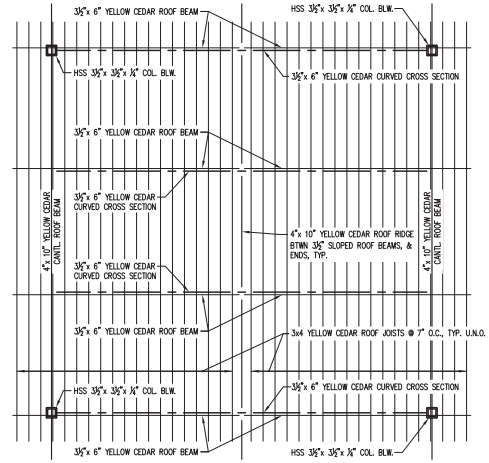
NORTH/SOUTH ELEVATION

SCALE: 1/2" = 1'-0"



EAST/WEST ELEVATION

SCALE: 1/2" = 1'-0"



ROOF FRAMING PLAN

SCALE: 1/2" = 1'-0"

CITY OF SAN LUIS OBISPO

PROJECT TITLE: Jack House Roof, Widows Walk Repair, and Arbor Replacement

SHEET TITLE: TRELLIS PLAN, ELEVATIONS, DETAILS

SHEET NO.: S1.0

REGISTERED PROFESSIONAL ENGINEER STEVEN P. DUQUETTE S 3019 EXP. 3-31-2025 CIVIL & STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	TD
DRAWN BY:	JGL
CHECKED BY:	SPD
APPROVED BY:	–
SCALE:	AS NOTED
DATE:	12 JULY 2024
CITY SPECIFICATION NO.	2000075-13
PLAN FILE NO. / LOCATION	
SHEET NO.	13 of 13

SPECIAL PROVISIONS

FOR

CITY OF SAN LUIS OBISPO

Jack House Roof, Widows Walk Repair, and Arbor Replacement

Specification No. 2000075-13.01

NOVEMBER 2024

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

919 Palm Street
San Luis Obispo, CA 93401
(805) 781-7200

Jack House Roof, Widows Walk Repair, and Arbor Replacement

Specification No. 2000075-13.01

Approval Date: November 12, 2024

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NOTICE TO BIDDERS
BID SUBMISSION

Sealed bids will be received by the City of San Luis Obispo at the Public Works Administration Office located at 919 Palm Street, San Luis Obispo, California 93401, until

11:00 a.m. on December 19, 2024

at which time they will be publicly opened and read aloud. Public bid opening may be accessed via Microsoft Teams video conference and conference call. In person attendance will be permitted. Use the following link:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_MjM1OGQzNDctNTMyNi00MGQ4LWI5NGItNTdlOWM5MTQyZThk%40thread.v2/0?context=%7b%22Tid%22%3a%22a78b182d-94e4-4507-a9a9-330dcb148164%22%2c%22Oid%22%3a%2255684c81-fa0a-443f-b6a5-1f55eacc1141%22%7d

or join by phone with this number: (209)645-4165 with Conference ID: 426 108 739#

Submit bid in a sealed envelope plainly marked:

JACK HOUSE ROOF, WIDOWS WALK REPAIR, AND ARBOR REPLACEMENT
SPECIFICATION NO. 2000075-13.01

Any bid received after the time and date specified will not be considered and will be returned to the bidder unopened. Bids received by Fax or Email will not be considered.

By submission of bid you agree to comply with all instruction and requirements in this notice and the contract documents.

All bids must be submitted on the Bid Item List form(s) provided and submitted with all other Bid Forms included in these Special Provisions.

Each bid must be accompanied by either a:

1. certified check
2. cashier's check
3. bidder's bond

made payable to the City of San Luis Obispo for an amount equal to ten percent of the bid amount as a guaranty. Guaranty will be forfeited to the City San Luis Obispo if the bidder, to whom the contract is awarded, fails to enter into the contract.

The City of San Luis Obispo reserves the right to accept or reject any or all bids or waive any informality in a bid.

All bids are to be compared based on the City Engineer's estimate of the quantities of work to be done, as shown on the Bid Item List.

Bids will only be accepted from bidders that are licensed in compliance with the provisions of Chapter 9, Division III of Business and Professions Code.

The award of the contract, if awarded, will be to the lowest responsive bid submitted by a responsible contractor whose bid complies with the requirements prescribed. If the contract is awarded, the contract will be awarded within 60 calendar days after the opening of the bids.

Failure to raise defects in the notice to bidders or bid forms prior to bid opening constitute a waiver of those defects.

BID DOCUMENTS

A copy of the plans and special provisions may be downloaded, free of charge, from the City's website at:

www.slocity.org/government/department-directory/public-works/public-works-bids-proposals

No printed copies are available for purchase at the City office.

Standard Specifications and Engineering Standards referenced in the Special Provisions may be downloaded, free of charge, from the City's website at:

www.slocity.org/government/department-directory/public-works/documents-online/construction-documents

You are responsible to obtain all issued addenda prior to bid opening. Addenda will be available to download at the City's website listed above or at the office of the City Engineer.

Contact the project manager, Sandra Golonka at (805) 781-7239 or the Public Works Department at (805) 781-7200 prior to bid opening to verify the number of addenda issued.

You are responsible to verify your contact information is correct on the plan holders list located on the City's website at:

www.slocity.org/government/department-directory/public-works/public-works-bids-proposals.

PROJECT INFORMATION

In general, the project consists of removing and replacing the existing roof and arbor at the Jack House & Gardens. Repair and replacement as needed of the railing surrounding the Widow's Walk and Porch roof.

The project estimated construction cost and contract time established for the project is as follows:

BASE BID:	$282,000	65 working days
ADDITIVE ALTERNATIVE “A”	$115,000	20 working days

TOTAL PROJECT BID (BASE BID + ADD ALT. “A”): $397,000

Base bid contract tie is established as 65 working days. Award of Additive Alternate “A” will add 20 working days to the contract length.

The fixed liquidated damages amount is established at $500 per day for failure to complete the work within the contract time.

In compliance with section 1773 of the Labor Code, the State of California Department of Industrial Relations has established prevailing hourly wage rates for each type of workman. Current wage rates may be obtained from the Division of Labor at:

https://www.dir.ca.gov/oprl/DPreWageDetermination.htm

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

There will be a MANDATORY walkthrough on December 4, 2024 at 10:00 a.m. Prime contractors wishing to submit a bid proposal are required to attend and sign in at the meeting. Bidders must meet in front of the Jack House & Gardens (536 Marsh Street, San Luis Obispo) followed by a second walkthrough at the San Luis Obispo Corp Yard (25 Prado Road, San Luis Obispo).

QUALIFICATIONS

You must possess a valid Class B Contractor's License at the time of the bid opening.

You and any subcontractors required to pay prevailing wage must be registered with the Department of Industrial Relations pursuant to Section 1725.5 of the Labor Code.

You as the prime contractor or qualified subcontractor utilized by you must have experience constructing projects similar to the work specified for this project. Provide three similar reference projects completed by you or your qualified subcontractor as either the prime or subcontractor. All referenced projects must have been completed within the last five years from this project’s bid opening date.

One of the three reference projects must have been completed under contract with a city, county, state or federal government agency as the prime contractor.

One of the three referenced projects must include woodwork repairs on historical buildings completed by either you as the prime contractor or a qualified subcontractor used for this project.

One of the three referenced projects must include removal of lead-based paint completed by either you as the prime contractor or a qualified subcontractor used for this project.

Failure to provide reference projects as specified in this section and as required on the qualification form is cause to reject a bid as being non-responsive.

The City reserves the right to reject any bid based on non-responsiveness if a bidder fails to provide a bid that complies with all bidding instructions.

The City reserves the right to reject a responsive bid based on the non-responsibility of the bidder if the Director of Public Works or Designee finds, after providing notice and a hearing to the bidder, that the bidder lacks the

1. knowledge
2. experience,
3. or is otherwise not responsible

as defined in Section 3.24 of the San Luis Obispo Municipal Code to complete the project in the best interest of the City.

Rejected bidders may appeal this determination. Appeal must comply with the requirements in this Notice to Bidders.

It is the City of San Luis Obispo's intent to award the contract to the lowest responsive bid submitted by a responsible bidder. If in the bidder's opinion the contract has been or may be improperly awarded, the bidder may protest the contract award.

Protests must be filed no later than five working days after either:

1. bid opening date
2. notification of rejected bid.

Protest must be in writing and received by the project manager located at:

919 Palm Street
San Luis Obispo, CA 93401.

Valid protests must contain the following information:

1. the reasons for the protest
2. any supporting documentation
3. the ruling expected by the City to remedy the protest.

Any protest not containing all required information will be deemed invalid and rejected.

The City will consider additional documentation or other supporting information regarding the protest if submitted in compliance to the specified time limits. Anything submitted after the specified time limit will be rejected and not be considered.

The Director of Public Works or Designee may request additional information to be submitted within three days of the request, unless otherwise specified, and will notify the protester of ruling within ten days of determination.

If the protester is not satisfied with ruling, the protester may appeal the ruling to the City Council in compliance with Chapter 1.20 of the City of San Luis Obispo Municipal Code.

Pursuant to the Public Records Act (Government Code, § 6250, et seq.), the City will make public records available upon request.

AWARD

The lowest bidder will be determined in compliance with Public Contract Code Section 20103.8(c) with the Publicly Disclosed Funding Amount of $397,000 using either:

- TOTAL PROJECT BID, if bid for Base Bid + Add. Alt. “A” is less than $397,000 or
- BASE BID, if Base Bid is less than $397,000 and Base Bid + Add. Alt. “A” is greater than $397,000.

As a condition to executing a contract with the City, two bonds each equal to one hundred percent of the total contract price are required in compliance with Section 3-1.05 of the Standard Specifications.

You may substitute securities for moneys withheld under the contract in compliance with the provisions of the Public Contract Code, Section 10263.

ACCOMMODATION

If any accommodations are needed to participate in the bid process, please contact Allie Genard at (805) 781-7200 or by Telecommunications Device for the Deaf at (805) 781-7107. Requests should be made as early as possible in the bidding process to allow time for accommodation.

BID FORMS

All bid forms must be completed and submitted with your bid. Failure to submit these forms and required bid bond is cause to reject the bid as nonresponsive. Staple all bid forms together.

THE UNDERSIGNED, agrees that they have carefully examined:

1. the location of the proposed work
2. the plans and specifications
3. read the accompanying instructions to bidders

and propose to furnish all:

4. materials
5. labor

to complete all the required work satisfactorily in compliance with

6. plans
7. specifications
8. special provisions

for the prices set forth in the bid item list:

BID ITEM LIST FOR JACK HOUSE ROOF, WIDOWS WALK REPAIR, AND ARBOR REPLACEMENT PROJECT, SPECIFICATION NO. 2000075-13.01

Item No.	$SS_{(1)}$	Item Description	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
1	15	Removal of Existing East and West Bay Windows Roofs [Sheet A2.01 (typ of 3)]	LS	1	---	
2	99	Install East and West Bay Window Roofs [Sheet A2.01 (typ of 3)]	SQFT	152		
3	99	Clean and Repair Front Porch Metal Tile Roof (Sheet A2.01)	SQFT	245		
4* (S)	99	Remove Lead Based Paint	LS	1	---	
5* (S)	99	Repair Existing Front Porch and Widows Walk Roof Railing including Posts & Finials	LF	34		
6* (S)	99	Remove and Replace Existing Front Porch and Widows Walk Roof Railing including Posts & Finials	LF	14		
7* (S)	99	Reinstall Roof Railing of Front Porch and Widows Walk Roof Railing including Posts & Finials	LF	83		
8	99	Paint Railings and Affected Areas including Posts & Finials	LS	1	---	
9	15	Remove Existing Rear Porch / Bath Addition Roofing and Cap Off Exposed Pipes (DTL 3/A8.01)	LS	1	---	

Item No.	SS(1)	Item Description	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
10	99	Install Rear Porch / Bath Addition Roof	SQFT	300		
11	99	Remove Existing Multi-Layered Wood Shingle Roof and Patches	LS	1	---	
12	99	Install Wood Shingle Roofing	SQFT	1,550		
13	99	Install Attic Ventilation at Shingles	LS	1	---	
14	15	Remove Existing Flashing at Chimneys	LS	1	---	
15	99	Install Flashing at Chimneys (DTL 15/A8.01)	SQFT	40		
16	15	Remove Existing Upper Cap Sheet Roof	LS	1	---	
17	99	Install Upper Cap Sheet Roof	SQFT	300		
18	99	Replace Existing Attic Vent Wire Mesh with Louvered Vents at Flat Roof	LS	1	---	
19	99	Detach Existing Chimney Braces at Cap Sheet Roof	LS	1	---	
20	99	Install Chimney Brackets and Pitch Pans at Cap Sheet Roof (DTL 16/A8.01)	LS	1	---	
21 (S)	99	Chimney Brick Repointing	LS	1	---	
22 (S)	99	Masonry Pre-Construction Test Specimens	LS	1	---	
24	15	Remove Existing Metal Chimney Caps (DTL 20/A8.01)	LS	1	---	
25	99	Install Metal Chimney Caps (DTL 20/A8.01)	SQFT	30		
26	99	Haul Off Debris	LS	1	---	
27	99	Construction Fencing	LS	1	---	
28	14	Health and Safety Plan	LS	1	---	
29	7	OSHA Compliance	LS	1		
30	99	Gutter Cleaning and Repair Gaps	LS	1	---	
31	99	Staging Area Restoration	LS	1	---	
32	99	Historical Tree and Planting Protection	LS	1	---	
Bid Alternate: A						
33 (S)	99	Arbor	LS	1	---	
34	73	Concrete and Flagstone Restoration at Arbor	SQFT	64		
				Bid Total (or Base Bid)	**$**	

Item No.	$SS_{(1)}$	Item Description	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
Company Name:						

(1) refers to section in the Standard Specifications with modifications in the Special Provisions, or the section in the Technical Specification (TS) listed in Appendix B, that describe required work.

(S) Specialty items per Section 5-1.13A SUBCONTRACTING, General of the Standard Specifications.

*Bid item is exempt from Section 9-1.06B and 9-1.06C of the Standard Specifications. The unit price will not be adjusted regardless of the final bid item quantity.

LIST OF SUBCONTRACTORS

Pursuant to Section 4100 of the Public Contracts Code and section 2-1.33C of the standard specifications, the Bidder is required to furnish the following information for each Subcontractor performing more than 1/2 percent (0.5%) of the total base bid. Do not list alternative subcontractors for the same work. Subcontracting must not total more than fifty percent (50%) of the submitted bid except as allowed in section 5-1.13 of the standard specifications.

For Streets & Highways projects, subcontractors performing less than ten thousand dollars ($10,000) worth of work need not be mentioned. **Subcontractors required to pay prevailing wage, must be registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 to be listed.**

NOTE: If there are no subcontractors, write "NONE" and submit with bid.

Name Under Which Subcontractor is Licensed	License Number	**DIR Public Works Registration Number**	Address and Phone Number of Office, Mill or Shop	Specific Description of Subcontract	% of Total Base Bid

Attach additional sheets as needed.

PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT

In compliance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder, or any subcontractor to be engaged by the bidder, **has ____, has not** ____ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

NOTE: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Bid. Signing this Bid on the signature portion constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In compliance with Public Contract Code Section 10162, the Bidder must complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

_____ Yes _____ No

If the answer is yes, attach a letter explaining the circumstances

PUBLIC CONTRACT CODE SECTION 10232 STATEMENT

In compliance with Public Contract Code Section 10232, you hereby state under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against you within the immediately preceding two-year period because of your failure to comply with an order of a federal court which orders you to comply with an order of the National Labor Relations Board.

LABOR CODE SECTION 1725.5 STATEMENTS

The bidder has delinquent liability to an employee or the state for any assessment of back wages or related damages, interest, fines, or penalties pursuant to any final judgment, order, or determination by a court or any federal, state, or local administrative agency, including a confirmed arbitration award. Any judgment, order, or determination that is under appeal is excluded, provided that the contractor has secured the payment of any amount eventually found due through a bond or other appropriate means.

_____ Yes _____ No

The bidder is currently debarred under Section 1777.1 or under any other federal or state law providing for the debarment of contractors from public works.

_____ Yes _____ No

NOTE: The above Statements and Questionnaire are part of the Bid. Signing this Bid on the signature portion constitute signature of this Statement and Questionnaire. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

NON-COLLUSION DECLARATION

I, _____, declare that

I am _____ of_____,

the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone refrained from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Executed on _____, 20_____, in _____

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____

(Signature and Title of Declarant)

(SEAL)

Subscribed and sworn to before me
this _____day of _____, 20_____

_____

Notary Public

Company Name:_____

BIDDER ACKNOWLEDGEMENTS

By signing below, the bidder acknowledges and confirms that this bid is based on the information contained in all contract documents, including the notice to bidders, plans, specifications, special provisions, and addendum number(s) _____. **(Note: You are responsible to verify the number of addenda prior to the bid opening.)**

The undersigned further agrees that in case of default in executing the required contract, with necessary bonds, within eight days, (not including Saturdays, Sundays, and legal holidays), after having received a mailed notice that the contract is ready for signature, the proceeds of the check or bond accompanying his bid will become the property of the City of San Luis Obispo.

Licensed in accordance with an act providing for the registration of contractors, License No._____, Expiration Date _____.

The above statement is made under penalty of perjury, and any bid not containing this information "will be considered non-responsive and will be rejected" by the City.

Signature of Bidder _____

_____
(Print Name and Title of Bidder)

DIR– Public Works Registration No: _____

Business Name (DBA): _____

Owner/Legal Name: _____

Indicate One: ☐Sole-proprietor ☐ Partnership ☐Corporation

List Partners/Corporate Officers: _____
Name Title

_____
Name Title

_____
Name Title

Business Address _____

Street Address _____

Mailing Address _____

City, State, Zip Code _____

Phone Number _____

Fax Number _____

Email Address _____

Date _____

QUALIFICATIONS

Failure to furnish complete reference information **ON THIS FORM**, as specified in this project's Notice to Bidders and indicated below, is cause to reject the bid. Additional information may be attached but is not a substitute for this form.

Reference Number 1

Customer Name & Contact Individual	
Telephone & Email	
Project Name (Site Address):	
Is this similar to the project being bid and did this project include roof construction or industrial building? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	Date project completed:

Reference Number 2

Customer Name & Contact Individual	
Telephone & Email	
Project Name (Site Address):	
Is this similar to the project being bid and did this project include woodwork repair on a historical building activity? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	Date project completed:

Reference Number 3

Customer Name & Contact Individual	
Telephone & Email	
Project Name (Site Address):	
Is this similar to the project being bid and did this project include removal of lead-based paint activity? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	Date project completed:

ATTACH BIDDER'S BOND TO ACCOMPANY BID

Know all men by these presents:

That we _____, AS PRINCIPAL, and

_____, AS SURETY, are held and firmly bound unto the City of San Luis Obispo in the sum of:

_____ Dollars (_____) to be paid to said City or its certain attorney, its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents:

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the certain bid of the above

bounden _____

to construct _____
(insert name of street and limits to be improved or project)

dated _____ is accepted by the City of San Luis Obispo, and if the above

bounden _____, his heirs, executors, administrators, successors, and assigns shall duly enter into and execute a contract for such construction and shall execute and deliver the two bonds described within ten (10) days (not including Saturdays, Sundays, or legal holidays) after the above bounden,

_____, has received notice by and from the said City of San Luis Obispo that said contract is ready for execution, then this obligation shall become null and void; otherwise, it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, we hereunto set our hands and seals this ___ day of _____, 20____.

Bidder Principal:

_____

Signature Date
Title:

Surety:

_____

_____

_____

Bidder's signature is not required to be notarized. Surety's signature must be notarized.
Equivalent form may be substituted
(Rev. 6-30-14)

SPECIAL PROVISIONS

ORGANIZATION

Special provisions are under headings that correspond with the main section heading of the Standard Specifications. Each special provision begins with a revision clause that describes or introduces a revision to the Standard Specifications. Any paragraph added or deleted by a revision clause does not change the paragraph number of the Standard Specifications for any other reference to a paragraph of the Standard Specifications.

DIVISION I GENERAL PROVISIONS

1 GENERAL

Add to Section 1-1.01 GENERAL:

The work must be done in compliance with the City of San Luis Obispo, Department of Public Works:

1. Jack House Roof, Widows Walk Repair and Arbor Replacement, Specification No. 2000075-13.01 Special Provisions
2. City of San Luis Obispo Standard Specifications and Engineering Standards – 2020 edition
3. State of California, Department of Transportation Standard Specifications and Standard Plans – 2015 edition

In case of conflict between documents, governing ranking must comply with section 5-1.02 of the City of San Luis Obispo's Standard Specifications. All work must conform to these Special Provisions and appendices, project plans, and the most current Building Codes. In the event of a conflict, the more stringent requirement shall apply.

Failure to comply with the provisions of these sections is a material breach of contract:

1. Sections 5 through 8 of the Standard Specifications
2. Section 12 through 15 of the Standard Specifications
3. Section 77-1 of the Standard Specifications
4. Section 81 of the Standard Specifications
5. authorized working hours
6. OSHA compliance

3 CONTRACT AWARD AND EXECUTION

Add Section 3-1.18B CONTRACT EXECUTION, Building Permit:

3-1.18B Building Permit

The contractor must obtain a no-fee building permit from the Community Development Department. All requirements of the building permit shall be applied to the project. The contractor is responsible for coordinating inspection with the building division for the project. Request for inspection must be scheduled 72 hours in advance of the required inspection.

Prior to project construction, the Contractor must completely fill out the Construction & Demolition Recycling Plan and Disposal Report, found on the City's Construction & Demolition Recycling Program website to obtain a Building Permit. The Construction & Demolition Recycling Plan and Disposal Report must be turned in to Utilities Department located at 879 Morro Street, San Luis Obispo, CA 93401 for review and approval.

Upon completion of the project, the Contractor must submit waste receipts and final permit, see page 2 of the Construction & Demolition Recycling Plan and Disposal Report, to 879 Morro for sign off.

4 SCOPE OF WORK

Add to Section 4-1.03 WORK DESCRIPTION:

Comply with the provisions of Sections 3, 4, 5,6,7,8,9,14,15,16,73, and 99 for general, material, construction, and payment specifics. Refer to these Special Provisions including Appendix B Supplemental Technical Specifications for modifications to the above Sections.

5 CONTROL OF WORK

Add to Section 5-1.01 GENERAL:

Work hours are restricted to 7:00 a.m. to 4:00 p.m Monday through Friday with noise restricted quiet hours from 11:00 a.m. to 1:00 p.m. Quiet hours prohibits use of pneumatic equipment, sawcutting or jackhammer use, but work shall otherwise continue.

Contractors are not permitted to access the interior of the house. All work must be completed from the exterior of the property.

All work involving the removal of lead-based paint from historical railings must be conducted in accordance with applicable OSHA, EPA, and local regulations regarding lead exposure, hazardous waste handling, environmental protection and conform to Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing linked: Guidelines for the Evaluation and Controls of Lead Based Paint Hazards in Housing. Compliance with these guidelines is mandatory for lead handling.

The approved method for paint removal is Peel Away Stripper or an approved equal per Technical Specification 099110.

Prior to removal and repair of the railing, the Contractor shall establish a work zone and secure the area to prevent unauthorized personnel access. Ensure all workers involved in the lead paint stripping process are trained in lead-safe work practices. Set up appropriate containment measures to prevent the release of lead dust and debris into the surrounding environment.

The following step-by-step procedure shall be followed to ensure safe removal and restoration of the historical railing while containing hazardous lead paint waste. Cut the railing from its posts in large sections as needed for replacement. Utilize a vacuum system capable of collecting particles during cutting operations to capture all paint chips and debris.

When removal of the railing is required encase the railing in heavy-duty plastic sheeting (6 mil or greater), ensuring that all sides are sealed securely with industrial-grade tape to prevent lead dust and debris from escaping while moving to the ground.

Transport the railing to an onsite designated containment area (a tent or other fully enclosed structure) for further restoration. Conduct all restoration activities on the project site and within the containment area under controlled conditions. Workers shall wear appropriate respiratory protection (minimum P100 respirators) and disposable protective clothing. Hand tools and HEPA-filtered vacuums must be used continuously to prevent the release of airborne lead dust. No power tools without dust collection or vacuum capabilities are allowed.

All lead paint chips, wood fragments, and related debris must be treated as hazardous waste. Collect waste immediately after removal and transfer it into 55-gallon steel drums. Drums shall be properly sealed, labeled in accordance with hazardous waste regulations, and stored in a designated area until disposal by a licensed hazardous waste contractor. Dust monitoring shall be conducted continuously during the project to ensure compliance with allowable lead exposure limits. The contractor shall document all work activities, including waste disposal records, and provide a final report to the Project Manager upon completion of the work.

All personnel involved must be trained in lead abatement safety and adhere to proper decontamination procedures.

6 CONTROL OF MATERIALS

Add Section 6-1.06 CONTRACTOR FURNISHED MATERIALS

The Contractor shall provide, at no additional cost to the City, all construction power used at the project site.

The Contractor shall make arrangements and provide for adequate portable toilet facilities at the site. The Contractor shall maintain sanitary facilities until completion of work at which time the facilities will be removed from the site and premises disinfected.

The Contractor shall protect all materials and equipment stored onsite from any damage or deterioration until it is ready for installation. The City shall not be held liable for any damage to the material that may occur on site.

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Add to Section 7-1.03B PUBLIC CONVENIENCE, Traffic Control Plan

Work hours are Monday through Friday between 7:00 a.m. to 4:00 p.m.

Provide traffic control plan and traffic control application at or before the preconstruction meeting. Traffic control plan must be drawn to scale. Traffic control application may be obtained on the City's website:

www.slocity.org/government/department-directory/public-works/documents-online/construction-documents

Upon approval of the traffic control plan, the City will issue a no-fee Encroachment Permit. Permittee is responsible to comply with all conditions of the traffic control plan. Complete work using due diligence to restore free flowing of traffic.

Add to Section 7-1.04 PUBLIC SAFETY:

Contractor shall provide a rigid 6-ft high (minimum) chain link or other rigid work site fence surrounding the work site (including any staging and storage areas).

Contractor shall leave the work site clean and free from hazards at the end of each day and on weekends.

Construction equipment will be allowed to be kept on-site after hours and over weekends provided it is fully contained within the fenced and secured work site.

Contract to submit staging plan for approval. The plan must identify the path to construction work that will minimize site disturbance. Where trimming of existing vegetation is required during construction, shall be approved and monitored by the City arborist. Existing improvements damaged during construction must be restored at the Contractor's expense.

8 PROSECUTION AND PROGRESS

Replace the 1st paragraph in Section 8-1.02A SCHEDULE, General with:

Provide a Level 1 schedule for this work.

Add to Section 8-1.1.03 PRECONSTRUCTION CONFERENCE:

14. Schedule of Values for all lump sum bid items.

Add to Section 8-1.04B START OF JOB SITE ACTIVITIES, Standard Start:

After award and execution of the contract, the Contractor shall place the order for long lead time roof materials after submittals are reviewed and approved. The contractor shall

provide the City with a tentative delivery date for all roofing material and subsequently, the City will issue the notice to proceed with a start date of 15 working days prior to delivery. Within 5 days of receiving the notice to proceed, the Contractor must provide a work schedule. Work schedule must indicate the critical path based on the tentative delivery dates of the roofing material. Schedule must show work continuing to completion without interruption.

9 PAYMENT

Add to Section 9-1.01 GENERAL:

Work as specified in these specifications and as shown on the Plans for which no separate payment is provided for in the Bid Item List will be considered a subsidiary obligation of the Contractor and the cost thereof shall be included in the applicable Contract prices for the item to which the work applies.

The following additional Bid Item descriptions are included for those atypical bid items not fully covered in the Standard Specifications:

BID ITEM 3 – CLEAN AND REPAIR FRONT PORCH METAL TILE ROOF : Payment for this lump sum bid item shall be made on a percentage complete basis, based lump sum amount of the bid item. Work shall include inspection for proper attachment, weatherproofing, integrity, and useful life conditions. Seal joint, surface corrosion to be cleaned, treated with rust converting solution, coated with corrosion inhibitive primer, and repainted with color to match. All open joints shall be sealed with a compatible paintable sealant after cleaning sheet metal. This bid item shall include all necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 4 – REMOVE LEAD-BASED PAINT: Payment for this lump sum bid item shall be made on a percentage complete basis, based lump sum amount of the bid item. All paint is to be stripped, using a Peel Away paint stripper or approved equal and must conform with Technical Standard 09910 (Appendix B), and the sequence of work must be approved prior to the start of work by the City Engineer. This bid item shall include all necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 5 – REPAIR EXISTING ROOF RAILING OF FRONT PROCH AND WIDOWS WALK ROOF RAILING INCLUDING POSTS & FINIALS: Measurement and payment for repairing existing railing will be paid by linear feet based on the bid item. Repair elements shall use epoxy wood patching and is limited to 1 cubic inch of volume per patch following the manufacturer’s minimum thickness edge, All replacement wood must be naturally weather and pest-resistant. This bid item shall include all necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 6 – REPLACE EXISTING ROOF RAILING OF FRONT PROCH AND WIDOWS WALK ROOF RAILING INCLUDING POSTS & FINIALS: Measurement and payment for repairing existing railing will be paid by linear feet based on the bid item. Prepare a

summary list of historic rail elements that will need to be replaced in-kind, due to deterioration, and submit to the City Engineer all replacement elements. All replacement elements shall be fabricated using the shape and profile of the remaining elements, that are to be reinstalled as templates. Dutchman repairs should be used before the full replacement of the element., All replacement wood must be naturally weather and pest-resistant. This bid item shall include all necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 26 – ARBOR: Payment for this lump sum bid item shall be made on a percentage complete basis, based lump sum amount of the bid item. Arbor/Trellis to be reconstructed based on existing post-base locations. Existing salvage elements located and the City Corporation Yard are to be used as templates for recreating the replacement parts. This bid item shall include all necessary labor, tools, materials, and equipment required to do all the work. Appendix C: Structural Calculations.

BID ITEM 32 – STAGING AREA RESTORATION: Payment for this lump sum bid item shall be made on a percent complete basis, based on lump sum amount for this item includes full compensation for a complete repair or replace of damaged sod and plants, including but not limited to other materials within areas used for staging. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

Add to Section 9-1.02A MEASUREMENT, General:

Contractor must submit a Schedule of Values for all lump sum bid items of work at the Preconstruction Meeting in compliance with Section 9-1.16B. Payment application pay items shall match the bid item sheet and subcategories to a pay item will not be allowed. Payment for Lump Sum items will be based on the percentage of acceptable work and the schedule of values for that item.

Add to Section 9-1.03 PAYMENT SCOPE:

Any item of work that does not have separate bid item is considered included in the project cost of work and no additional compensation will be paid.

DIVISION II GENERAL CONSTRUCTION

14 ENVIRONMENTAL STEWARDSHIP

Add to Section 14-11.01 HAZARDOUS WASTE AND CONTAMINATION, GENERAL:

The City has completed lead and asbestos testing for the Jack House structure. Please refer to Appendix D for detailed testing results.

The contractor must adhere to all applicable safety and health regulations, including those specified in the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards

in Housing linked: Guidelines for the Evaluation and Controls of Lead Based Paint Hazards in Housing. Compliance with these guidelines is mandatory for lead handling.

Prior to commencing any work, the contractor must submit a Lead Mitigation Plan for City approval. Work may not begin until the plan is approved. Refence Appendix E: Safety Manager Review and Recommendations.

15 EXISTING FACILITIES

Add to Section 15-2.01 HISTORICAL BUILDING PROTECTION:

A qualified contractor with demonstrated experience working with historical structures shall be used for all work on the Widows Walk railing and porch railing.
All historical planting within the property limits must be protected (Appendix F) and handled with care. All trimming or securing of these historical plantings must be approved and completed under the supervision of the City arborist. The Jack House Gardens story map provides an inventory of plantings: Jack House Gardens (arcgis.com).

16 TEMPORARY FACILITIES

The contractor shall provide and maintain service of portable restroom for the entire duration of construction. Portable restroom must be locked at end of each day.

DIVISION XII BUILDING CONSTRUCTION

99 BUILDING CONSTRUCTION

Add SECTION 99-1.01 GENERAL:

See APPENDIX B: Technical Specifications
See APPENDIX E: Safety Manager Review and Recommendations

DIVISION XIII APPENDICES

Add SECTION 100 APPENDICES:

Refer to APPENDIX A: Form of Agreement
Refer to APPENDIX B: Technical Specifications
Refer to APPENDIX C: Arbor Structural Calculations
Refer to APPENDIX D: Lead Report and Asbestos
Refer to APPENDIX E: Safety Manager Review and Recommendations
Refer to APPENDIX F: Historical Planting Map
Refer to APPENDIX G: Arbor Photos

APPENDIX A - FORM OF AGREEMENT

THIS AGREEMENT, made on _____, by and between the City of San Luis Obispo, a municipal corporation and charter city, San Luis Obispo County, California (hereinafter called the Owner) and COMPANY NAME (hereinafter called the Contractor).

WITNESSETH:

That the Owner and the Contractor for the consideration stated herein agree as follows:

ARTICLE 1, SCOPE OF WORK: The Contractor shall perform everything required to be performed, shall provide and furnish all of the labor, materials, necessary tools, expendable equipment, and all utility and transportation services required to complete all the work of construction of

NAME OF PROJECT, SPEC NO.

in strict compliance with the plans and specifications therefor, including any and all Addenda, adopted by the Owner, in strict compliance with the Contract Documents hereinafter enumerated.

It is agreed that said labor, materials, tools, equipment, and services shall be furnished and said work performed and completed under the direction and supervision and subject to the approval of the Owner or its authorized representatives.

ARTICLE II, CONTRACT PRICE: The Owner shall pay the Contractor as full consideration for the faithful performance of this Contract, subject to any additions or deductions as provided in the Contract Documents, the contract prices as follows:

Item No.	Item	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
1.					
2.					
3.					

BID TOTAL: $ .00

Payments are to be made to the Contractor in compliance with and subject to the provisions embodied in the documents made a part of this Contract.

Should any dispute arise respecting the true value of any work omitted, or of any extra work which the Contractor may be required to do, or respecting the size of any payment to the Contractor, during the performance of this Contract, said dispute shall be decided by the Owner and its decision shall be final, and conclusive.

ARTICLE III, COMPONENT PARTS OF THIS CONTRACT: The Contract consists of the following documents, all of which are as fully a part thereof as if herein set out in full, and if not attached, as if hereto attached:

1. Notice to Bidders and Information for Bidders
2. Standard Specifications and Engineering Standards
3. Special Provisions, any Addenda, Plans and Contract Change Orders
4. Caltrans Standard Specifications and Standard Plans 2015
5. Accepted Bid and Bid Bond
6. List of Subcontractors
7. Public Contract Code Sections 10285.1 Statement
8. Public Contract Code Section 10162 Questionnaire
9. Public Contract Code Section 10232 Statement
10. Labor Code Section 1725.5 Statements
11. Bidder Acknowledgements
12. Qualifications
13. Non-collusion Declaration
14. Agreement and Bonds
15. Insurance Requirements and Forms

ARTICLE IV INDEMNIFICATION: The Contractor shall indemnify, defend with legal counsel approved by City, and hold harmless City, its officers, officials, employees and volunteers from and against all liability, loss, damage, expense, cost (including without limitation reasonable legal counsel fees, expert fees and all other costs and fees of litigation) of every nature arising out of or in connection with the Contractor's negligence, recklessness or willful misconduct in the performance of work hereunder or its failure to comply with any of its obligations contained in this Agreement, except such loss or damage which is caused by the sole or active negligence or willful misconduct of the City. Should conflict of interest principles preclude a single legal counsel from representing both the City and the Contractor, or should the City otherwise find the Contractor's legal counsel unacceptable, then the Contractor shall reimburse the City its costs of defense, including without limitation reasonable legal counsel fees, expert fees and all other costs and fees of litigation. The Contractor shall promptly pay any final judgment rendered against the City (and its officers, officials, employees and volunteers) with respect to claims determined by a trier of fact to have been the result of the Contractor's negligent, reckless or wrongful performance. It is expressly understood and agreed that the foregoing provisions are intended to be as broad and inclusive as is permitted by the law of the State of California and will survive termination of this Agreement.

The Contractor obligations under this section apply regardless of whether such claim, charge, damage, demand, action, proceeding, loss, stop notice, cost, expense, judgment, civil fine or penalty, or liability was caused in part or contributed to by an Indemnitee. However, without affecting the rights of the City under any provision of this agreement, the Contractor shall not be required to indemnify and hold harmless the City for liability attributable to the active negligence of City, provided such active negligence is determined by agreement between the parties or by the findings of a court of competent jurisdiction. In

instances where the City is shown to have been actively negligent and where the City's active negligence accounts for only a percentage of the liability involved, the obligation of the Contractor will be for that entire portion or percentage of liability not attributable to the active negligence of the City.

ARTICLE V. It is further expressly agreed by and between the parties hereto that should there be any conflict between the terms of this instrument and the bid of said Contractor, then this instrument shall control and nothing herein shall be considered as an acceptance of the said terms of said bid conflicting herewith.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands this year and date first above written.

CITY OF SAN LUIS OBISPO
A Municipal Corporation

_____
Whitney McDonald, City Manager

APPROVED AS TO FORM

_____
J. Christine Dietrick
City Attorney

CONTRACTOR:

Name of Company

By:_____
Name of CAO/President
Its: CAO/PRESIDENT

(2nd signature required if Corporation):

By:_____
Name of Corporate Officer

Its: _____

APPENDIX B – SUPPLEMENTAL TECHNICAL SPECIFICATION

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SECTION 013591 - HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general protection and treatment procedures for designated historic spaces, areas, and surfaces in Project.

1.3 DEFINITIONS

A. Consolidate: To strengthen loose or deteriorated materials in place.

B. Design Reference Sample: A sample that represents the Architect's pre-bid selection of work to be matched; it may be existing work or work specially produced for the Project.

C. Dismantle: To disassemble or detach a historic item from a surface, or a nonhistoric item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

D. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance that are important to the successful rehabilitation as determined by Architect. Designated historic elements are indicated on Drawings.

E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.

F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.

G. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.

H. Remove: To take down or detach a nonhistoric item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

I. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

J. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

K. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.

L. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.

M. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.

N. Retain: To keep existing items that are not to be removed or dismantled.

O. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials unless otherwise indicated.

P. Salvage: To protect removed or dismantled items and store in preparation for reuse.

Q. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.

R. Strip: To remove existing finish down to base material unless otherwise indicated.

1.4 COORDINATION

A. Historic Treatment Subschedule: A construction schedule coordinating the sequencing and scheduling of historic treatment work for entire Project, including each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces; and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for historic treatment work.

1. Schedule construction operations in sequence required to obtain best historic treatment results.
2. Coordinate sequence of historic treatment work activities to accommodate the following:

    a. Owner's continuing occupancy of portions of existing building.
    b. Owner's partial occupancy of completed Work.
    c. Other known work in progress.
    d. Tests and inspections.

3. Detail sequence of historic treatment work, with start and end dates.
4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
5. Use of stairs.
6. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use. Do not use such equipment without certification from Contractor's professional engineer that the structure can support the imposed loadings without damage.

B. Public Circulation: Coordinate historic treatment work with public circulation patterns at Project site. Some work is near public circulation patterns. Public circulation patterns cannot be closed off entirely, and in places can be only temporarily redirected around small areas of work. Plan and execute the Work accordingly.

1.5 PROJECT MEETINGS FOR HISTORIC TREATMENT

A. Preliminary Historic Treatment Conference: Before starting historic treatment work, Architect will conduct a conference at Project site.

1. Attendees: In addition to representatives of Owner, Architect, and Contractor, historic treatment specialists, and installers whose work interfaces with or affects historic treatment shall be represented at the meeting.
2. Agenda: Discuss items of significance that could affect progress of historic treatment work, including review of the following:

    a. Historic Treatment Subschedule: Discuss and finalize; verify availability of materials, historic treatment specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Fire-prevention plan.
    c. Governing regulations.
    d. Areas where existing construction is to remain and the required protection.
    e. Hauling routes.
    f. Sequence of historic treatment work operations.
    g. Storage, protection, and accounting for salvaged and specially fabricated items.
    h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
    i. Qualifications of personnel assigned to historic treatment work and assigned duties.
    j. Requirements for extent and quality of work, tolerances, and required clearances.
    k. Methods and procedures related to historic treatments, including product manufacturers' written instructions and precautions regarding historic treatment procedures and their effects on materials, components, and vegetation.

l. Embedded work such as flashings, special details, collection of wastes, protection of occupants and the public, and condition of other construction that affect the Work or will affect the work.

3. Reporting: Record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.

B. Coordination Meetings: Conduct coordination audio or video conference meetings specifically for historic treatment work at bi-weekly intervals. Coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to representatives of Owner, Architect, and Contractor, each historic treatment specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of historic treatment work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to historic treatment work.
2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of historic treatment work. Include topics for discussion as appropriate to status of Project.

a. Historic Treatment Subschedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.
b. Schedule Updating: Revise Contractor's Historic Treatment Subschedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
c. Review present and future needs of each entity present, including review items listed in the "Preliminary Historic Treatment Conference" Paragraph above and the following:

1) Interface requirements of historic treatment work with other Project Work.
2) Status of submittals for historic treatment work.
3) Access to historic treatment work.
4) Effectiveness of fire-prevention plan.
5) Quality and work standards of historic treatment work.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.6 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.

1. Carefully dismantle and salvage each item or object and protect it from damage, then promptly deliver it to Owner where directed.

1.7 INFORMATIONAL SUBMITTALS

A. Historic Treatment Subschedule:

1. Submit historic treatment subschedule within fourteen (14) calendar days of date established for commencement of historic treatment work.

B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's historic treatment operations.

C. Historic Treatment Program: Submit twenty-one (21) calendar days before work begins.

D. Fire-Prevention Plan: Submit twenty-one (21) calendar days before work begins.

1.8 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: An experienced firm regularly engaged in historic treatments similar in nature, materials, design, and extent to this work as specified in each section and that has completed a minimum of five (5) recent projects with a record of successful in-service performance that demonstrates the firm's qualifications to perform this work.

1. Field Supervisor Qualifications: Full-time supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on Project site when historic treatment work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond the control of the specialist firm.

a. Construct new mockups of required work whenever a supervisor is replaced.

B. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail the materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in

this and other Sections. Coordinate this whole-Project historic treatment program with specific requirements of programs required in other historic treatment Sections.

1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.

C. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-prevention devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire watch personnel's training, duties, and authority to enforce fire safety.

D. Safety and Health Standard: Comply with ANSI/ASSE A10.6.

1.9 STORAGE AND HANDLING OF HISTORIC MATERIALS

A. Salvaged Historic Materials:

1. Clean loose dirt and debris from salvaged historic items unless more extensive cleaning is indicated.
2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area on-site designated by Owner.
5. Protect items from damage during transport and storage.

B. Historic Materials for Reinstallation:

1. Repair and clean historic items for reuse as indicated.
2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make item functional for use indicated.

C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.

D. Storage: Catalog and store historic items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.

1. Identify each item with a nonpermanent mark to document its original location. Indicate original locations on plans, elevations, sections, or photographs by annotating the identifying marks.
2. Secure stored materials to protect from theft.
3. Control humidity so that it does not exceed 85 percent. Maintain temperatures 5 deg F (3 deg C) or more above the dew point.

E. Storage Space:

1. Owner will arrange for limited on-site location(s) for free storage of historic material. This storage space does not include security nor climate control for stored material.
2. Arrange for off-site locations for storage and protection of historic material that cannot be stored and protected on-site.

1.10 FIELD CONDITIONS

A. Size Limitations in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches (300 mm) or more.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION, GENERAL

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.

1. Use only proven protection methods, appropriate to each area and surface being protected.
2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where historic treatment work is being performed.
3. Erect temporary barriers to form and maintain fire-egress routes.
4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during historic treatment work.
5. Contain dust and debris generated by historic treatment work, and prevent it from reaching the public or adjacent surfaces.
6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.

7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.
8. Provide supplemental sound-control treatment to isolate removal and dismantling work from other areas of the building.

B. Temporary Protection of Historic Materials:

1. Protect existing historic materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Architect.

C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

D. Utility and Communications Services:

1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by historic treatment work before commencing operations.
2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for historic treatment work.
3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

E. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.

1. Prevent solids such as stone or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

F. Existing Roofing: Prior to the start of work in an area, install roofing protection as necessary to protect roofing that is to remain.

3.2 PROTECTION FROM FIRE

A. General: Follow fire-prevention plan and the following:
1. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.

a. If combustible material cannot be removed, provide fire blankets to cover such materials.

2. Prohibit smoking by all persons within Project work and staging areas.

B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:

1. Obtain Owner's approval for operations involving use of open-flame or welding or other high-heat equipment. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
2. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
3. Do not perform work with heat-generating equipment inside building.
4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
6. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:

a. Train each fire watch in the proper operation of fire-control equipment and alarms.
b. Prohibit fire-watch personnel from other work that would be a distraction from fire-watch duties.
c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work at Project site to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.

C. Fire Extinguishers, Fire Blankets, and Rag Buckets: Maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire-watch personnel are trained in fire-extinguisher and blanket use.

D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.

1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is completed.

3.3 PROTECTION DURING APPLICATION OF CHEMICALS

A. Protect motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or damage resulting from applications of chemicals and adhesives.

B. Cover adjacent surfaces with protective materials that are proved to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in historic treatment program. Use covering materials and masking agents that are waterproof and UV resistant and that will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.

C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.

D. Neutralize alkaline and acid wastes and legally dispose of off Owner's property.

E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

3.4 GENERAL HISTORIC TREATMENT

A. Have historic treatment work performed only by qualified historic treatment specialists.

B. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.

C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation photographs. Comply with requirements in Section 024291 – Removal and Salvage of Historic Building Materials.

D. Perform surveys of Project Site as the Work progresses to detect hazards resulting from historic treatment procedures.

E. Follow the procedures in subparagraphs below and procedures approved in historic treatment program unless otherwise indicated:

1. Retain as much existing material as possible; repair and consolidate rather than replace.

2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
3. Use reversible processes wherever possible.
4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.

F. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by Architect.

G. Where missing features are indicated to be repaired or replaced, provide work with appearance based on accurate duplications rather than on conjecture, subject to approval of Architect.

H. Where work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

I. Identify new and replacement materials and features with permanent marks hidden in the completed Work to distinguish them from original materials. Record a legend of identification marks and the locations of the items on record Drawings.

END OF SECTION 013591

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Items indicated to be removed and salvaged remain City's property. Remove, clean, and rehabilitate identified items per drawings for reinstallation.

B. Comply with EPA regulations and hauling and disposal regulations of authorities having jurisdiction.

C. It is not expected that hazardous materials will be encountered in the Work. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify City. City will remove hazardous materials under a separate contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 DEMOLITION

A. Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain or construction being demolished.

B. Provide temporary weather protection to prevent water leakage and damage to structure and interior areas.

C. Protect walls, ceilings, floors, and other existing finish work that are to remain.

D. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.

E. Promptly remove demolished materials from City's property and legally dispose of them. Do not burn demolished materials.

END OF SECTION 024119

SECTION 024290 - PROTECTION OF HISTORIC CONSTRUCTION MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes the following Work. Refer to the Drawings for specific locations of the following Work:
   1. Photographic, written, and/or drawn documentation of historic materials and finishes to be protected.
   2. Protection of all historic rooms, materials, and finishes scheduled to remain in place during demolition and/or construction.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Section 024291 - Removal and Salvage of Historic Building Materials
   2. Section 061000 - Rough Carpentry
   3. Section 064012 - Historic Wood Repair
   4. Section 064013 - Exterior Architectural Woodwork
   5. Section 064015 - Replacing Deteriorated Woodwork
   6. Section 076100 - Sheet Metal Roofing
   7. Section 076200 - Sheet Metal Flashing and Trim

1.3 DEFINITIONS

A. Historic Fabric: Architectural materials and finishes, constructed during the Period of Significance. Most, but not all, historic fabric is identified on the Drawings. It is the intent of this Section and this Project to maintain and restore as much historic fabric as possible.

B. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's Representative's property. Where indicated, document existing materials and items prior to removal, for use in replacing existing with new to match.

C. Remove and Salvage: Remove and salvage element as indicated for replication or for Owner's Representative's use. Salvage includes required protection, cataloging, documentation, and tracking, as required.

D. Remove, Salvage and Reinstall: Remove items indicated; store and protect against damage; restore and alter as indicated for reuse; and reinstall as indicated. Salvage includes required protection, cataloging, documentation, and tracking.

E. Catalog and Documentation: Identification system including physically marking item, photography, written and/or drawn documentation which adequately describe an element or assembly for reinstallation, restoration and/or replication purposes.

F. Retain and Protect in Place: Retain the identified materials and assemblies in place during construction, and protect such materials and assemblies against damage and deterioration throughout construction. Protection requirements include the installation of physical barriers to prevent damage from construction activities. Barrier materials are to be installed without attachment directly to the materials and assemblies requiring protection.

1.4 MATERIALS OWNERSHIP

A. Materials or items which are discovered during the course of selective salvage, demolition and protection, which are not architectural or structural items and which are determined by the Owner's Representative to be historic artifacts, shall be turned over to the Owner's Representative.

1.5 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections, for information only, unless otherwise indicated.

B. Proposed noise, dust-control and waterproofing measures.

C. Schedule of Selective Protection activities indicating the following:
   1. Detailed sequence of selective salvage, demolition, and removal work, with starting and ending dates for each activity.
   2. Detailed sequence of protection activities.
   3. Coordination for interruption, shutoff, capping, and continuation of utility services.
   4. Use of interior stairs and requirements for interior and exterior access.

D. Selective Protection Program: Submit for review a detailed program indicating proposed operations for selective protection work to Owner's Representative for review and approval prior to start of work. Include the following:
   1. Site:
      a. Method of protecting landscape and plantings during demolition and construction activities.
   2. Building Exterior:
      a. Method of protecting building exterior from damage during demolition and construction activities.

3. Building system components, including sprinklers, mechanical, plumbing and electrical equipment, and light fixtures (interior path to work area):
    a. Method of protecting each system component from damage during demolition and construction activities.
4. Woodwork and Trim, Wood Doors and Windows:
    a. Method of protecting woodwork and trim, wood doors and windows remaining on site during demolition and construction activities.
5. Wood Stairs (interior path to work area):
    a. Method of protecting wood stairs and railings during demolition and construction activities.
6. Metal Roofing:
    a. Method of protecting existing roofing from damage during demolition and construction activities
7. Wood Flooring (interior path to work area):
    a. Method of protecting wood floors remaining on site during demolition and construction activities.

E. Photographs of Existing Conditions: Prior to commencement of selective protection work, submit photographs of existing damage on surfaces, equipment, and adjacent improvements that might be misconstrued as damage related to selective protection operations.

F. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.6 QUALITY CONTROL

A. Restoration Specialist: Selective protection work shall be performed by experienced restoration firms and individuals with a minimum of 5 comparable historic restoration projects over the past 5 years. Firms and individuals performing work of this section shall be skilled with specific restoration and reinstallation processes and operations indicated. Includes selective documentation and protection of the following elements:
1.

B. Field-Constructed Mockups: Prior to start of selective protection work, prepare the following mock ups on the building where indicated on the drawings or where directed in the field by the Owner's Representative. Prepare mock-ups using same materials and methods proposed for the Work, and under same weather conditions to be expected during time of the Work. Obtain Owner's Representative's acceptance of qualities before proceeding with the Work.
1. Temporary Protection: Demonstrate installation of temporary protection at the following:
    a. Typical room which will remain generally off limits
    b. Floors.

c. Walls, including baseboard and wainscot.
d. Window openings.
e. Ceilings.
f. Stairs.
g. Demonstrate installation of temporary protection at Contractor's Path of Travel through building.

1.7 PROJECT CONDITIONS

A. HISTORIC BUILDING - Required Care in Selective protection operations.
1. The Work seeks to preserve and restore an historic building; and to protect, salvage and reuse selected building materials and items;
2. Building materials and items shall be considered fragile and must be protected and handled with great care. Historic materials damaged during selective salvage and demolition operations may not be available for replacement; to remedy such damage repair and restoration shall be required. Protection of existing materials and items is of great importance.

B. Protection: Construct temporary barricades and other forms of protection to fully protect existing building interior and all existing materials and items to remain. See section 3.4 for additional requirements.

PART 2 - PRODUCTS

2.1 PROTECTION AND SALVAGE MATERIALS

A. Padding: Non-moisture retentive material for padding and separation of stored materials.
1. Ethafoam, or equal.

B. Hard Barriers
1. Fire-retardant treated lumber and plywood. Do not use salvaged or other materials which are infested with decay fungi or similar organisms.
2. Fiberboard underlayment.

C. Miscellaneous
1. Polyethylene sheeting, corrugated cardboard, kraft paper, and clean quilted pads.
2. Temporary attachment devices, including non-marring tape and removable, non-staining anchors.
3. Sound and thermal insulation materials.
4. Warning signs and labels identifying historic areas, materials, and items to be protected-in-place. Signage and labels to read, at a minimum, "Historic - Retain and Protect," in multiple languages.

D. Insect Infestation

1. Provide non-toxic chemical treatment for exterior woodwork and other materials, which are found to be insect-infested.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Maintain existing utilities indicated to remain in service and protect them against damage during selective salvage, demolition, and protection operations.

B. Verify that utilities have been disconnected and capped as needed in areas of work.

C. Survey existing conditions and correlate with requirements indicated to determine extent of selective salvage, demolition, and protection required.

D. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Owner's Representative.

E. Perform surveys as the Work progresses to detect hazards resulting from selective salvage, demolition, and protection activities.

F. Photo documentation shall be through the use of a camera with an optically ground lens (no plastic lenses.) Film shall be 35 mm, either 100 ASA or 200 ASA film speed or digital media at not less than 6 megapixel resolution as TIF files or as high resolution JPG files saved on a DVD, unless otherwise approved. Test shots shall be provided to determine to the Owner's Representative that photography and methods to accomplish recordation are acceptable to the Owner.

3.2 PREPARATION

A. Conduct selective protection operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
   1. Do not close or obstruct streets, alleys, driveways, walks, or other adjacent occupied or used facilities without permission from Owner's Representative and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

B. Conduct selective protection operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective protection area.
   1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
   2. Protect existing site improvements, appurtenances, and landscaping to remain.

3. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to ensure that no water leakage or damage occurs to structure or interior areas.
4. Protect attic spaces, walls, ceilings, floors, and other existing finished work that are to remain and are exposed during selective protection operations.
5. Cover and protect furniture, furnishings, and equipment that have not been removed.

3.3 PROTECTION, SALVAGE AND REMOVAL

A. Protection:
1. Construct temporary protection at existing elements indicated to remain, to prevent damage to or marring of materials and items. Protection shall be of required size and thickness to withstand impact from falling debris, rolling equipment and objects; residue and droppings from all construction related activities.
   a. Protect Contractor's Path of Travel through the building for the duration of the Project. Delineation of Contractor's Path of Travel to be coordinated with Owner's Representative.
2. Where indicated and where required to prevent damage, materials and items to be protected in place shall be enclosed in protective boxes or coverings. Protective materials shall not be anchored directly to the item being protected. Prevent direct contact between protective assemblies and existing elements or materials by use of spacers, corrugated cardboard, quilted pads, kraft paper, non-moisture retentive padding, or other adequate means.
3. Construct temporary dust proof barricades where indicated and required to separate historically sensitive areas, materials, and items from extensive dirt or dust producing operations. Historically sensitive areas include:
   a. The building interior along Contractor’s Path of Travel.
   b. Exterior building walls adjacent to work area.
   c. Porches, stairs, and other exterior elements as indicated on the Drawings.
4. Provide temporary weather protection during interval between selective demolition and installation of new construction to ensure that no water leakage or damage occurs to structure or interior areas of existing building.
5. Provide temporary shoring and scaffolding, which does not damage historic fabric.
6. Monitor areas indicated to be protected by prohibiting passage and construction activities, except for selected work required therein.
7. Remove protections as required to perform selected Work, and reinstall following completion of selected work.
   a. At completion of construction, completely remove protection. Restore and clean to match equivalent, restored existing materials and items if existing materials and items have been affected by protective coverings.

B. Removal and Demolition: Demolish and remove existing construction as indicated only after protection, cataloging, documentation and salvage operations have been completed. Use methods required to complete Work within limitations of governing regulations and as follows:
   1. Proceed with selective salvage, demolition, and protection systematically.
   2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
   3. Return elements of construction and surfaces to remain to condition existing before start of selective salvage, demolition, and protection operations.

END OF SECTION 024290

SECTION 024291 - REMOVAL AND SALVAGE OF HISTORIC CONSTRUCTION MATERIALS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Removal and salvage of identified historic items and materials, and removal of resulting rubbish and debris. Materials to be salvaged or recycled shall be stored daily in areas and manner specified by the Owner. In the interest of conservation, salvage and recycling shall be pursued to the maximum extent possible.

1.2 SUBMITTALS

A. Work Plan: Submit procedures proposed for the accomplishment of the work. The procedures shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged or recycled, dust control, protection of property which is to remain undisturbed, and coordination with other work in progress. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.

1.3 QUALITY ASSURANCE

A. Qualifications: Provide qualified workers trained and experienced in whole-building recycling, including removal and salvage of historic materials and submit documentation of 5 consecutive years of work of this type. A list of similar projects shall be provided identifying when, where, and for whom the work was done. A current point-of-contact for identified references shall be provided.

1.4 DUST CONTROL

A. The amount of dust resulting from removal, salvage, and demolition operations shall be controlled to prevent the spread of dust to avoid creation of a nuisance in the surrounding area. Use of water to control dust will not be permitted when it will result in, or create, damage to existing building materials and hazardous or objectionable conditions such as ice, flooding, and pollution.

1.5 PROTECTION

A. Protection of Existing Historic Property
   1. Before beginning any removal, salvage, or demolition work, survey the site and examine the Drawings and Specifications to determine the extent of the work.
   2. Take necessary precautions to avoid damage to existing historic items that are to remain in place; to be reused, or to remain the property of the Owner.
   3. Items damaged by the Contractor shall be repaired and restored to original condition, or replaced, as approved by the Owner.
   4. Coordinate the work of this Section with all other work and construct and maintain shoring, bracing, and supports, as required.
   5. Ensure that structural elements are not overloaded and provide additional supports as may be required as a result of any cutting, removal, or demolition work performed under this Contract.

B. Protection From the Weather: The interior of building to remain and salvageable materials shall be protected from the weather at all times. Salvaged historic materials shall be stored out of contact with the ground and under weathertight covering.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 SALVAGED ITEMS

A. All salvaged material to remain property of Owner unless specifically noted otherwise. Salvage items to the maximum extent possible to allow for re-installation. Prior to any demolition work, historic items to be salvaged shall be removed from the structure, and documented and tagged for its specific location in the assembly. Removal of salvageable items shall be accomplished by hand labor to the maximum extent possible. Care shall be taken to not damage historic portions of the structure to remain or items identified for salvage. Furnishings, equipment, and materials not scheduled for salvage or recycling shall be removed prior to any salvaging procedures. Keep a complete record of all salvaged materials including the condition of such materials before, and after, salvage operations.

B. Wood: The following materials shall be removed intact and salvaged: exterior railing, finials, related trim.

3.2 RECYCLED MATERIALS

A. Recycle materials to the maximum extent possible. Removal of recyclable materials shall be accomplished by hand labor wherever possible. Historic portions of the structure to remain and items identified for salvage shall not be damaged while removing materials for recycling.

B. The following materials shall be recycled:
1. Dimension lumber.
2. Scrap wood.
3. Paper and cardboard.
4. Gypsum board.
5. Asphalt.
6. Rubble.
7. Glass.
8. Metals.

3.3 DISPOSITION OF MATERIALS

A. Title to materials and equipment to be demolished, except Owner and historical items, is vested in the Contractor upon receipt of Notice to Proceed. The Owner will not be responsible for the condition, loss, or damage to such property after Notice to Proceed.

B. Material salvaged for the Contractor shall be temporarily stored as approved by the Owner and shall be removed from the Owner’s property before completion of the Contract. Material salvaged for the Contractor shall not be sold on the site.

C. Salvaged items to remain the property of the Owner shall be removed in a manner to prevent damage and as directed by the Owner. Salvaged items shall be packed or crated to protect the items from damage. Items damaged during removal or storage shall be repaired or replaced to match existing items. Containers shall be properly identified as to contents.

3.4 CLEAN-UP

A. Upon completion of the work, portions of structure to remain and adjacent areas and structures shall be cleaned of dust, dirt, and debris caused by salvage and demolition operations. Debris and rubbish shall be removed and transported in a manner that prevents spillage on streets or adjacent areas. Local regulations regarding hauling and disposal shall apply.

END OF SECTION

SECTION 03 10 00

CONCRETE FORMWORK

PART 1 − GENERAL

1.1 SUMMARY

A. This Section includes all labor, materials, equipment, operations, or methods listed, mentioned or scheduled on the plans and/or herein specified, including all incidentals necessary and required for completion of work under this Section.

B. Provide and install formwork for cast-in-place concrete, with shoring, bracing and anchorage.

B. Form accessories.

C. Stripping forms.

1.2 RELATED SECTIONS

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Special Conditions and Division 1 of these Contract Documents.

B. Document 03 20 00 – Reinforcing Steel

C. Section 03 3000 - Cast in Place Concrete

1.3 SYSTEM DESCRIPTION

A. Design, engineer, and construct formwork, shoring, and bracing to meet design and code requirements, so that resultant concrete conforms to required shapes, lines, and dimensions.

B. Contractor shall be responsible for strength of forms. In general, deflection of finished surface shall not exceed that produced by 5/8 inch plywood against studs set on 12 inch centers.

1.4 QUALITY ASSURANCE

A. Construct and erect concrete formwork in accordance with ACI and 2019 CBC.

1.5 PRODUCT HANDLING

A. Protection: Protect formwork materials before, during and after installation and protect the installed work and materials of other trades.

B. Replacements: In the event of damage, immediately make repairs and replacements necessary to the acceptance of the City and Structural Engineer at no additional cost to the Owner.

1.6 SEQUENCING AND SCHEDULING

A. Obtain information from other trades and suppliers in sample time to schedule and coordinate the installation of items furnished by them to be embedded in concrete.

PART 2 − PRODUCTS

2 .1 FORM MATERIALS

A. Earth Forms: Acceptable for grade beams, footings and similar below grade structures provided the following:

1. Structural Drawings do not require and indicate otherwise;
2. Vertical excavated material will stand without caving;
3. Minimum reinforcing steel clearances are maintained;
4. Suitable provisions are taken to prevent raveling on top edges of excavation;
5. Suitable provisions are taken to prevent sloughing of loose material from walls of excavation;
6. Excavation is neatly cut;
7. Concrete which is exposed to view is poured against wood or metal forms to a minimum depth of 6 inches below finished grade;

B. Wood Forms for Exposed Concrete Not Otherwise Noted and Specified:

1. All wood forms shall be FSC.
2. DFPA graded HDO (High Density Overlaid) Plyform, Class I or II (as per strength and tolerance requirements), exterior, each piece grade marked.

2 .2 FORMWORK ACCESSORIES

A. Form Ties: Snap-off metal of fixed length; cone type; 1 inch break back dimension; free of defects that will leave holes no larger than 1 inch diameter in concrete surface.

B. Fillets for Chamfered Corners: Wood strips type; ~ ¾” in size; maximum possible lengths.

C. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required; of strength and character to maintain formwork in place while placing concrete.

PART 3 − EXECUTION

3.1 EXAMINATION

A. Verify lines, levels, and measurements before proceeding with formwork.

3. 2 EARTH FORMS

A. Hand trim sides and bottoms of earth forms. Increase dimensions shown on drawings 1-1/2 inches for each form surface omitted.

B. Forms must be free of any debris, loose soil, and must not have standing water prior to placing concrete.

3.3 CONSTRUCTION OF FORMS

A. Rigidly support and substantially construct forms; erect plumb, straight and true to line, shape, and dimensions, and in precise position to form the lines and designs indicated, suitable for removal without prying against concrete.

B. Make forms tight without cracks and holes to prevent loss of fine particles from the concrete.

C. Construction joints shall be in accordance with requirements of Cast-In-Place Concrete, Division 3. Provide a surfaced pouring strip where construction joints intersect exposed surfaces to provide straight line at joints. Prior to subsequent pour, remove strip and tighten forms. Construction joints shall show no "overlapping" and off setting of concrete surfaces and shall, as closely as possible, present the same appearance as butted plywood joints. Joints in a continuous line shall be straight and true.

D. Provide fillet strips on external corners of beams and columns.

E. Provide forms for slabs, with removable leveling screeds for flat work.

F. Remove wood spreaders from forms prior to pour. No wood shall remain inside forms.

G. Form lumber from this project may be reused for concealed framing, providing lumber at the time of reuse meets the framing grade requirements specified; is in good condition, thoroughly clean, with nails removed.

3.4 INSERTS AND EMBEDDED ITEMS

A. Provide proper and adequate means for accurate positioning and securing bolts, hold-downs, reinforcing, and inserts in concrete.

B. Securely place embedded items, sleeves, and pockets, as indicated. Coordinate work of other sections. Use templates where necessary.

C. Do not cut reinforcing for embedded items and inserts unless specifically indicated on Drawings.

D. Do not embed piping in concrete, unless specifically authorized by City and indicated on Drawings.

E. Do not embed electrical conduit in concrete without specific written authorization from City and Structural Engineer. Locate conduit so as to keep the concrete at its maximum structural strength. In slabs on grade the outside diameter of conduit

shall not exceed 30 percent of the concrete thickness and shall be located at the centerline of slab. Conduits can be grouped in pairs, but minimum clear distance between single conduits or pairs shall be 6 inches.

3. 5 FORMWORK TOLERANCES

A. Wall Centerline Location: +/- 1/4 inch.

B. Slab on Grade Thickness: +/- 1/2 inch.

C. Other: +/- 1/4 inch.

3 .6 REMOVAL OF FORMS

A. Remove forms and falsework so as to ensure the complete safety of the structure. Do not remove supports until members have sufficient strength to safely support their own weight and superimposed loading with proper factor of safety. Do not remove forms and shoring without the authorization of the City and Structural Engineer. Authorization by the City and Structural Engineer of form removal shall not relieve the Contractor from responsibility for damage due to faulty construction or materials.

B. Remove forms for exposed concrete surfaces so as to preclude damage to finish. Do not use pinch bars and similar tools for prying against exposed surfaces.

C. Do not remove forms and shoring until the following minimum times have elapsed after concrete is placed:

1. Vertical Forms (Walls, Columns, Beam Sides): 7 days.
2. Side Forms (Footings, Slabs on Grade): 4 days.

D. Remove bolts, wires, clamps, rods, spreader ties, and other embedded items not necessary to the work to a minimum of 1 inch from the surface. Take precautions to eliminate danger of rust stains from form tie materials or other unprotected ferrous materials embedded in and adjacent to exposed concrete surfaces.

END OF SECTION

SECTION 03 20 00

CONCRETE REINFORCEMENT

PART 1 − GENERAL

1.1 SUMMARY

A. This Section includes all labor, materials, equipment, operations, or methods listed, mentioned or scheduled on the plans and/or herein specified, including all incidentals necessary and required for completion of work under this Section.

B. Provide and install Reinforcing steel bars, welded steel wire fabric fabricated steel bar or rod mats for cast-in-place and precast/tilt-up concrete.

C. Support chairs, bolsters, bar supports, spacers, for supporting reinforcement.

1.2 RELATED SECTIONS

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Special Conditions and Division 1 of these Contract Documents.

B. Section 03 3000 - Cast in Place Concrete

1.3 SUBMITTALS

A. Submit under provisions of City Standard Specification, Shop Drawings:

1. Submit fully detailed shop drawings, including bending schedules and bending diagrams. Indicate placing details and size location of reinforcing steel. Shop drawings shall be of such detail and completeness that fabrication and placement at the site can be accomplished without the use of contract drawings for reference.
2. Do not fabricate and place reinforcing steel before the shop drawings review has been completed by the City and Structural Engineer and returned to the Contractor. Review of shop drawings by the City and Structural Engineer will not relieve the Contractor of responsibility for errors or for failure in accuracy and complete placing of the work.

1.4 QUALITY ASSURANCE

A. Perform concrete reinforcement work in accordance with CRSI, Manual of Standard Practice.

B. Conform to ACI, and 2022 CBC.

C. Submit certified mill test reports (tensile and bending) for each heat or melt of steel prior to delivery of material to the job site. Where reinforcing is required to be welded, mill test reports shall verify the weld ability of the steel.

1.5 COORDINATION

A. Check Cityural, structural, mechanical and electrical drawings for anchor bolt schedules and locations, anchors, inserts, conduits, sleeves, and any other items which are required to be cast in concrete. Make necessary provisions as required so that reinforcing steel will not interfere with the placement of such embedded items.

1.6 PRODUCT HANDLING

A. Bundle reinforcement and tag with suitable identification to facilitate shoring, placing and transport.

B. Keep a sufficient supply of tested and approved reinforcement on the site to avoid delaying the work.

C. Take means necessary to protect reinforcing steel before, during, and after installation and to protect the work and materials of other trades.

D. Store reinforcing steel in a manner to prevent damage, excessive rusting, and fouling with dirt, grease and other bond-breaking coatings.

E. Take necessary precautions to maintain identification after the bundles of reinforcing steel have been broken.

F. In the event of damage, immediately make repairs and replacements necessary to the acceptance of the City and at no additional cost to the owner.

PART 2 − PRODUCTS

2.1 REINFORCING STEEL

A. Reinforcing Bars: New, free of loose rust. 1. Billet-Steel Bars: ASTM A615, Grade 60. Welded reinforcing bars shall be grade 60 conforming to ASTM A706.

B. Welded Wire Fabric: ASTM A185; flat sheets.

C. Tie Wire: 16 gauge minimum, black and annealed.

D. Accessories: Metal or plastic spacers, supports, ties, as required for spacing assembling and supporting reinforcing in place. Supports shall comply with CRSI, Manual of Standard Practice.

2.2 FABRICATION

A. Shop fabricate reinforcement in accordance with details on Drawings and 2022 CBC. Where specific details are not shown or noted, fabricate in conformance with ACI and CRSI.

B. Clean bars of loose rust, loose mill scale and substances which may decrease bond.

C. Bend bars cold and accurately to details on final reviewed shop drawings.

2.3 SOURCE QUALITY CONTROL

A. Tests shall be made in accordance with the 2022 CBC. The testing laboratory will select samples for physical tests of reinforcing steel from material at the place of distribution, test the reinforcing steel and submit results of tests to the City for review prior to fabrication.

1. Identified Reinforcing Steel: One tensile test and one bend test shall be made from a specimen from each 10 tons or fraction thereof of each size of reinforcing steel, if reinforcing is taken from bundles identified with heat number, is accompanied by mill analysis and mill test reports, and is properly tagged with an identification certificate.
2. Unidentified Reinforcing Steel: One tensile and one bend test will be made for each 2-1/2 tons of fractions thereof of each size of reinforcing steel.

B. Costs of tests to determine if unidentified steel complies with specified standards will be deducted by the District from the Contract Sum by Change Order.

PART 3 − EXECUTION

3.1 EXAMINATION

A. Carefully examine the installed work of other trades prior to installing reinforcing steel and verify that such work is complete to the point where work of this section may commence.

B. Ensure that reinforcing steel is installed in strict accordance with pertinent codes and regulations, the final reviewed shop drawings and original design.

C. In the event of discrepancy, immediately notify the City and Structural Engineer. Do not proceed with installation in areas of discrepancy until discrepancies have been fully resolved.

3.2 PLACING REINFORCING STEEL

A. Place reinforcing steel in accordance with the Drawings, final reviewed shop drawings and the CRSI Manual of Standard Practice. Install reinforcement accurately and secure against movement, particularly under the weight of workers and the placement of concrete.

B. Locate reinforcement accurately in the forms and hold in place by means of supports adequate to prevent displacement and to maintain reinforcement at proper distances from form face. Place supports in accordance with CRSI Manual of Standard Practice. Use of wood supports and spacers inside the forms is not permitted.

C. Support reinforcement for slabs in precast concrete blocks or chairs spaced 4'-0" on center (maximum) both ways, staggered. Size blocks or chairs so the

reinforcing is maintained at the proper elevation in the slab.

D. Wherever conduits, piping, inserts, sleeves, and other embedded items interfere with placing of reinforcing steel, obtain City's approval of methods of procedure before concrete is placed. Bending of bars around openings and sleeves is not permitted.

E. Tie reinforcing rigidly and securely with steel tie wire at splices, at crossing points and at intersections in the position shown on Drawings. After cutting, bed tie wire in such a manner that concrete placement will not force the wire ends to surface of concrete.

F. Make splices only at those locations shown on the Drawings or as authorized by the City and Structural Engineer. Stagger splices in adjacent bars per Class "B" (50 percent within required lap length).

G. Place welded wire fabric in as long lengths as practicable. Wire laps. Lap edges a minimum of 2 inches center to center of selvage wires with laps a minimum of 2 inches greater than transverse wire spacing; offset end laps in adjacent widths.

H. Tie dowels securely in place before concrete is deposited. In the event there are no bars in position to which dowels may be tied, add #3 bars (minimum) to provide proper support and anchorage. Do not bend dowels after placement of concrete.

3.3 FIELD QUALITY CONTROL

A. Installation and placement of reinforcing steel will be inspected by an authorized inspector prior to concrete pour.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

1.1 PART 1 − GENERAL

1.2 SUMMARY

A. This Section includes all labor, materials, equipment, operations, or methods listed, mentioned or scheduled on the plans and/or herein specified, including all incidentals necessary and required for completion of work under this Section.

B. Provide and install Portland cement concrete site work complete, including the following principal items:

1. Concrete foundation

1.2 RELATED SECTIONS

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Special Conditions and Division 1 of these Contract Documents.

C. Document 03 10 00 - Concrete Formwork

D. Document 03 20 00 – Reinforcing Steel

1.3 SUBMITTALS FOR REVIEW

A. The Contractor's Testing Laboratory's certificate of compliance.

B. The Contractor shall submit:

1. Certified copies of mix designs for each concrete class specified including compressive strength test reports. Mix design shall be signed by California Registered Civil Engineering to verify compliance with CBC Chapter 19.
2. Certification that materials meet requirements specified.
3. Certification from vendor that samples originate from and are representative of each lot proposed for use.
4. Submit location of construction joints and cold joints when different from that shown on the drawings.

C. The Testing Agency will submit reports on tests and inspections performed to the City and Structural Engineer, and the Contractor.

D. Schedule of placing for the Construction Manager’s review before starting Work.

E. Keep record at the job site showing time and place of each pour of concrete together with transit mix delivery slip certifying contents of the pour per CBC 1705.3. Make records available to the City.

1.4 QUALITY ASSURANCE

A. Reference and Standards:

1. Perform work in accordance with all applicable laws, codes and regulations required by the State of California.
2. Reference to "Standard Specifications" shall mean the current Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, CALTRANS.
3. The American Concrete Institute (ACI): "Manual of Concrete Practice," Parts 1, 2 and 3.
4. California Code of Regulations. Title 24, 2022 edition, provisions also known as California Building Code (CBC).
5. American Society for Testing and Materials (ASTM).

B. Stipulations:

1. The Contractor shall be responsible for quality of concrete in place and shall bear burden of proof that concrete meets minimum requirements. Use the same mix design for all exposed concrete.

2. Placing of concrete by means of pumping will be an acceptable method of placement providing that the Contractor can demonstrate that, with the proposed additives, the specified concrete strengths and slump will be met.

1.5 FIELD SAMPLES AND TESTS

A. The Contractor or the Contractor's representative will select a qualified testing laboratory to take samples for testing during the course of the work as considered necessary. The Owner will pay costs for such tests. Contractor shall cooperate in making tests and shall be responsible for notifying the designated laboratory in sufficient time to allow taking of samples at time of pour.

B. Should tests show that concrete is below specified strength, Contractor shall remove all such concrete, as directed by the Project Inspector. Full cost of removal of low strength concrete, its replacement with concrete of proper specified strength and testing, shall be borne by Contractor.

C. The Testing Laboratory Qualifications: The Testing Laboratory shall be approved by the city and under direction of a Civil Engineer registered in the State of California, shall have operated successfully for four years prior to this work, and shall conform to requirements of ASTM E329.

D. All samples and testing shall conform with CBC Sections- 1903, 1905 and 1916.

1.6 COORDINATION

A. Coordinate items of other trades. Contractor shall be responsible for the proper installation of all accessories embedded in the concrete and for the provision of holes, openings, etc., necessary to the execution of the work of the trades.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Supply ready mixed concrete throughout. Batch, mix and transport in accordance with ASTM C-94, "Specifications for Ready Mixed Concrete."

B. Mix and deliver concrete in quantities that will permit immediate use only.

C. Indiscriminate addition of water for any reason will be cause for rejection of the load.

D. Ensure storage facilities are weather tight and dry.

E. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use.

F. Store bulk cement in bins capable of preventing exposure to moisture.

G. Use sacked cement in chronological order of delivery. Store each shipment so that it may be readily distinguishable from other shipments.

PART 2 − PRODUCTS

2.1 CONCRETE CLASSES

USES	STRENGTH	AGGREGATE	WEIGHT	SLUMP
Drilled Piers	3,000 psi	¾ Maximum	145 pcf	4” +/- 1”

A. Class: Identifies all concrete as specified.

B. Strength: Compressive strength in psi after 28-days when tested in accordance with ASTM C39. All concrete shall develop compression strength specified in 28-days. To meet above requirements, mix shall be designed such that average compressive strength will exceed specified 28-day strength by an amount as specified by ACI 318.

C. Aggregate: Maximum size in inches.

D. Weight: Pounds per cubic foot, air dry.

E. Slump: In inches when tested in accordance with ASTM C143.

F. Concrete mixes shall be in accordance with CalTrans Standard Specifications Section 90.

2.2 CONCRETE MATERIALS

A. General Requirements:
1. All materials shall be Local/Regional Materials.
2. Cement and aggregates shall have proven history of successful use with one another. Sources of cement and aggregate shall remain unchanged throughout work unless the City and Structural Engineer approves request for change made at least 10-days prior to anticipated date of casting.
3. Ready-mixed concrete shall meet requirements of ASTM C94.
4. Deviations in properties of materials tested by the Testing Agency shall be cause for their rejection pending additional test results and redesign of mix.
5. No frozen aggregates will be permitted.

B. Cements:

1. ASTM C150, Type II. Use one brand of cement throughout project unless otherwise acceptable to City and Structural Engineer.
2. Maximum water/cement ratio of 0.45 for all cast-in-place concrete.

C. Fly Ash: ASTM C618, Type F; 15% (as percentage replacement of cement) and per CBC 1903.6

D. Aggregates:

1. Coarse: ASTM C33. Coarse aggregate shall consist of a clean, hard, fine grained, sound crushed rock, or washed gravel or a combination of both. It shall be free from oil, organic matter or other deleterious substances and shall not contain more than two percent by weight of shale or cherty material. "Cleanness value shall not be less than 75 when tested per MM Test Method, 227 and conforming to CBC Section 1903A.6.
2. Fines: ASTM C33. Sand equivalent shall be not less than 75 when tested as per ASTM D2419.
3. Provide aggregates from a single source for exposed concrete.

E. Water: Clean and potable, free from impurities detrimental to concrete and free from deleterious amounts of acids, alkalis, scale, or organic materials per ACI 318 and ASTM C1602.

F. Water-Reducing Admixture: Must be compatible with color pigments where required. ASTM C494, Type A, that does not contain non-lignini sulfonate. Same as Grace Construction Materials' "WRDA" with hycol or Master Builders "Pozzolith" 322N.

G. High-Range Water-Reducing Admixture: Must be compatible with color pigments where required. ASTM C 494, Type F, BASF Corporation “MasterRheobuild 1000” (formerly"RHEOBUILD 1000") or W. R. Grace’s “Daracem” or “ADVA” Series.

H. Other Admixtures: Only as accepted by the City and Structural Engineer.

I. Curing Materials: Curing Compound: ASTM C309. Water loss – not more than 0.55 kg/m2 in 72 hours; Light Reflectance – not less than 60%. Same as Grace Construction Materials' "Horn Clear Seal"; Grimes Co.'s "Sealcrete"; Master Builders' "Masterseal W", or approved equal product.

J. Concrete Slab Vapor Barrier: ASTM E1745 Class A, B & C– Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs. 15 mil. Stego Wrap by Stego Industries LLC or approved equal product.

K. Capillary Break: The gravel layer below concrete slabs shall be 6" of ¾" clean, free draining crushed rock.

2.3 ANCILLARY MATERIALS

A. Concrete Sealer: BASF "Kure 1315", NoxCrete "Cure and Seal 100-300E" or approve equal.

2.4 MIXES

A. General Requirements:

1. Certified copies of mix designs for each concrete class specified including compressive strength test reports. Mix design shall be signed by California Registered Civil Engineering to verify compliance with CBC Chapter 19 and the project specifications for each concrete class.
2. Mix design shall include compression strength test reports per ACI 318, section 5.3 indicating conformance with specifications.
3. Mix shall be designed, tested, and adjusted, if necessary, in ample time before first concrete is scheduled to be placed. Laboratory data and strength test results for revised mix design shall be submitted to City and Structural Engineer prior to using in project.
4. The Contractor's mix designs shall be subject to review by the City, Structural Engineer and by the Owner's Testing Agency.
5. The Contractor shall instruct Laboratory to base mix design on use of materials tested and approved by the Owner's Testing Agency.
6. Introduction of calcium chloride will not be permitted
7. Unspecified admixtures will not be permitted, unless signed by California Registered Civil Engineering to verify compliance with CBC Chapter 19, reviewed and approved by the City and Structural Engineer.

B. Drill Pier Mix requirements:

1. Maximum water/cement ratio: 0.5.
2. Slump: 4" +/- 1" Maximum
3. Fly ash content: 15 percent (as percentage replacement of cement).
4. Do not use air entrainment additives.
5. Use of Water-Reducing admixture is required. Use High Range Water-Reducing admixture (super plasticizer) when required to maintain workability and pumpability.

C. Patching Mortar: Mix in proportions by volume of one part cement to two parts fine sand.

2.5 MIXING

A. Batching Plant Conditions:

1. Ensure equipment and plant will afford accurate weighing, minimize segregation and will efficiently handle all materials to satisfaction of the City, Structural Engineer and the Owner's Testing Agency.
2. Replace at no additional expense equipment the City, Structural Engineer, and the Owner's Agency deem inadequate or unsuitable.
3. Use approved moisture meter capable of determining moisture content of sand.

B. General Requirements:

1. Thoroughly clean concrete equipment before use for Cityural concrete mixes to avoid contamination.
2. Mix cement, fine and coarse aggregates, admixtures and water to exact proportions of mix designs. Method of mixing shall comply with ACI 318 Section 5.3.
3. Measure fine and coarse aggregates separately according to approved method which provides accurate control and easy checking.
4. Adjust grading to improve workability; do not add water unless otherwise directed.
5. Maintain proportions, values, or factors of approved mixes throughout work.
6. Mix concrete in transit mixers five minutes immediately prior to discharge in addition to mixing as called for by ACI 304 and ASTM C94.

C. Admixtures: Use automatic metering dispenser to introduce admixture into mix. Dispenser shall be recommended and calibrated by admixture manufacturer.

2.6 SOURCE QUALITY CONTROL

A. The Owner's Testing Agency will:

1. Review mix designs, certificates of compliance, and samples of materials the Contractor proposes to use.

2. Test and inspect materials, as necessary, in accordance with ACI 318, section 5.6-5.11 and CBC Sections 1903 and 1913 for compliance with requirements.

3. Take samples as required from the Contractor's designated sources.

4. Take one grab sample for each 100 tons of Portland cement except that, when used in bulk loading ready-mix plants where separate bins for pre-tested cement are not available, take grab samples for each shipment of cement placed in bin with not less than one sample being taken for each day's pour and subsequently test such samples if required by the City and Structural Engineer.

5. Test both coarse and fine aggregate by use of solution of sodium or magnesium sulfate, or both whenever in the judgment of the City and Structural Engineer such tests are necessary to determine quality of material. Perform such tests in accordance with ASTM C88. Loss shall not exceed 6-percent of either fine or coarse aggregate. Aggregate failing to comply with this requirement may be used in the Work provided it contains less than 2-percent of shale and other deleterious particles and shows a loss in soundness test of not more than 10-percent when tested in the sodium sulphate solution. Test aggregates as required by CBC Section 1903.6.

6. Test for sand equivalent of fine aggregate in accordance with California Test 217.

7. Test for cleanness value of coarse aggregate in accordance with California Test 227.

8. Inspect plant prior to any work to verify following:
   a. Plant is equipped with approved metering devices for determining moisture content of fine aggregate.
   b. Other plant quality controls are adequate.

9. Continuously inspect quality and quantity of materials used in transit mixed concrete, in batched aggregates and ready-mixed concrete at mixing plant or other location per CBC Section 1913 where other materials are measured.

B. Waiver of Batch Plant Inspection:

1. The concrete supplier shall furnish to the City certification that the cement proposed conforms to the requirements of CBC section 1913.1:
   a. Testing Agency shall check the first batching at the start of work and furnish mix proportions to the licensed Weighmaster.
   b. Licensed Weighmaster shall identify material quantities and certify each load by a ticket.
   c. Project Inspector shall collect truck mix tickets with load identification and maintain a daily record of placement. Trucks without a load ticket identifying the mix shall be rejected. Copies of daily placement record shall be submitted to the City.
   d. At the end of the project, the Weighmaster shall submit an affidavit to City certifying that all concrete supplied conforms to proportions established by mix designs.

PART 3 − EXECUTION

3.1 GENERAL REQUIREMENTS

A. Install all concrete work true to line and grade as indicated on the drawings. Installation shall conform with the standards and requirements of ACI 117-06-Specifications for Tolerance for concrete construction and materials.

B. Correct irregularities to the satisfaction of the City and Structural Engineer.

3.2 PREPARATION

A. Take every precaution to obtain a subgrade of uniform bearing power by compaction to provide a firm base.

B. Subgrade shall be kept moist and shall not be allowed to dry out before placement of concrete. Place no material on muddy subgrade.

3.3 PLACING CONCRETE

A. The City, Structural Engineer, and Testing Laboratory shall be notified at least 48 hours before placing concrete.

B. Place concrete in accordance with ACI 318, section 5.10.

C. Place concrete in cycles as a continuous operation to permit proper and thorough integration and to complete scheduled placement. Place no concrete where sun, wind, heat, or facilities prevent proper finishing and curing.

D. Convey concrete as rapidly and directly as practicable to preserve quality and to prevent separation from rehandling and flowing; do not deposit concrete initially set. Cast concrete within ninety (90) minutes after adding water unless otherwise noted. Retempering of concrete which has partially set will not be permitted.

E. Take precautions to avoid damage to under-slab moisture barrier and displacement of reinforcement and formwork.

F. Deposit concrete vertically in its final position. Avoid free falls in excess of four feet where reinforcement will cause segregation and in typical conditions unless the City and the Structural Engineer approves otherwise.

G. Keep forms and reinforcement clean above pour line by removing clinging concrete with wire brush before casting next lift. Also remove leakage through forms.

H. Interruption in casting longer than 60-minutes shall be cause for discontinuing casting for remainder of day. In this event, cut back concrete and provide construction joints as directed by the Structural Engineer; clean forms and reinforcement as necessary to receive concrete at a later time.

I. Hot Weather Concreting: Conform to ACI 305R and following requirements when mean daily temperature rises above 75 degrees Fahrenheit.

1. An upper temperature limit of concrete mixes shall be established by the Contractor for each class of concrete. Concrete temperature during placing shall not be so high as to cause difficulty from loss of slump, flash set, or cold joints, and shall not exceed 90°F. Other project climatic conditions detrimental to concrete quality such as relative humidity, wind velocity, and solar radiation shall also be considered.
2. Trial batches of concrete for each mix design shall be made at the limiting mix temperature selected. In lieu of trial batches, compression strength test reports (20 minimum) at the limiting temperature for each proposed mix shall be submitted to the Owner's testing laboratory for review.
3. Practices to maintain concrete below maximum limiting temperature shall be

in accordance with ACI 305. Concrete ingredients may be cooled before mixing, or flake ice or well-crushed ice of a size that will melt completely during mixing may be substituted for part of the mixing water.

4. Practices to avoid the potential problems of hot weather concreting shall be employed by the Contractor in accordance with ACI 305.
5. When the temperature of the reinforcing steel or steel deck forms is greater than 120°F, reinforcing and forms shall be sprayed with water just prior to placing the concrete.

J. Cold Weather Concreting:

1. No placement of concrete will be allowed at temperatures below 20 degrees Fahrenheit or if mean daily temperature for curing period is anticipated to be below 20 degrees Fahrenheit.
2. No concrete placement will be allowed on frozen subgrade.
3. Conform to ACI 306 and following requirements when mean daily temperature falls below 40 degrees Fahrenheit.
   a. Reinforcement, forms or ground to receive concrete shall be completely free from frost.
   b. Concrete at time of placement for footings shall have temperature no lower than 50 degrees Fahrenheit, for all other concrete this minimum temperature at time of placement shall be 60 degrees Fahrenheit. Maximum temperature shall be 90 degrees Fahrenheit.
   c. Concrete shall be maintained at temperature no lower than 50 degrees Fahrenheit for minimum 7-day period after placement by means of blanket insulation, heaters, or other methods as approved by the City and Structural Engineer.
   d. Use of calcium chloride or admixtures containing calcium chloride as accelerators will not be permitted.
   e. The Contractor shall keep a record of concrete surface temperature for first 7-days after each pour. This record shall be open to inspection by the Inspector.

K. Consolidating:

1. Use vibrators for thorough consolidation of concrete.
2. Provide vibrators for each location during simultaneous placing to ensure timely consolidation around reinforcement, embedded items and into corners of forms; ensure availability of spare vibrators in case of failures. Vibrate through full depth of freshly placed concrete.
3. Do not place vibrators against reinforcement, attach to forms, or use to spread concrete.
4. Exposed Concrete: Vibrate with rubber type heads and, in addition, spade along forms with flat strap or plate.

L. Construction Joints:

1. Verify location and conformance with typical details; provide only where designated or approved by the City and Structural Engineer. Comply with ACI 318, section 6.4.
2. All horizontal and vertical construction joints to be thoroughly sandblasted to clean and roughen entire surface to minimum 1/4-inch relief exposing clean coarse aggregate solidly embedded in mortar matrix.
3. Just prior to depositing concrete, the surface of the construction joint shall be

thoroughly wetted.

M. Walls and Other Formed Elements:

1. Space points of deposit to eliminate need for lateral flow. Placing procedures of concrete in forms permitting escape of mortar, or flow of concrete itself, will not be permitted.
2. Level top surface upon stopping work.
3. Take special care to fill each part of the forms by depositing concrete directly as near final position as possible, and to force concrete under and around reinforcement, embedded items, without displacement.
4. After concrete has taken its initial set, care shall be exercised to avoid jarring forms or placing any strain on ends of projecting reinforcement.
5. Where backfill is placed against a wall, it shall be adequately shored until it has attained design strength. All shoring shall be designed by a structural engineer licensed in the State of California. Signed calculations and shoring drawings shall be submitted to the EOR for review.

3.3 CURING

A. General Requirements:

1. Take curing measures immediately after casting and for measures other than application of curing compound, extend for seven days. The City and Structural Engineer may recommend longer periods based upon prevailing temperature, wind and relative humidity. Comply with ACI 318, section 5.11.
2. Avoid alternate wetting and drying and fluctuations of concrete temperature.
3. Protect fresh concrete from direct rays of sun, rain, freezing, drying winds, soiling, and damage.
4. Do not permit curing method to affect adversely finishes or treatments applied to finish concrete.

B. Curing Method, Typical: Obtain the City’s and Structural Engineer's approval of alternate measures.

1. Keep forms and concrete surfaces moist during period forms are required to remain in place.

C. Cure exposed concrete in accordance with CalTrans Standard Specifications Section 90.

D. Only water shall be used for curing concrete.

3.5 FIELD QUALITY CONTROL

A. The Testing Laboratory will sample and test cast-in-place concrete as required by the Division of State Citys. Tests, if required, will be made in accordance with ACI 318, section 5.4-5.11, and CBC Section 1903.

1. Review concrete mix designs.
2. Inspect concrete and grout placement continuously.
3. Test concrete to control slumps according to ASTM C143.
4. Continuously monitor concrete temperature as it arrives on the site.

5. Test concrete for required compressive strength in accordance with ACI 318, section 5.6.2 through 5.6.5:
   a. Make and cure three specimen cylinders according to ASTM C31 for each 50 cubic yards, or fraction thereof, of each class poured at site each day.
   b. Retain one cylinder for 7-day test and two for the 28-day test.
   c. Number each cylinder 1A, 1B, 1C, 2A, 2B, 2C, etc; date each set; and keep accurate record of pour each set represents.
   d. Transport specimen cylinders from job to laboratory after cylinders have cured for 24-hours on site. Cylinders shall be covered and kept at air temperatures between 60 and 80 degrees Fahrenheit.
   e. Test specimen cylinders at age 7-days and age 28-days for specified strength according to ASTM C39.
   f. Base strength value on average of two cylinders taken for 28-day test.
6. Test and inspect materials, as necessary, in accordance with ACI 318, MM Test Method 227 (Coarse Aggregates) and MM Test Method 217 (Fine Aggregates), for compliance with requirements specified in this Section.

B. The Contractor shall:

1. Submit ticket for each batch of concrete delivered to job site. Ticket shall bear the following information:
   a. Design mix number.
   b. Signature or initials of ready mix representative.
   c. Time of batching.
   d. Weight of cement, aggregates, water and admixtures in each batch with maximum aggregate size.
   e. Total volume of concrete in each batch.
   f. Notation to indicate equipment was checked for contaminants prior to batching.
2. Pay the Testing Agency for taking core specimens of hardened structure and testing specimen according to ASTM C88 and C42 when laboratory tests of specimen cylinders show compressive strengths below specified minimum.

3.6 CLEANING, PATCHING AND DEFECTIVE WORK

A. Where concrete is under strength, out of line, level or plumb, or shows objectionable cracks, honeycombing, rock pockets, voids, spalling, exposed reinforcement, signs of freezing or is otherwise defective, and, in the City's and Structural Engineer’s judgment, these defects impair proper strength or appearance of the work, the City and Structural Engineer will require its removal and replacement at the Contractor's expense.

B. Immediately after stripping and before concrete is thoroughly dry, patch minor defects, form-tie holes, honeycombed areas, etc., with patching mortar. Patch shall match finish of adjacent surface unless otherwise noted. Remove ledges and bulges.

C. Compact mortar into place and neatly file defective surfaces to produce level, true planes. After initial set, dress surfaces of patches mechanically or manually to obtain same texture as surrounding surfaces.

D. Rock Pockets:
1. Cut out to full solid surface and form key.
2. Thoroughly wet before casting mortar.

3. Where the City and Structural Engineer deems rock pocket too large for satisfactory mortar patching as described, cut out defective section to solid surface, key and pack solid with concrete to produce firm bond and match adjacent surface.

E. Cleaning

1. Insure removal of bituminous materials, form release agents, bond breakers, curing compounds if permitted and other materials employed in work of concreting which would otherwise prevent proper application of sealants, liquid waterproofing, and other delayed finishes and treatments.

2. Where cleaning is required, take care not to damage surrounding surfaces or leave residue from cleaning agents.

3.7 PROTECTION

A. Protect concrete from injurious action of the elements and defacement of any nature during construction operations.

B. Protect exposed corners of concrete from traffic or use which will damage them in any way.

C. Make provisions to keep all exposed concrete free from laitance caused by spillage or leaking forms or other contaminants. Do not allow laitance to penetrate, stain, or harden on surfaces which have been textured.

D. Remove and replace pavement that does not comply with requirements in this Section.

E. Protect pavement from damage. Do not permit construction traffic on concrete pavement. Exclude other traffic from pavement for at least 28 days after placement.

F. Maintain pavement free of stains, discoloration, dirt, and other foreign material. Sweep pavement not more than two days before date scheduled for Substantial Completion inspections.

3.8 DEFECTIVE CONCRETE

A. If any concrete work is not formed as indicated, is under strength concrete, is concrete is out of line, level or plumb, or showing objectionable cracks, honeycomb, rock pockets, voids, spalling or exposed reinforcing, it shall be removed, repaired, or replaced as directed by the Project Inspector.

3.9 CLEANING

A. During construction, wash off work as quickly as possible when stains or splotches are unavoidable.

B. Upon completion, clean exposed surfaces carefully. Brushing and cleaning solution, if used, must be preceded and followed with a through rinsing of clear water. No sandblasting will be allowed to clean surfaces.

C. Remove from premises; equipment, debris and surplus material needed for, or resulting from, this work. Remove all concrete waste from planting areas and legally dispose of it.

D. All work shall be left in a condition satisfactory to the Project Inspector.

E. Perform Work under this Document to keep affected portions of building site neat, clean, and orderly. Remove, immediately upon completion of Work under this Section, surplus materials, rubbish, and equipment associated with or used in performance. Be aware that failure to perform clean-up operations within 24 hours of notice by City and Structural Engineer will be considered adequate grounds for having work done by others at no added expense to the Owner.

END OF SECTION

SECTION 04 03 23 - HISTORIC BRICK UNIT MASONRY REPOINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes historic treatment work consisting of repointing brick masonry as follows:

1. Repointing joints with mortar and sealant.
2. Widening joints.

B. Related Requirements:

1. Section 01 35 91 "Historic Treatment Procedures" for general historic treatment requirements.

1.3 ALLOWANCES

A. Preconstruction testing is part of testing and inspecting allowance.

1.4 DEFINITIONS

A. Low-Pressure Spray: 100 to 400 psi

1.5 PREINSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference on historic masonry repair and repointing at Project Site, or other location as agreed.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to masonry historic treatment and repointing.
2. Review methods and procedures related to repointing historic brick masonry, including, but not limited to, the following:

a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, sequencing, tolerances, and required clearances.
c. Quality-control program.
d. Fire-protection plan.
e. Unit masonry historic treatment program.

f. Coordination with building occupants.

1.6 SEQUENCING AND SCHEDULING

A. Conduct a mortar analysis to determine the historic mix to be matched.
   1. The sample of the historic mortar for the mortar analysis should be taken from an area not subject to weathering, i.e. concealed area within wall or attic.

B. Order sand, gray portland cement, and NHL based on results of mortar analysis for pointing mortar immediately after approval of samples and mockups. Take delivery of and store at Project site a sufficient quantity to complete Project.

C. Work Sequence: Perform masonry historic treatment work in the following sequence, which includes work specified in this and other Sections:

   1. Remove plant growth.
   2. Inspect masonry for open mortar joints and repair before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
   3. Remove paint.
   4. Clean masonry.
   5. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
   6. Repair masonry, including replacing existing masonry with new masonry materials.
   7. Rake out mortar from joints to be repointed.
   8. Point mortar and sealant joints.
   9. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
   10. Allow longer cure time for NHL pointing mortar prior to application of paints, coatings, or sealers, per mortar and coating manufacturer's recommendations - approximately 28-days and having a moisture reading less than 12%.

1.7 ACTION SUBMITTALS

A. Product Data: For each type of product.

   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
   2. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

   1. Include plans, elevations, sections, and locations of repointing work on the structure.
   2. Show provisions for expansion joints or other sealant joints.
   3. Show locations of scaffolding and points of scaffolding in contact with masonry. Include details of contact or anchorage.

C. Samples for Initial Selection: For the following:

1. Pointing Mortar: Submit sets of mortar for pointing in the form of sample mortar strips, 6 inches long by 1/2 inch wide, set in aluminum or plastic channels.

    a. Have each set contain a close color range of at least six Samples of different mixes of colored sands and cements that produce a mortar matching the existing, cleaned mortar when cured and dry.
    b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.

2. Sand Type Used for Pointing Mortar: Minimum 8 oz. of each in plastic screw-top jars.

    a. For blended sands, provide Samples of each component and blend. Identify blend ratio.
    b. Identify sources, both supplier and quarry, of each type of sand.

3. Sealant materials.
4. Include similar Samples of accessories involving color selection.

D. Samples for Verification: For the following:

1. Each type, color, and texture of pointing mortar in the form of sample mortar strips, 6 inches long by 1/2 inch wide, set in aluminum or plastic channels.

    a. Include with each Sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.

2. Sealant materials.
3. Accessories: Each type of anchor, accessory, and miscellaneous support.

1.8 INFORMATIONAL SUBMITTALS

1.9 Qualification Data: For historic treatment specialists including field supervisors and workers and testing service.

A. Preconstruction Test Reports: For existing masonry units and mortar.

B. Quality-control program.

C. Unit masonry historic treatment program.

1.10 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic masonry repointing specialist. Experience in pointing or repointing only new or nonhistoric masonry is insufficient experience for masonry historic treatment work.

B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use

materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.

C. Unit Masonry Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of historic treatment work, including protection of surrounding materials and Project site.

1. Include methods for keeping pointing mortar damp during curing period.
2. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Widening Joints: Widen a joint in two separate locations as directed.
2. Repointing: Rake out joints in two separate areas as indicated for each type of repointing required, and repoint one of the areas.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless the City specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Training in the use and mixing of NHL mortar by the NHL manufacturer is mandated. Manufacturer’s Representative to participate in mockup review.

1.11 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Owner will engage a qualified testing agency to perform preconstruction testing on masonry units as follows:

1. Provide test specimens as indicated and representative of proposed materials and existing construction.
2. Existing Mortar: Test according to ASTM C 295, modified as agreed by testing service and the City for Project requirements, to determine proportional composition of original ingredients, sizes and colors of aggregates, and approximate strength. Use X-ray diffraction, infrared spectroscopy, and differential thermal analysis to supplement microscopical methods. Carefully remove existing mortar from within joints at five locations designated by the City.
3. Temporary Patch: As directed by City Representative, provide temporary materials at locations from which existing samples were taken.

1.12 DELIVERY, STORAGE, AND HANDLING

A. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.

D. Store lime putty covered with water in sealed containers.

E. Store sand where grading and other required characteristics can be maintained and contamination avoided.

1.13 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repointing work to be performed according to product manufacturers' written instructions and specified requirements.

B. Temperature Limits, General: Repoint mortar joints only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.

C. Cold-Weather Requirements: Comply with the following procedures for mortar-joint pointing unless otherwise indicated:

1. When air temperature is below 40 deg F, heat mortar ingredients and existing masonry walls to produce temperatures between 40 and 120 deg F.
2. When mean daily air temperature is below 40 deg F, provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for seven days after pointing.

D. Hot-Weather Requirements: Protect mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F and above unless otherwise indicated.

E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Source Limitations: Obtain each type of material for repointing historic masonry from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 MORTAR MATERIALS

A. For use at brick at all facades. Allow colors and aggregates for each location and application:

1. Type NHL 3.5 mortar, as manufactured by Trans Mineral USA, mixed with the volumetric proportions determined by the mortar analysis.
2. Type N mortar, where appropriate to match mortar analysis
3. Use sand with size, color, and texture necessary to match existing original mortar. Sands should be well-graded, and ranging in particle size of 0.075mm to 5mm (passing #200 to #4 sieves, respectively). The amount of sand passing the #200 sieve should not exceed 2 percent.
4. NHL mortar benefits from higher workability. Achieve workability by additional mixing, rather than the addition of more water. Refer to manufacturer's printed instructions and manufacturer's representative.
5. Aggregates:

    a. Sand: ASTM C 144 to match color and texture of existing original mortar. Sand shall not contain more than 50 parts per million of chloride ions and shall be free of organic contaminants. Provide sand with rounded edges.
    b. Course Aggregates: ASTM C 404 with maximum size of 1/2 inch diameter. Aggregate shall not contain more than 50 parts per million of chloride ions and shall be free of organic contaminants.

6. Admixtures: No admixtures shall be used without prior written approval of the City.
7. Mortar Color: Shall be achieved by use of sands rather than pigments and shall match original cleaned mortar of each type at each type of brick masonry.
8. Mortar Pigments: Shall not be used unless mortar color match cannot be achieved with sands alone. Obtain approval for use of pigments by the City in writing.

    a. ASTM C 979/C 979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.

2.3 ACCESSORY MATERIALS

A. Sealant Materials:

1. Sealant manufacturer's standard elastomeric sealant(s) of base polymer and characteristics indicated below and according to applicable requirements in Section 07 92 00 "Joint Sealants."

    a. Type: Single-component, nonsag urethane sealant.

2. Colors: Provide colors of exposed sealants to match colors of mortar adjoining installed sealant unless otherwise indicated.
3. Ground-Mortar Aggregate: Custom crushed and ground pointing mortar sand or existing mortar retrieved from joints. Grind to a particle size that matches the adjacent mortar aggregate and color. Remove all fines passing the 100 sieve.

B. Joint-Sealant Backing:

1. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

2. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended in writing by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

C. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.

D. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:

1. Previous effectiveness in performing the work involved.
2. Minimal possibility of damaging exposed surfaces.
3. Consistency of each application.
4. Uniformity of the resulting overall appearance.
5. Do not use products or tools that could do the following:

a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in Contract.
b. Leave residue on surfaces.

2.4 MORTAR MIXES

A. Preparing Lime Putty: Slake quicklime and prepare lime putty according to appendix to ASTM C 5 and manufacturer's written instructions.

B. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.

C. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without the City's approval.

1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black, which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.

D. Do not use admixtures in mortar unless otherwise indicated.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Historic Treatment Specialist Firms: Subject to compliance with requirements.

3.2 PROTECTION

A. Prevent mortar from staining face of surrounding masonry and other surfaces.

1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
2. Keep wall area wet below rebuilding and pointing work to discourage mortar from adhering.
3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.

B. Remove gutters and downspouts and associated hardware adjacent to immediate work area and store during masonry repointing work. Reinstall when repointing is complete.

1. Provide temporary rain drainage during work to direct water away from building.

3.3 BRICKWORK REPOINTING, GENERAL

A. Appearance Standard: Repointed surfaces are to have a uniform appearance as viewed from 20 feet away by Preservation Architect.

3.4 REPOINTING BRICKWORK

A. Rake out and repoint joints to the following extent:

1. All joints in areas indicated.
2. Joints indicated as sealant-filled joints.
3. Joints at locations of the following defects:

a. Holes and missing mortar.
b. Cracks that can be penetrated 1/4 inch or more by a knife blade 0.027 inch thick.
c. Cracks 1/8 inch or more in width and of any depth.
d. Hollow-sounding joints when tapped by metal object.
e. Eroded surfaces 1/4 inch or more deep.
f. Deterioration to point that mortar can be easily removed by hand, without tools.
g. Joints filled with substances other than mortar.

B. Do not rake out and repoint joints where not required.

C. Rake out joints as follows, according to procedures demonstrated in approved mockup:

1. Remove mortar from joints to depth of 2 times joint width, but not less than 1/2 inch or not less than that required to expose sound, unweathered mortar. Do not remove unsound mortar more than 2 inches deep; consult Architect for direction.

2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
3. Do not spall edges of bricks or widen joints. Replace or patch damaged bricks as directed by City.

    a. Cut out mortar by hand with chisel and resilient mallet. Do not use power-operated grinders without City's written approval based on approved quality-control program.
    b. Cut out center of mortar bed joints using angle grinders with diamond-impregnated metal blades. Remove remaining mortar in bed joints and mortar in head joints by hand with chisel and resilient mallet. Strictly adhere to approved quality-control program.

D. Notify City of unforeseen detrimental conditions, including voids in mortar joints, cracks, loose bricks, rotted wood, rusted metal, and other deteriorated items.

E. Pointing with Mortar:

1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch until a uniform depth is formed. Fully compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than 3/8 inch. Fully compact each layer and allow it to become thumbprint hard before applying next layer. Where existing masonry units have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

    a. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
    b. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.

6. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Remove mortar and repoint.

F. Pointing with Sealant: Comply with Section 07 92 00 "Joint Sealants" and as follows:

1. After raking out, keep joints dry and free of mortar and debris.

2. Clean and prepare joint surfaces. Prime joint surfaces unless sealant manufacturer recommends against priming. Do not allow primer to spill or migrate onto adjoining surfaces.
3. Fill sealant joints with specified joint sealant:

    a. Install cylindrical sealant backing beneath the sealant. Where space is insufficient for cylindrical sealant backing, install bond-breaker tape.
    b. Install sealant using only proven installation techniques that ensure that sealant is deposited in a uniform, continuous ribbon, without gaps or air pockets, and with complete wetting of the joint bond surfaces equally on both sides. Fill joint flush with surrounding masonry and matching the contour of adjoining mortar joints.
    c. Install sealant as recommended in writing by sealant manufacturer but within the following general limitations, measured at the center (thin) section of the bead:

        1) Fill joints to a depth equal to joint width, but not more than 1/2 inch deep or less than 1/4 inch deep.

    d. Tool sealant to form smooth, uniform beads, slightly concave. Remove excess sealant from surfaces adjacent to joint.
    e. Sanded Joints: Immediately after first tooling, apply ground-mortar aggregate to sealant, gently pushing aggregate into the surface of sealant. Lightly retool sealant to form smooth, uniform beads, slightly concave. Remove excess sealant and aggregate from surfaces adjacent to joint.
    f. Do not allow sealant to overflow or spill onto adjoining surfaces, or to migrate into the voids of adjoining surfaces, particularly rough textures. Remove excess and spillage of sealant promptly as the work progresses. Clean adjoining surfaces by the means necessary to eliminate evidence of spillage, without damage to adjoining surfaces or finishes, as demonstrated in an approved mockup.

G. Where repointing work precedes cleaning of existing brickwork, allow mortar to harden at least 30 days before beginning cleaning work.

3.5 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray.

1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.

C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

D. Remove masking materials, leaving no residues that could trap dirt.

3.6 FIELD QUALITY CONTROL

A. Preservation Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities and assist the City’s representative at the site, including observing progress and quality of portion of the Work completed. Allow Preservation Architect's Project representatives use of scaffolding, as needed, to observe progress and quality of portion of the Work completed.

B. Notify Preservation Architect's Project representatives in advance of times when scaffolding will be relocated. Do not relocate scaffolding until inspectors and Preservation Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at scaffold location.

END OF SECTION 04 03 23

AWS welding symbols (distinguishing between shop and field welds), and in accordance with AISC standards. Include all dimensional and geometric information. Weld access hole dimensions shall be provided along with surface profile and finish requirements.

3. Shop and erection drawings shall include connection material specifications and sizes. Erection drawings shall indicate the locations of all slip-critical bolts.
4. Shop and erection drawings shall identify any non-destructive testing to be performed by the fabricator, if any.
5. Provide setting drawings, templates. and directions for installation of anchor bolts and other anchorage.
6. Erection drawings shall identify those joints, or groups of joints, in which a specific assembly order, welding sequence, or other special precautions are required.

B. Welding:

1. Welding Procedures: Submit written welding procedure specifications (WPS's) conforming with AWS D1.1 (and AISC 341 Appendix W if applicable) for review prior to performing any welding. Include an index of all WPS's and identify in the index whether the procedure will be used in the shop, field, or both. The WPS variables shall be within the parameters established by the filler-metal manufacturer. Filler metal manufacturer and manufacturer's electrode identification shall be considered essential variables and shall be identified on each WPS. Include electrode manufacturer's data sheet with each WPS showing recommended ranges and demonstrating that electrodes and electrode-flux combinations meet the requirements for H16 as tested in accordance with AWS A4.3. Do not include welding procedures that do not apply to welds on the project. Submittals containing welding procedures not intended for use on the project will be rejected.
2. Welding Procedure Qualification Records: Where WPS's are not prequalified by AWS D1.1, submit procedure qualification records with WPS's.

C. Manufacturer's Proofs of Compliance for Materials:

1. Certification that materials meet requirements specified. Steel must be identified by the mill using the appropriate ASTM designation. Certified manufacturer's mill analyses and test reports covering chemical and mechanical properties shall be submitted.
2. Steel not properly identified shall be tested to meet the minimum chemical and mechanical requirements of the ASTM standard appropriate for the steel specified.
3. Provide material test reports for bolts, nuts, washers, and shear connectors.

D. Samples: Provide as requested by the Owner's Testing Agency.

1.4 QUALITY ASSURANCE

A. All work shall conform to the 2022 California Building Code.

B. Fabricator and Erector shall have been regularly engaged at least 3 years in the fabrication and erection of structural steel.

C. A certified copy of the mill test on each heat of steel to be supplied shall be submitted to the Project Inspector and reviewed by the Testing Laboratory prior to fabrication. All steel must be identified and accompanied by a certified mill certificate, or testing will be required. The contractor will be responsible for the testing to determine mechanical properties of all structural steel lacking mill test certificates.

D. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Division 1 General Requirements of these Specifications.

1.5 PRODUCT DELIVERY STORAGE AND HANDLING

A. Delivery of materials to be installed under other Sections.

1. Anchor bolts and other anchorage devices which are embedded in cast-in-place, precast/tilt-up concrete, or masonry construction shall be delivered to the project site in time to be installed before the start of cast-in-place concrete or masonry work.
2. Provide setting drawings, templates, and directions for the installation of the anchor bolts and other devices.

B. Storage Materials:

1. Structural steel members which are stored at the project site shall be above ground on platforms, skids or other supports.
2. Steel shall be protected from corrosion.
3. Other materials shall be stored in a weather tight and dry place, until ready for use in the work.
4. Packaged materials shall be stored in their original unbroken package or container.

PART 2 − PRODUCTS

2.1 MATERIALS

A. Steel plates and miscellaneous metals shall conform to ASTM A36, Fy=36 ksi typical except where noted as ASTM A572, Fy=50 ksi.

B. Hollow Structural Steel and Tube Steel shall conform to ASTM A500, Grade B, Fy=46ksi.

C. Machine Bolts shall conform to ASTM A307 typical except where noted as ASTM A325-N, ASTM A325-X, ASTM A325-SC, or ASTM A490-X.

D. Threaded Rods shall conform to ASTM F1554, Grade A36 typical except where noted as ASTM A193, Grade B7 or ASTM A449.

E. Nuts and Washers

1. A307 Bolts and ASTM F1554 Threaded Rods – Nuts shall conform to ASTM A563, Grade A and Washers shall conform to ASTM F844.
2. A325 Bolts and ASTM A193 or ASTM A449 Threaded Rods – Nuts shall conform to ASTM A563 Grade DH and Washers shall conform to ASTM F436.
3. A490 Bolts – Nuts shall conform to ASTM A563 Grade DH and Washers shall conform to ASTM F436.

F. Welded Studs shall Nelson H4L welded studs conforming to ASTM A108 or approved equal.

G. Welding Electrodes shall be E70 series.

H. Primer conforming with Federal Specification TT-P-645A.

I. Hot dip and cold process galvanizing ASTM A123 and ASTM A780.

2.2 SOURCE QUALITY CONTROL

A. Testing Agency shall perform the following:

1. Review mill test certificates and verify that material to be supplied matches the mill certificates and complies with DSA requirements of CBC Section 2203A.1.
2. All steel must be identified and accompanied by a manufacturer's certified mill certificate, or testing will be required. The contractor will be responsible for the testing to determine mechanical properties of all structural steel lacking mill test certificates.
3. All bolts, nuts, washers, and treaded rods and other fasteners must be identified and accompanied by a manufacturer's certified mill certificate, or testing will be required. The contractor will be responsible for the testing to determine mechanical properties of all fasteners lacking mill test

certificates.

PART 3 − EXECUTION

3.1 INSPECTION

A. Survey the base structure before proceeding with erection foundations to support construction and verify the following:

1. Correct location and elevation of bearings and anchor bolts.
2. Absence of other conditions to adversely affect erection of steel.

B. Do not begin erection before corrective measures for unsatisfactory conditions have been agreed upon with the Architect, the corrective measures have been implemented, and the Erector is fully satisfied for correctness.

C. Survey the final erected structural steel frame prior to the application of any other work, reporting any discrepancies from the Contract Documents to the Architect.

3.2 PREPARATION

A. Provide column anchor rods, plate washers, and setting templates for setting anchor bolts as required. Provide 1/8 inch minimum steel plate setting templates for anchor bolts.

B. Supervise setting of anchor bolts and other embedded items required for erection of structural steel. Be responsible for correct bearing of steel and correct location of anchor bolts. Provide necessary shim plates, etc, for levelness.

3.3 ERECTION

A. General Requirements:

1. Erect structural steel in accordance with the CBC and the AISC Specifications for Structural Steel Buildings, and the AISC Code of Standard Practice for Steel Buildings and Bridges.
2. Protect all materials from corrosion and keep free of dirt, grease, and other foreign matter.
3. Ensure steel is plumb, level and in accurate alignment before making final connections.
4. Field corrections of major members will not be permitted without the Engineer's prior approval
5. Provide temporary shoring and bracing members with connections of sufficient strength and stiffness to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds. Structural frame is not

considered self-supporting until completion of structural work, including casting of concrete floor slabs.

B. Column Bases and Bearing Plates:

1. Attached Column Bases and Bearing Plates: Align with wedges or shims.
2. Loose Column Bases and Bearing Plates: Where too heavy to be placed without derrick or crane, set, wedge and shim.
3. Grouting: Grout in accordance with requirements of Concrete, Cast-In-Place Section.

C. Field Assembly:

1. Control all erection procedures and sequences including but not limited to temperature differentials and weld shrinkage.
2. Clean bearing surfaces and surface to be in permanent contact before assembling members.
3. Accurately assemble frames to lines and elevations indicated, within erection tolerances noted. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
4. Ensure assembly is plumb, level and aligned before final connecting.
5. Install all beams and girders with cambers up (except cantilevers).
6. Do not fasten splices of compression members before abutting surfaces comply with AISC bearing requirements.
7. Establish leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.
8. Promptly grout beneath column base plates after the structural steel frame or portion has been plumbed and before casting of any slab concrete on metal decks.

D. Bolting:

1. As erection progresses, bolt up work to take care of all dead loads, construction live loads, lateral and wind forces and erection stresses.
2. Unless otherwise noted, erection bolts used in welded construction may be either tightened securely and left in place or removed and the holes filled with plug welds.
3. High Strength Bolting:

    a. Shall be performed in accordance with AISC 360.
    b. Contact surfaces shall be free of oil, paint, lacquer or other coatings.
    c. Install hardened washers per AISC 360 and referenced standards.
    d. Tighten all nuts of slip critical connections using (1) properly calibrated wrenches, (2) by the "Turn-of-Nut" method, or (3) by

the use of a Direct Tension Indicator. Minimum bolt tension as per AISC 360 for each bolt size used. Check wrenches for accuracy of calibration at least once each day.

e. When slip critical bolts have been completely tightened, mark with identifying symbol.

f. Tighten nuts of bolts not designated as slip critical to snug tight condition and ensure all plys of connection are brought into snug contact.

D. Welding

1. Conform to AISC and AWS D1.1 for the details of joints, the technique of welding employed, the appearance and quality of welds made, and the methods used in correcting defective work.
2. Perform welding in accordance with a written WPS which has been reviewed. Provide welders and inspectors with reviewed WPS for the joint being welded.

a. Use equipment that supplies proper current, voltage, etc. and provide suitable meters and means of adjustment for current and voltage.

b. Clean surfaces for rust, paint, and foreign matter of any kind. Remove scale by wire brush, chipping or hammering as required. Before welding thermal cut edges, chip clean and grind to bright metal. Clamp members as required and space and alternate welds to prevent warping or misalignment.

c. For weld joint profiles, meet dimensional requirements and maximum tolerances specified by AWS D1.1 or as specified in approved PQR's. Correct joint fit-up that does not comply using approved procedures and obtain approval by the inspector before welding proceeds.

c. Ensure welds present a uniform surface, free of defects as defined by AWS, and without undercutting or overlapping and free of excessive oxides, gas pockets, and non-metallic inclusions. Make welds with the proper number of beads or passes to secure sound, thoroughly fused joints. Do not exceed maximum layer height and bead width specified in AWS
D1.1. Clean each pass by chipping and wire brushing to remove scale and slag before placing any additional weld material.

e. For highly restrained connections and/or welds, design the welding sequence to minimize distortion of the members and to minimize the buildup of internal stresses.

F. Temporary Bracing: Introduce wherever necessary to provide for all loads to which structure is subjected including erection equipment and its operation. Leave in place until no longer required for safety. Make proper provisions for construction loads, piles of materials, equipment, etc., carried by structural frame

during erection. Contractor shall be solely responsible for frame during erection.

G. Touch-Up Painting:

1. Immediately after steel erection, clean filed welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.
2. Apply by brush or spray to provide minimum dry film thickness of 1.5 mils.

3.4 CLEANUP

A. After erection thoroughly clean surface of foreign or deleterious matter such as dirt, mud, oil or grease that would impair bonding of fireproofing or concrete.

3.5 REPAIRS AND PROTECTION

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A780.

3.6 QUALITY CONTROL

A. The Owner's Testing Agency will test and inspect in accordance with the AISC requirements and as required, and as follows:

1. Bolting: High strength bolted connections shall be inspected and tested. The inspector shall check the materials, equipment, details of construction, and installation procedure. For slip-critical connections, check bolt tightness on not less than ten percent of bolts selected at random in each high strength bolt connection with a minimum of two bolts per connection. Connections that are not designated slip-critical need not be inspected for bolt tension other than to ensure that the plies of the connected elements have been brought into snug contact. Inspection procedure will be as described in AISC 360.
2. Welding Inspection: Visual inspection by a qualified welding inspector is required for all welding performed in the shop and field, including installation of automatic end-welded shear stud connectors. The minimum requirements for a qualified welding inspector are those for an AWS associate welding inspector (AWI) or senior welding inspector (SWI), as defined in the provisions of AWS B5.1 Standard Qualification of Welding Inspectors, except AWIs may be used under the direct supervision of WIs, on site and available when weld inspection is being conducted. In addition to inspecting the welds, the welding inspector shall check the material (certificates of compliance), welding equipment, details of construction (including fit-up), welder qualifications (Verify welder certifications are valid for process, position, and thickness to be welded), storage of electrodes, and adherence to the WPS. The welding inspector shall

maintain a record of welds inspected, name of welder who performed weld, defects found, and disposition of each defect. Defective welds shall be repaired and the cost of restoring defective welds shall be borne by the contractor.

3. Inspection and Test Reports: The inspector shall furnish the architect, structural engineer, and building official with a report stating that the work has been completed in compliance with AWS 01.1 and the approved project plans and specifications.

B. The Contractor shall:

1. Make no extra charge for any handling of steel required for complete four-sided inspections of members at Engineer's request. It is not anticipated that a complete four-sided inspection of all members will be undertaken. Such inspection will be necessary in case of dispute or uncertainty regarding adherence to Drawings and Specifications.
2. Repair defective welds or flaws, lamellar tearing, and replace defective studs.
3. Pay for retesting of repaired defective welds flaws and studs.
4. Cooperate to the fullest extent to accommodate inspection agency personnel with the on-site testing and inspection procedures.
5. Assume full responsibility and pay for all corrective work.

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 − GENERAL

1.1 SUMMARY

A. This Section includes all labor, materials, equipment, operations, or methods listed, mentioned or scheduled on the plans and/or herein specified, including all incidentals necessary and required for completion of work under this Section.

B. Provide and install rough carpentry work shown on the project Drawings, including but not limited to:

1. Wood framing, sheathing, blocking, furring, nailers, backing panels for utilities, miscellaneous wood, connectors and hardware.

1.2 RELATED SECTIONS

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Special Conditions and Division 1 of these Contract Documents.

B. Document 05 12 00, Structural Steel

1.3 SUBMITTALS

A. Comply with provisions of City Standard Specification, Submittal Procedures.

1.4 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 − PRODUCTS

2.1 MATERIALS

A. Dimension Lumber: surfaced 4 sides, 19% maximum moisture content, manufactured and graded per WWPA grading rules and all pieces grade stamped:

1. Joists, Rafters, Beams, Headers: up to 3x Cedar No 2, 4x Cedar No 1
2. Architectural Trims: Cedar No 2

B. Sheathing

1. Shall be minimum 3/4” marine grade plywood type rated Sturd-1-Floor, Premium ”B” grade veneer with exterior waterproof glue (Exposure 1), span rating 24” on center, species Group 2 or better.

C. Wood Treatment

1. Treat all above ground wood exposed to deterioration by moisture and all wood in contact with concrete, the ground, or fresh water.
2. Lumber, Timbers, Bridge and Mine Ties in ground contact, concrete contact, exposed to moisture or fresh water - Preservative treatment: Pressure-treated with waterborne preservatives, to comply with AWPA Pressure treating standard C2. Minimum net retention shall be .4 pounds per cubic feet.
3. Pressure-treated lumber to bear approved quality mark by an accredited ALSC third party inspection agency to assure treatment is in conformance with appropriate AWPA standards.
4. Handling, fabrication, field treating and disposal of cutoffs shall be in conformance with AWPA M4. Field treat with Copper Naphthenate solution with preservative concentration of no less than 2% copper metal.
5. Kiln dry after treatment to 19% maximum moisture content for lumber, and 15% for plywood.
6. Precautions for wood preservatives and treatment:
    a. Post “Consumer Information Sheet: and “Material Safety Data Sheet: as required by California Proposition 65.
    b. Store treated lumber and plywood only within a secure fenced area.
    c. Take all possible steps to prevent unlawful use or disposal. Take all possible steps to insure that treated wood scraps are not burned.
    d. Build an approved “Dip Tank” for flood coating and treating cut ends of wood members.
    e. Keep wood preservative and dip tank in a cool and ventilated locked enclosure when not in use.

D. Fasteners

1. All nailing for structural work shall be in conformance with CBC Table 23-II-B-1 - Nailing Schedule. All nails exposed to earth, pressure treated lumber or weather shall be hot dipped galvanized or shall be of stainless steel.
2. Pneumatically driven nails will be allowed only upon submission of ICBO reports approving the nails for the use intended and with an equivalent load capacity as for the common wire nail specified. Pneumatically driven nails shall be driven flush with the surface of the wood.
3. All machine bolts shall conform to the requirements of ASTM Standard A 307, Grade A. All machine bolts, nuts and washers exposed to earth, pressure treated lumber or weather in the completed structure shall be hot dipped galvanized.
4. Bolts shall be installed with cut washers under the heads and/or nuts where the head or nut would otherwise bear on the wood.
5. All connectors and fasteners exposed to earth, pressure treated lumber or weather in the completed structure or treated lumber shall be hot dip galvanized after fabrication or Type 304 and 316 stainless steel. Never mix galvanized steel with stainless steel in the same connection to prevent physical contact of dissimilar metals.

E. Metal Framing Devices

1. Proprietary framing devices - Manufactured by Simpson Strong-Tie Company or approved equal, installed in conformance with the manufacturer's specifications. All specified fasteners must be installed. All such fasteners shall be of the largest size and quantity specified in the manufacturers published schedules, unless noted otherwise. All connectors and fasteners exposed to weather shall be hot dip galvanized after fabrication.
2. Fabricated Metal Devices: per Document 05 12 00, Structural Steel.

PART 3 − EXECUTION

3.1 INSTALLATION

A. Construction methods and project safety: the contract documents represent the finished structure and do not indicate methods, procedures or sequence of construction. Take necessary precautions to maintain and ensure the integrity of the structure during construction. Contractor shall design, construct and maintain all safety devices, including shoring and bracing, and solely responsible for conforming to all local, state and federal safety and health standards, laws and regulations.

B. Wood framing: Comply with recommendations of CBC Chapter 23, Division IV – Conventional Light Frame Construction, and NDS National Design Specifications for Wood Construction.

C. Plywood: Comply with recommendations of APA Design and Construction Guide - Residential and Commercial. Space panel ends and edges with 1/8” minimum gap. Where wet or humid conditions prevail, double this spacing.

D. Provide nailers, blocking and grounds where required. Set work plumb, level and accurately cut. Fire and draft blocks shall be as specified per CBC Section 708.

E. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with other work.

F. Comply with manufacturer's requirements for cutting, handling, fastening and working with treated materials.

END OF SECTION

SECTION 06 40 13 - EXTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Shop Drawings.

B. Quality Standard: AWI, AWMAC, and WI's "Architectural Woodwork Standards."

C. Forest Certification: Provide woodwork produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lumber: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.

B. Softwood Plywood: DOC PS 1.

C. Preservative Treatment: Comply with WDMA I.S.4 for items indicated to receive water-repellent preservative treatment.

D. Fasteners for Exterior Woodwork:

1. Nails: hot-dip galvanized or stainless steel.
2. Screws: hot-dip galvanized or stainless steel.

2.2 EXTERIOR FINISH CARPENTRY

A. Exterior Lumber Trim: Smooth-textured, Clear All Heart redwood, or Clear yellow cedar.

1. Maximum Moisture Content: 15 percent.

B. Complete fabrication to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

C. Backout or groove backs of flat trim members and kerf backs of other wide, flat members, except for members with ends exposed in finished work.

D. Exterior Standing and Running Trim: Made from all heart redwood or yellow cedar.

E. Exterior Ornamental Work: Made from yellow cedar or all heart redwood.

F. Shop prime woodwork for opaque finish with one coat of specified wood primer.

G. Backprime with one coat of sealer or primer, compatible with finish coats. Apply two coats to surfaces installed in contact with concrete or masonry and to end-grain surfaces.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install woodwork to comply with referenced quality standard for grade specified.

B. Install woodwork true and straight with no distortions. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.

C. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

D. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Fasten with countersunk concealed fasteners and blind nailing. Use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork.

E. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 36 inches long, except where shorter single-length pieces are necessary. Scarf running joints and stagger in adjacent and related members.

END OF SECTION

SECTION 064085 - WOOD RESTORATION AND REHABILITATION

PART 1 - GENERAL

1.1 SUMMARY

A. Principal Work in this Section: Clean, refinish, and restore woodwork. The Work includes:
   1. Cleaning of items as directed.
   2. Cleaning and refinishing of items as directed.
   3. Repair damage; fill holes and losses; replace missing elements.
   4. Re-finish woodwork to match existing.
   5. The work described applies to items noted on the drawings or per direction, such as window, and door trim.

B. Present Condition:
   1. Locations of existing woodwork are noted on Drawings. The Drawings do not, however, fully describe the condition or extent of damage of each individual wood artifact. Contractor is responsible for field verifying, repairing, and refinishing all woodwork to remain or be reinstalled. Contractor to inspect site conditions as well as woodwork held in storage prior to bidding.

C. Related Sections: Documents affecting the work of this Section include, but are not necessarily limited to, the Sections listed below:
   1. Section 06 10 00 Rough Carpentry
   2. Section 06 40 13 Exterior Architectural Woodwork
   3. Section 09 91 00 Painting
   4. Section 09 91 10 Preparation of Historic Wood and Metal Surfaces for Painting

1.2 QUALITY ASSURANCE

A. Restoration Specialist: Contractor shall have not less than ten (10) years successful experience in comparable woodworking, and wood restoration. Employees assigned to the Work must be skilled in the processes, and operations indicated.

B. Codes and Standards:
   1. Adhere to applicable local, State and Federal laws, and requirements.
   2. Contractor to require observance of applicable federal and state agency, industry, and manufacturer recommended safety regulations, and precautions.

C. Performance Standards: Work shall match and blend seamlessly, and unobtrusively with adjacent finishes.

D. Mock-ups: Contractor to prepare mock-up of repair and refinishing for each material required:
   1. Location and size of mock-ups to be determined by approved mock-up proposal.
   2. Mock-ups to demonstrate the full range of work required for each material. Provide multiple mock-ups where necessary to demonstrate the range of work.
   3. Mock-ups to test multiple stain colors or finishes, as directed by Owner.
   4. Contractor to consult with manufacturer's field representative prior to coating mock-up.
   5. Contractor to photograph before and after conditions, and document procedures and products used (see Submittals).
   6. Completed and approved mock-ups shall serve as the minimum standard by which all subsequent work in this Section will be judged. Conformance with mock-ups, however, does not relieve the Contractor of responsibility for insuring that field production matches and blends seamlessly, and unobtrusively with existing.
   7. Approved mock-ups shall be retained and protected for the duration of the work.

8. Do not begin work until mock-ups are approved by Owner.

1.3 SUBMITTALS

A. Statement of Qualifications: List of recently completed projects including project name, location, name of Owner, and description of work and products used. Certification that contractor/applicator is experienced in the application of the specified products.

B. Product Data: Provide manufacturer's current product data sheets on all products to be used for the Work.

C. Removals Plan: Submit removals plan complying with requirements stipulated in Section 024291.

D. Protection Plan: Describe methods for protecting surrounding areas, surfaces, and personnel during the work from contact with strippers, stains, coatings, or other potential sources of damage.

E. Schedule of Work: Submit schedule of work, including all required mock-ups, submittals, and execution steps.

F. Mock-up Proposal: Submit detailed proposal for mock-ups indicating locations and physical extent of mock-ups, proposed restoration and cleaning techniques, and proposed products.

G. Mock-up Documentation Submittals: Contractor shall document, in writing, the procedures used in the preparation of the mockups. This documentation will include the following information:
   1. Cleaning, staining and/or refinishing materials used including concentrations, number of applications, surface preparation method, order, and duration of applications.
   2. Equipment used.
   3. Accessory materials used.
   4. Waste disposal requirements.
   5. Photographs: Contractor to provide digital photographs documenting "before" and "after" conditions. Provide close-up detail photographs, as well as overall views.

H. Samples: Samples of replacement wood described in this Section will be required for approval before proceeding with the remainder of the Work. Samples to have specified finish.

I. Shop Drawings: Shop drawings for all newly fabricated wood and for existing elements to be removed and installed, indicating dimensions, and details of attachment.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packages with labels clearly identifying product name and manufacturer.

B. Storage and Handling: Store containers upright in a cool, dry, well-ventilated place, out of the sun. Store away from all other chemicals and potential sources of contamination. Keep lights, fire, sparks, and heat away from containers. Do not drop onto or slide across sharp object. Keep containers tightly closed when not in use. Store and handle materials in accordance with manufacturer's instructions.

1.5 JOB CONDITIONS

A. Risks: It should be noted that there are inherent risks and health hazards involved with the use of wood finishing chemicals. It will be the responsibility of the Contractor to ensure that safety precautions are taken, that respirators with chemical cartridge filters meeting NIOSH and MSHA regulations TC23C are worn when appropriate, as well as solvent resistant gloves and aprons. It shall also be the responsibility of the Contractor to inform all personnel of the risks involved in the work and to make available to them the Material Safety Data Sheets for all products in use, per OSHA regulations.

B. Historic Building-Required Care:
   1. Building materials and components shall be considered very fragile and must be dismantled, removed, worked-on, and transported, and in general, handled with special care.
   2. Costs of such repair and restoration may be significant and shall be borne by Contractor.
   3. Protection of existing materials, surfaces, and finishes is of great importance.

C. Environmental Conditions:
   1. Surface and air temperatures must be a minimum of 40 degrees F.
   2. Area to be properly ventilated.
   3. Work area to be protected from pedestrians.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Materials shall conform to the following requirements and shall be new, of the highest grade, free from defects, and of recent manufacture. Alternate materials and procedures are to be used only with the approval of Owner and are to match performance sample.

B. Glue: Acceptable glues for the restoration of the woodwork include aliphatic emulsion, casein glue, polyvinyl acetate (PVA) emulsion, and synthetic joinery grade glues.

C. TSP: Tri-sodium phosphate, any name brand.

D. Paint and Varnish Remover: Should be proven effective in removing all existing finish. Citristrip, non-methylene chloride based stripper from Wm. Barr Branded Sales (800/235-3546).. "Nu-Tec" stripper from Nu-Tec Ind. Chew Mfg. Inc. / Bay City, Michigan 48706; "Master Strip extra thick," distributed by McBride Chemical, Glendale, CA, or equal. Caustic Soda-based removers not permitted.

E. Filler: Filler acceptable for use include "Jasco," "Mohawk" or Ren-Weld carvable wood epoxy, Liquid Wood® or Wood Epox® by Abatron, Inc., or other filler capable of being color matched to wood surface color.

F. New or Replacement Materials: Missing or reproduced parts and components must be fabricated of dried lumber of correct moisture content. Match wood genus and species with lumber cut in matching grain and pattern for each type of wood artifact.

G. Tools: Tools required include both soft and stiff bristle brushes, copper or steel bristle brushes, medium and fine steel wool, medium and fine sandpaper, syringes, spatulas, screwdrivers, pry bars, respiratory protection masks with chemical cartridges meeting NIOSH and MSHA regulations TC23C, cotton rags, alcohol heat lamp with small burn-in knife, chisels, and solvent proof gloves, and other tools as deemed necessary by the Contractor.

PART 3 - EXECUTION

3.1 GENERAL

A. Contractor shall note that the wood elements are old, valuable, and inherently fragile. Great care must be exercised throughout all phases of this Work to protect woodwork, as well as adjacent walls and floors.

B. On-Site Work: Where items of historic fabric are to be renovated on-site, work to be executed in clean, well-ventilated work area, protected from other areas of the project.

C. Off-Site Work: Where items are to be renovated off-site, follow requirements of Section 024291, "Removal and Salvage of Historic Construction Materials."

D. Preparation:
   1. Remove all nails, screws, or other protruding objects.
   2. Remove all signs or other extraneous objects. Label and store as directed by Owner.

3.2 TREATMENT PROCESS

A. Removal of Previous Finishes and Refinishing:
   1. Remove all finishes and stain from surface by applying chemical stripper, per manufacturer's printed instructions. Remove residue of strippers, varnish, and stain from surface using medium coarse steel wool and flexible spatula.
   2. Neutralize stripped surface with TSP/water mixture using nylon brush.
   3. Allow the newly stripped surfaces to dry at least 24 hours before starting the sanding process.
   4. Sand all surfaces using 100 grit garnet sandpaper and then 220 grit garnet sandpaper. All sanding shall be done with the grain of the wood. Cross grain sanding is not acceptable. Dust surfaces with a soft bristle brush and then lightly wipe surfaces with a tack cloth.
   5. Repair any wood damage per Article 3.4, "Wood Repair."
   6. Brush-on stain with soft bristle brush, allow to dry 30 minutes or as recommended by manufacturer, and then wipe off excess. Follow manufacturer's printed directions.
   7. Allow surface to dry thoroughly for 12 hours.
   8. Apply the first coat of primer to surfaces, and allow to dry for 24 hours.
   9. Lightly sand primed surfaces using 220 grit sandpaper, and wipe with a tack cloth.
   10. Apply the finish coats of paint.

3.3 REMOVAL OF EXISTING FINISH

A. Removal of existing finish for wood surfaces:
   1. All exposed surfaces shall be inspected for foreign material such as thick paint, chewing gum or other thick deposits. Any such material shall be removed mechanically with hand scrapping, no machine sanding allowed.
   2. Stripping shall be carried out in a controlled manner. In situ work shall be masked and protected to ensure that adjacent surfaces are not marred or damaged by the treatment of the woodwork.
   3. Strippers shall be used in accordance with manufacturer's directions.

3.4 WOOD REPAIR

A. Procedures:
   1. See related Sections for wood repair.

3.5 REFINISHING OF WOODWORK

A. General:

1. It is the aim of this treatment that all woodwork be given a consistent treatment with materials and procedures to ensure a uniform final appearance which matches approved field sample. Any deviation from specified materials or procedures must be approved by Owner.
2. All materials and procedures used must conform to all pertinent regulations. It shall be the responsibility of the Contractor to identify all applicable regulations and to guarantee that all materials and procedures are in accordance with said regulations.
3. It shall be the responsibility of Contractor to test materials and procedures called for in specifications to guarantee that all necessary steps are taken, that stripping compounds are adequately neutralized, that proper application and drying times are observed, that there are no inherent chemical incompatibilities with the materials called for, and that both the conditions and the procedures are appropriate for completion of Work.
4. All work shall be protected and kept clean during the finishing process to guarantee a finish of the highest quality. Only a finish of uniform color matching the performance sample and a smooth finish free of dust, pinholes, drips or sag marks will be accepted.
5. All work must be protected following the finishing operations. In situ work must be covered with plastic or brown paper during other procedures in those spaces to prevent drips, spills, or other accidents.

B. Procedure:
1. Surface appearance should be smooth and even. Sanding of surfaces with at least 220 grit garnet paper should be carried out. Any black iron marks should be removed with oxalic acid, followed by neutralizing with borax, alternatively surfaces may be washed with non-malt vinegar.
2. Grain shall be filled as follows only where larger than 1/16". Thin the paste wood filler as necessary with paint thinner. Apply with a brush, working it into the grain, brushing with the grain. Let the filler set up for a few minutes, per manufacturer's instructions, then wipe off the excess, rubbing across the grain. Allow filler to dry for at least 48 hours. Lightly fine sand before proceeding.
3. Prior to finishing, all woodwork shall be protected from grease, oil, or finger marks. A final inspection shall be carried out to verify that all fills are level and smooth surfaces shall be lightly fine sanded, and wiped with a solvent to clean them, if necessary.
4. Application of the Finish:
   a. For in situ work, all adjacent surfaces must be masked and protected from brush marks, spills, and runs.
   b. Personnel to wear solvent resistant gloves and respiratory masks with chemical cartridge filters.
   c. All work is to be delivered with a smooth finish free of dust marks and scratches.

END SECTION

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data**,** Samples, and ICC-ES evaluation reports.

B. Warranties: Provide standard manufacturer's written warranty, signed by manufacturer agreeing to promptly repair or replace asphalt shingles that fail in materials within 30 years from date of Substantial Completion, prorated, with first three years nonprorated.

PART 2 - PRODUCTS

2.1 ASPHALT SHINGLES

A. Fire-Resistance Characteristics: ASTM E 108 or UL 790, Class A. Identify products with appropriate markings of testing and inspecting agency acceptable to authorities having jurisdiction.

B. Fiberglass Shingles: ASTM D 3462.

1. Multitab-Strip Asphalt Shingles: Mineral-granule surfaced and self-sealing. Four tabs, regularly spaced with straight cut butt edge.

a. Manufacturers: One of the following:

1) CertainTeed Corporation.
2) GAF Materials Corporation.
3) Elk Premium Building Products, Inc.; an ElkCorp company.
4) Or Approved Equal.

2. Color: Manufacturer’s best match to weathered cedar shingles.

2.2 ACCESSORIES

A. Self-Adhering Sheet Underlayment: ASTM D 1970, SBS-modified asphalt; mineral-granule or slip-resisting-polyethylene surfaced; with release paper backing; cold applied.

B. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

C. Roofing Nails: Stainless-steel, or hot-dip galvanized-steel shingle nails, minimum 0.120-inch (3-mm) diameter, of sufficient length to penetrate 3/4 inch (19 mm) into solid wood decking or extend at least 1/8 inch (3 mm) through OSB or plywood sheathing.

D. Sheet Metal Flashing and Trim: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

1. Sheet Metal: Zinc-tin alloy-coated steel.
2. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual."
3. Drip Edge: Formed sheet metal with at least a 2-inch (50-mm) roof deck flange and a 1-1/2-inch (38-mm) fascia flange with a 3/8-inch (9.6-mm) drip at lower edge.
4. Open-Valley Flashing: Fabricate with 1-inch- (25-mm-) high, inverted-V profile at center of valley and equal flange widths of **10 inches (250 mm)**

2.3 INSTALLATION

A. Comply with recommendations in ARMA's "Residential Asphalt Roofing Manual" and with asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

B. Apply self-adhering sheet underlayment at eaves and rakes from edges of roof to at least 24 inches (600 mm) inside exterior wall line.

C. Apply self-adhering sheet underlayment at valleys extending 18 inches (450 mm) on each side.

D. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment.

E. Install valleys complying with NRCA instructions. Construct sheet metal open valleys.

F. Install metal flashings to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim" and according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

G. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with 5-inch (125-mm) 1/2-tab offset pattern at succeeding courses, maintaining uniform exposure.

END OF SECTION 073113

SECTION 073129 - WOOD SHINGLES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data**,** Samples, and ICC-ES evaluation reports.

PART 2 - PRODUCTS

2.1 SHINGLES

A. Fire-Test-Exposure Classification: Class B; UL 790 or ASTM E 108 with ASTM D 2898, for application and existing roof slopes indicated.

B. Grading Standard for Wood Shingles: CSSB's "Grading Rules for Certigrade Red Cedar Shingles."

C. Cedar Roof Shingles: No. 1 grade, smooth sawn, 16 inches (405 mm) long; 0.40 inch (10 mm) thick at butt, fire-retardant treated.

1. Manufacturers:

a. Cedar Valley Shingle Systems, Inc.
b. Shakertown 1992, Inc.
c. Or Approved Equal.

2. Butt Style: Straight line.

2.2 ACCESSORIES

A. Gypsum based rated roof sheathing:

1. Manufacturers: One of the following:
a. CertainTeed Corporation
b. Georgia Pacific
c. National Gypsum
d. US Gypsum

B. Self-Adhering Sheet Underlayment: ASTM D 1970, SBS-modified asphalt; mineral-granule or slip-resisting-polyethylene surfaced; with release paper backing; cold applied.

1. Manufacturers: One of the following:

a. ALCO-NVC Inc.
b. Atlas Roofing Corporation.

c. Carlisle Coatings & Waterproofing, Inc.
d. CertainTeed Corporation.
e. GAF Materials Corporation.
f. Henry Company.
g. IKO.
h. Johns Manville.
i. Owens Corning.

C. Flexible Ridge Vent: Compression-resisting, three-dimensional, open-nylon or polyester-mat filter bonded to a nonwoven, nonwicking, geotextile fabric cover.

1. Manufacturers: One of the following:

a. GAF Materials Corporation.
b. Keene Building Products.
c. Obdyke, Benjamin Incorporated.
d. TAMKO Roofing Products, Inc.

D. Roofing Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel nails, of sufficient length to penetrate 3/4 inch (19 mm) into sheathing.

1. Use shingle-type nails for wood shingles.
2. Where nails are in contact with metal flashing, use nails made from metal specified in Section 076200 "Sheet Metal Flashing and Trim" for fastening metal flashing.

E. Sheet Metal Flashing and Trim: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

1. Sheet Metal: Zinc-tin alloy-coated steel.
2. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual."
3. Drip Edge: Formed sheet metal with at least a 2-inch (50-mm) roof deck flange and a 1-1/2-inch (38-mm) fascia flange with a 3/8-inch (9.6-mm) drip at lower edge.
4. Open-Valley Flashing: Fabricate with 1-inch- (25-mm-) high, inverted-V profile at center of valley and equal flange widths of 10 inches (250 mm)

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install rated gypsum board roof sheathing over existing plywood wood sheathing which will be the basis for the required Class A roof assembly with wood shingle roofing.

B. Apply self-adhering sheet underlayment at eaves and rakes from edges of roof to at least 36 inches (914 mm) inside exterior wall line.

C. Install single-layer felt underlayment on roof deck not covered by self-adhering sheet underlayment.

D. Install metal flashings and other sheet metal to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

E. Install ventilation mat over roofing felt and self-adhering sheet underlayment, held in place per manufacturer's recommendations.

F. Install wood-shingle roofing according to manufacturer's written instructions and to recommendations in CSSB's "New Roof Construction Manual" and NRCA's "The NRCA Roofing and Waterproofing Manual."

G. Apply self-adhering sheet underlayment at eaves and rakes from edges of roof to at least 24 inches (600 mm) inside exterior wall line.

H. Apply self-adhering sheet underlayment at valleys extending 18 inches (450 mm) on each side.

I. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment.

J. Install valleys complying with NRCA instructions. Construct sheet metal open valleys.

K. Install metal flashings to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim" and according to recommendations in CSSB's "New Roof Construction Manual" and cedar shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

END OF SECTION 073129

SECTION 07 46 00 - DRAINAGE AND VENTILATION MAT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Drainage and Ventilation Mat.

1.2 RELATED SECTIONS

A. Section 07 31 29 – Wood Shingles and Shakes

1.3 REFERENCES

ASTM C 165-00: Standard Test Method for Measuring Compressive Properties of Thermal Insulations
ASTM D 6818: Standard Test Method for Ultimate Tensile Properties of Rolled Erosion Control Products
ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials

1.4 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 2 years production of similar products.

B. Installer Qualifications: Experience with installation of similar products.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

1. Product indicated on Drawings or a comparable product of one of the following:

A. Acceptable Manufacturers:
   1. Benjamin Obdyke Incorporated; 400 Babylon Road, Suite A · Horsham, PA 19044 · Toll Free: (877) 647-8368 · Fax: (215) 672-5204; Sales: (800) 523-5261· Fax: (215) 672-3731; Web: www.benjaminobdyke.com
   2. Keene Building Products; PO Box 241353, Mayfield Heights, Ohio 44124. Toll Free Tel: (877) 514-5336, Tel: (440) 605-1020. Fax: (440) 605-1120. Email: info@keeneBuilding.com. Web: https://www.keenebuilding.com.
   3. Or Approved Equal

2.2 DRAINAGE AND VENTILATION MAT

A. Drainage and Ventilation Mat: Randomly oriented geometric patterned drainage and ventilation mat designed to eliminate moisture and moisture vapor in wood roofing applications.

B. Product
1. Physical Characteristics:
a. 0.277 inches (7.04 mm) to 0.30 inches (7.6 mm) thick.
b. 9.9 oz/sq. yd. (336 g/sq m) total weight.
c. 39.37 inches (1m) to 48 inches (122 cm) wide.
d. 60 feet (18.3 m) to 61.5 feet (18.75 m) roll length.
2. Performance:
a. Drainage of liquid moisture and ventilation between sheathing and exterior veneer.
3. Material: UV stabilized nylon.
a. Class-A flame spread per ASTM E84.
b. Hydrophobic compound.
c. Resistant to chemicals.
d. Does not support mold growth.

2.3 ACCESSORIES

A. Provide waterproofing membrane, flashing and fasteners required for a complete functional drainage assembly.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 DRAINAGE MAT INSTALLATION

A. Cedar Shingle Installation
a. Inspect decking for installation for rated assembly installation
b. Install 30lb (14kg) roofing felt over entire roof deck. Extend felt 1/4" (6.4mm) beyond edge of roof deck. Overlap layers at least 4” (102mm) working toward the ridge.
c. Tack down underlayment with 1 tack (or nail) approximately every 3 square feet.
d. Install underlayment with dimples down to present the flat side as the nailing surface.

e. Butt each course of underlayment against previous course. Do not overlap layers of underlayment.
f. Work from fascia to ridge while installing shingles to avoid walking directly on underlayment.
g. Install cedar shingles per manufacturer's instructions. Use a nail of sufficient length to allow for ¾" (19.1mm) penetration into sheathing. Allow 1/4" (6.4mm) for underlayment thickness.

END OF SECTION

SECTION 075200 - MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Shop Drawings of tapered insulation and ICC-ES evaluation reports for components of membrane roofing system.

B. Warranties: Manufacturer's standard or customized form, without monetary limitation, signed by roofing manufacturer agreeing to repair leaks due to defects in materials or workmanship for period of 30 years.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Energy Performance: Initial Solar Reflectance not less than 0.70 and Thermal Emittance not less than 0.75 when tested according to CRRC-1.

B. Solar Reflectance Index: Not less than 78 when calculated according to ASTM E 1980.

C. Exterior Fire-Test Exposure: ASTM E 108, Class A.

2.2 ROOFING MATERIALS

A. SBS-Modified Bituminous Membrane Roofing:

1. Manufacturers: One of the following:
   a. CertainTeed Corp.
   b. Firestone Building Products.
   c. GAF Materials Corporation.
   d. Johns Manville.
   e. TAMKO Building Products, Inc.
   f. Tremco Incorporated.
   g. Or Approved Equal.

B. Roofing Membrane Sheet: ASTM D 6162, Grade S, Type I or II, SBS-modified asphalt sheet (reinforced with a combination of polyester fabric and glass fibers); smooth surfaced.

C. Granule-Surface Roofing Membrane Cap Sheet: ASTM D 6162, Grade G, Type I or II, SBS-modified asphalt sheet (reinforced with a combination of polyester fabric and glass fibers); granular surfaced.

D. Base Sheet: ASTM D 4601, Type II, SBS-modified, asphalt-impregnated and -coated, glass-fiber-reinforced sheet.

E. Glass-Fiber Base-Ply Sheet: ASTM D 2178, Type IV, asphalt-impregnated, glass-fiber felt.

F. Auxiliary Materials: Recommended by roofing system manufacturer for intended use and as follows:
1. Base Flashing: Manufacturer's standard SBS-modified bituminous sheet, mineral-granule surfaced.
2. Roofing Asphalt: ASTM D 312, Type IV.
3. Skid-resistant roof protection pads: Manufacturer's standard for maintenance paths.

2.3 ROOFING INSULATION

A. Fabricate tapered insulation with slope of 1/4 inch per 12 inches (1:48) unless otherwise indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install substrate board with long joints continuous and perpendicular to roof slopes with end joints staggered. Tightly butt substrate boards together.

B. Install each layer of insulation in a solid mopping of hot asphalt. Prime surface of concrete deck with asphalt primer allow primer to dry before mopping in and applying first layer.

C. Mechanically fasten each layer of insulation with at least one fastener for each 4 sq. ft. (0.38 sq. m) and at least two fasteners per board.

D. Install cover boards over insulation with long joints continuous and perpendicular to roof slopes with end joints staggered. Loosely butt cover boards together and fasten to deck.

E. Install and secure cant strips and nailer strips.

F. Install roofing membrane system according to roofing system manufacturer's written instructions, applicable recommendations in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing," and as follows:

1. Deck Type: N (nailable).
2. Adhering Method: M (mopped).
3. Base Sheet: One.
4. Number of Glass-Fiber Base-Ply Sheets: One.
5. Number of SBS-Modified Asphalt Sheets: **Two**.
6. Surfacing Type: M (mineral-granule-surfaced cap sheet).

G. Maintain uniform side and staggered end laps. Bond and seal laps, leaving no voids.

H. Flashing: Extend 8 inches (200 mm) above roof and 4 inches (100 mm) onto roof and secure to substrate.

I. Skid-resistant roof protection pads: Manufacturer's standard for maintenance paths shall be adhered to roofing surface per manufacturer’s recommendations.

END OF SECTION 075200

SECTION 076100 - SHEET METAL ROOFING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Shop Drawings.

B. Comply with SMACNA's "Architectural Sheet Metal Manual" unless otherwise indicated.

C. Warranties: Standard form in which roofing Installer agrees to repair or replace sheet metal roofing that fails in materials or workmanship within five years from date of Substantial Completion.

D. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Section 099000 – Painting and Coating
   2. Section 099110 – Preparation of Historic Wood and Metal Surfaces for Painting

PART 2 - PRODUCTS

2.1 ROOFING SHEET METALS

A. Metallic-Coated Steel Sheet: Galvanized structural-steel sheet, ASTM A 653/A 653M, G90 (Z275); any replacement sheet metal pans for the flat seam roof are to match the nominal thickness of existing.

   1. Finish: All exposed surfaces to be prepared, primed, and painted to match color and finish of existing sheet metal after seams are sealed or soldered.

   2. Field-Applied Finish: Manufacturer's standard waterborne acrylic emulsion paint primer and finish coat.

2.2 ACCESSORIES

A. Felt Underlayment: ASTM D 226, Type II (No. 30), asphalt-saturated organic felts.

B. Self-Adhering Sheet Underlayment, High Temperature: Butyl or SBS-modified asphalt; slip-resisting-polyethylene surfaced; with release paper backing; cold applied. Stable after testing at 240 deg F (116 deg C) and passes after testing at minus 20 deg F (29 deg C); ASTM D 1970.

1. Products: One of the following:

    a. Carlisle Coatings & Waterproofing Inc.; CCW WIP 300HT.
    b. Grace Construction Products, a unit of W. R. Grace & Co.; Ultra.
    c. Henry Company; Blueskin PE200 HT.
    d. Metal-Fab Manufacturing, LLC; MetShield.
    e. Owens Corning; WeatherLock Metal High-Temperature Underlayment.
    f. Or Approved Equal.

C. Slip Sheet: Building paper, 3-lb/100 sq. ft. (0.16-kg/sq. m) minimum, rosin sized.

D. Fasteners: Wood screws, annular-threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners.

1. Exposed Fasteners: Paint heads to match the finish color of sheet metal roofing, flashing or trim.
2. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
3. Fasteners for Metallic-Coated Steel Sheet: Hot-dip galvanized steel or Series 300 stainless steel.

E. Solder for Zinc-Tin Alloy-Coated Steel: ASTM B 32, 100 percent tin.

F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

G. Metal Accessories: Matching sheet metal roofing in finish and material required for a complete weathertight roofing system, including clips.

2.3 FABRICATION

A. Fabricate sheet metal roofing to comply with details shown and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of installation indicated.

1. Flat-Seam Roofing: Form flat-seam pans from metal sheets to match size of existing roofing pans with 1/2-inch (13-mm) notched and folded edges.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Remove damaged pan being careful to not damage adjacent pans that are to remain in place.

B. Clean all adjacent seams in preparation for installation of replacement pan.

C. Verify existing roofing felt is still functionally intact, install replacement as needed by ship-lapping new felt to existing with appropriate horizontal and vertical laps

D. Apply slip sheet over underlayment before installing metal roof panel(s).

E. Zinc-Tin Alloy-Coated Steel Roofing: For roofing with 3:12 slopes or less, paint underside of shop-coated, zinc-tin alloy-coated steel, before installation, with primer, applied at a dry film thickness of not less than 2.5 mils (0.06 mm).

F. Install work with lines and corners of exposed units true and accurate. Form exposed faces flat and free of buckles, excessive waves, and avoidable tool marks, considering temper and reflectivity of metal. Provide uniform, neat seams with minimum exposure of solder and sealant. Fold back sheet metal to form a hem on concealed side of exposed edges unless otherwise indicated.

1. Install cleats to hold sheet metal panels in position. Attach each cleat with two fasteners to prevent rotation.
2. Nail cleats not more than 12 inches (300 mm) o.c. Bend tabs over nails.

G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin the seam edges to be joined.
1. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

H. Seal joints as shown and as required for leakproof construction. Provide low-slope transverse seams using cleats where backup of moisture may occur.

END OF SECTION 076100

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

C. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

PART 2 - PRODUCTS

2.1 SHEET METAL

A. Galvanized Steel: ASTM A525, ASTM A361 with minimum 1.25 (377 g/sq m) ounces per square foot of zinc coating meeting ASTM A525, ASTM A446, and ASTM A361.

1. Finish: All exposed surfaces to be prepared, primed, and painted to match color and finish of existing sheet metal.

2.2 FLASHING AND TRIM

A. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.

2.3 ACCESSORIES

A. Felt Underlayment: ASTM D 226, Type II (No. 30), asphalt-saturated organic felts.

B. Self-Adhering Sheet Underlayment, High Temperature: Butyl or SBS-modified asphalt; slip-resisting-polyethylene surfaced; with release paper backing; cold applied. Stable after testing at 240 deg F (116 deg C) and passes after testing at minus 20 deg F (29 deg C); ASTM D 1970.

1. Products: One of the following:

a. Carlisle Coatings & Waterproofing Inc.; CCW WIP 300HT.
b. Grace Construction Products, a unit of W. R. Grace & Co.; Ultra.

c. Henry Company; Blueskin PE200 HT.
d. Metal-Fab Manufacturing, LLC; MetShield.
e. Owens Corning; WeatherLock Metal High-Temperature Underlayment.
f. Or Approved Equal.

C. Fasteners: Wood screws, annular-threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners.

1. Exposed Fasteners: Paint heads to match the finish color of sheet metal roofing, flashing or trim.
2. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
3. Fasteners for Metallic-Coated Steel Sheet: Hot-dip galvanized steel or Series 300 stainless steel.

D. Solder for Zinc-Tin Alloy-Coated Steel: ASTM B 32, 100 percent tin.

E. Butyl Sealant: ASTM C 1311, solvent-release butyl rubber sealant.

F. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.4 FABRICATION

A. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.

B. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.

C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with SMACNA's "Architectural Sheet Metal Manual." Allow for thermal expansion; set true to line and level. Install Work with laps, joints, and seams permanently watertight and weatherproof; conceal fasteners where possible.

B. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

C. Fabricate non-moving seams in sheet metal with flat-lock seams.

D. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm), except where pre-tinned surface would show in finished Work.

1. Do not pre-tin zinc-tin alloy-coated stainless steel.
2. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

E. Separate dissimilar metals with a bituminous coating or polymer-modified, bituminous sheet underlayment.

END OF SECTION 076200

SECTION 077200 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data

B. Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

C. Coordinate installation of sheet metal accessories and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Galvanized Steel: ASTM A525, ASTM A361 with minimum 1.25 (377 g/sq m) ounces per square foot of zinc coating meeting ASTM A525, ASTM A446, and ASTM A361.

1. Finish: All exposed surfaces to be prepared, primed, and painted to match color of adjacent roofing surface, final color to be selected from samples.

2.2 ROOF ACCESSORIES

A. Pitch Pans: Fabricate from 0.022-inch- (0.55-mm-) thick, metallic-coated steel with welded or sealed mechanical corner joints.
1. Basis-of-Design Product: Flashing Kings, Inc. or a comparable product of one of the following:
   a. Active Ventilation Products
   b. Or Equal.

2. Provide units with base profile coordinated with roof thickness and roof deck slope.
3. Finish: Prime painted.

B. Attic Vents: Manufacturer's standard unit fabricated from the following materials, with manufacturer's standard welded or sealed mechanical joints, and integral base flange:

1. Basis of Design: O’Hagin Low profile (tapered) wood shake/shingle vent or a comparable product of one of the following:

a. Tamco –Thompson Architectural Metals Company
b. Or Comparable Equal.

2. Type: Low-profile
3. Material: Metallic-coated steel
4. Finish: Prime painted.
5. Provide manufacturer's standard bird screens, that maintains the required net free area.

C. Wall mounted, louvered, and screened attic vents

1. Material: Metallic-coated steel

2. Finish: Primed prior to installation, and painted to match adjacent surface.

D. Gutter Debris Screen: Manufacturer's standard unit fabricated from the following materials, with manufacturer's standard welded or sealed mechanical joints, and integral flanges:

1. Basis of Design: Tamco –Thompson Architectural Metals Company drop-in gutter guard or a comparable product of one of the following:
   a. Gutter Supply
   b. E-Z Gutter
   c. Or Comparable Equal.

2. Type: Low-profile, drop-in
3. Material: Metallic-coated steel

PART 3 - EXECUTION

3.1 INSTALLATION

A. Installation: Unless otherwise indicated, install roof accessory items according to construction details of NRCA's "Roofing and Waterproofing Manual." Coordinate with installation of roof deck, vapor barriers, roof insulation, roofing, and flashing to ensure combined elements are secure, waterproof, and weathertight.

END OF SECTION 077200

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and color Samples.

B. Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (4.4 deg C).

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

A. Low-Emitting Materials:

1. Exterior reactive sealants shall have a VOC content of not more than 50 g/L or 4 percent by weight, whichever is greater.
2. Other exterior caulks and sealants shall have a VOC content of not more than 30 g/L or 2 percent by weight, whichever is greater.

B. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.

C. Sealant for General Exterior Use Where Another Type Is Not Specified, One of the Following:

1. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.

2. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and for Use NT.

2.2 MISCELLANEOUS MATERIALS

A. Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

D. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with ASTM C 1193.

B. Install sealant backings to support sealants during application and to produce cross-sectional shapes and depths of installed sealants that allow optimum sealant movement capability.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

END OF SECTION 079200

SECTION 099110
PREPARATION OF HISTORIC WOOD AND METAL SURFACES FOR PAINTING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Preparation of historic wood and metal surfaces for painting.

B. Drawings and general provisions of the Contract, including General and supplementary Conditions and Division 1 Specifications Sections, apply to this Section.

1.02 REFERENCES

A. ACGIH - American Conference of Governmental Industrial Hygienists
1. 02 - Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices.

B. ASTM - American Society for Testing and Materials
1. D1730 - Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting.
2. D1731 - Preparation of Hot-Dip Aluminum Surfaces for Painting.
3. D3274 - Evaluating Degree of Surface Disfigurement of Paint Films by Microbial (Fungal or Algal) Growth or Soil and Dirt Accumulation.
4. D3359 - Measuring Adhesion by Tape Test.
5. D4214 - Evaluating Degree of Chalking of Exterior Paint Films.

C. SSPC - The Society For Protective Coating
1. PA Guide 5 - Guide to Maintenance Painting Programs.
2. SP1 - Solvent Cleaning.
3. SP2 - Hand Tool Cleaning.
4. SP3 - Power Tool Cleaning.
5. SP5/NACE 1 - White Metal Blast Cleaning.
6. SP6/NACE 3 - Commercial Blast Cleaning.
7. SP7/NACE 4 - Brush-Off Blast Cleaning
8. SP10/NACE 2 - Near-White Blast Cleaning.

1.03 WORKPLAN

A. The procedures proposed for the accomplishment of the work shall provide for safe conduct of the work, careful removal, and disposition of materials specified to be salvaged, protection of property, which is to remain undisturbed, and coordination with other work in progress. The work plan shall include a Safety and Health plan describing procedures for handling monitoring, and disposition of VOCs and other hazardous and toxic materials. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations. The Contractor shall test the materials designated by the Owner.

1.04 SUBMITTALS

A. Product Data
   1. Submit work plan and the names, quantity represented, and intended use for proprietary brands of materials proposed to be substituted for the specified materials when the required quantity of a particular batch is 200 liters 50 gallons or less.
   2. Submit manufacturer's current printed product description, material safety data sheets (MSDS), and technical data sheets for each product. Detailed mixing, thinning and application instructions, minimum and maximum application temperature, and curing and drying times shall be provided for each product submitted.

B. Qualifications: Submit statement certified by the Contractor attesting that the experience and qualifications of the workers (journeymen) comply with the Specifications.

C. Certificates: Submit certificate stating that products proposed for use meet the VOC regulations of the local Air Pollution Control Districts having jurisdiction over the geographical area in which the project is located.

D. Field Test: For the project record, submit written report of field test performed for each application and results achieved.

1.05 QUALITY ASSURANCE

A. Qualifications: Provide qualified workers trained and experienced in the preparation for painting of wood and metal surfaces in historic structures and shall submit documentation of 5 consecutive years of work of this type. A list of similar jobs shall be provided identifying when, where, and for whom the work was done. A current point-of-contact for identified references shall be provided.

B. Field Test: For final product selection, use manufacturer's test kit prior to application of any materials. Obtain City’s approval of test results prior to starting subsequent operations.
   1. If required, repeat field test until City’s acceptance.

1.06 PACKAGING, LABELING AND STORING

A. Paint removers, solvents, and other chemicals used for surface preparation shall be in sealed containers that legibly show the designated name, formula or specification number, quantity, date of manufacture, manufacturer's formulation number, manufacturer's directions including any warnings and special precautions, and name of manufacturer. Such materials shall be furnished in containers not larger than 5 gallons; they shall be stored in accordance with the manufacturer's written directions; and as a minimum stored off the ground, under cover, with sufficient ventilation to prevent the buildup of flammable vapors and at temperatures between 40 and 95 degrees Fahrenheit.

1.07 ENVIRONMENTAL CONDITIONS

A. Unless otherwise recommended by the product manufacturer, the ambient temperature shall be between 45 and 95 degrees Fahrenheit when applying paint removers, solvents, or other preparation materials.

1.08 SAFETY AND HEALTH

A. Work shall comply with the Accident Prevention Plan, including the Activity Hazard Analysis as specified in the Contract Clauses. The Activity Hazard Analysis shall include analyses of the potential impact of surface preparation operations on personnel and on others involved in and adjacent to the work zone.

B. Worker Exposures: Exposure of workers to chemical substances shall not exceed limits as established by ACGIH-02.

C. Training: Workers having access to an affected work area shall be informed of the contents of the applicable material data safety sheets (MSDS) and shall be informed of potential health and safety hazard and protective controls associated with materials used on the project. An affected work area is one, which may receive dust, mists, and odors from the surface preparation operations. Workers involved in surface preparation and clean-up shall be trained in the safe handling and application, and the exposure limit, for each material which the worker will use in the project. Personnel having a need to use respirators and masks shall be instructed in the use and maintenance of such equipment.

D. Coordination: Work shall be coordinated to minimize exposure of building occupants, other Contractor personnel, and visitors to mists and odors from surface preparation and cleaning operations.

PART 2 - PRODUCTS

2.01 PAINT REMOVERS

A. Chemical paint removers shall be a commercial item specifically manufactured for the type of paint to be removed. Product can be selected from one of the following for the most efficient and effective while being the gentlest toward the existing substrate:
   1. Acceptable Manufacturer: Dumond, Inc., which is located at: 253 S. Bailey Rd.; Downingtown, PA 19335; Toll Free Tel: 800-245-1191 ; Tel: 609-655-7700; Fax: 609-655-7725; Email:request info (abensen@dumondglobal.com); Web:https://dumondglobal.com, product lines
      a. Peel Away 1
      b. Smart Strip Advanced
      c. Smart Strip PRO
   2. Dumond, Inc. Test Kit
      a. Test kit must be used to determine best product for field conditions.

B. Requests for substitutions will be considered in accordance with Standard Specifications.

2.02 EPOXY CONSOLIDANTS

A. Liquid Consolidant: Liquid wood consolidant shall consist of a 2-part, low-viscosity liquid epoxy that meets the criteria of Table 1.

B. Epoxy Paste: Epoxy paste shall consist of a 2-part, thixotropic paste that meets the criteria of Table 1.

TABLE 1

	CONSOLIDANT LIQUID	EPOXY PASTE
Properties	Low-Viscosity Liquid	No-Slump,Thixotropic Paste
Toxicity	Low	Very Low
Toxicity Cured	Non-Toxic	Non-Toxic
Ratios	1:1 by Volume	1:1 by Volume
Pot Life @ Room Temp.	30 minutes min.	50 minutes min.
Hardening @ Room Temp.	1 hr. or longer	1 hr. or longer
Hardening @ 60 deg. C	16 min. or less	18 min. or less
Viscosity Poises @ 22 deg. C	4.7 max.	Thixotropic paste
Solids	95 percent min.	98 percent min.
Tensile Strength	27.6 MPa	17.25 MPa
Elongation	50 percent	4 percent
Compressive Strength		
Failure	131 MPa	---
Yield	24 MPa	38 MPa

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. Prior to starting work covered in this section review, and coordinate with requirements of hazardous materials handling or removal provided by Owner. The hazardous materials guidelines or requirements will take precedence over any requirements contained within this section.

B. Methods used for preparation of historic wood and metal surfaces for painting shall be the gentlest possible to achieve the desired results. Historic substrate materials shall not be damaged or marred in the process of surface preparations. Samples of the existing paint finishes shall be collected and analyzed for the purpose of documentation or matching, if so directed by the Owner. Material and application requirements for paints are covered in Section 099100 Painting and Coating.

3.02 VENTILATION

A. Interior work zones having a volume of 280 cubic meters 10,000 cubic feet or less shall be ventilated at a minimum of 2 air exchanges per hour. Ventilation in larger work zones shall be maintained by means of mechanical exhaust. Solvent vapors shall be exhausted outdoors, away from air intakes and workers. Return air inlets in the work zone shall be temporarily sealed before start of work until the prepared surfaces have dried. Operators and personnel in the vicinity of paint removal processes involving chemicals or mechanical action (sanding or blasting) shall wear respirators.

3.03 PROTECTION OF AREAS NOT TO BE PAINTED

A. Items not to be painted which are in contact with or adjacent to painted surfaces shall be removed or protected prior to surface preparation and painting operations. Items removed prior

to painting shall be replaced when painting is completed. Following completion of painting, workers skilled in the trades involved shall reinstall removed items. Surfaces contaminated by preparation materials shall be restored to original condition.

3.04 CLEANING OF SURFACES

A. Surfaces to be painted shall be clean and free of grease, dirt, dust, and other foreign matter before application of paint or surface treatments. After cleaning, surfaces shall exhibit a surface disfigurement rating of 7 or greater when evaluated in accordance with ASTM D3274. Dirt and surface contaminants shall be cleaned by brush with solutions of water and detergent or trisodium phosphate, then rinsed clean with water, and let dry. Surfaces on which mildew or other microbiological growth is present shall be cleaned with a detergent solution containing household bleach. Oil and grease shall be removed with clean cloths and cleaning solvents prior to mechanical cleaning. Cleaning solvents shall be of low toxicity with a flashpoint in excess of 100 degrees Fahrenheit. Cleaning shall be programmed so that dust and other contaminants will not fall on newly prepared or newly painted surfaces.

3.05 EXISTING PAINT

A. Existing paint shall be tested for adhesion to substrate per ASTM D3359, Test Method A and shall obtain a rating of 4 or better in order to be considered sound. Existing paint meeting this requirement may be considered a satisfactory base for repainting.

3.06 PAINT REMOVAL

A. Flaking, cracking, blistering, peeling or otherwise deteriorated paint shall be removed by scraping with hand scrapers. After scraping, removal of large areas of paint or paint on architectural details shall be accomplished using chemical paint removers. Paint shall be removed to bare substrate. Open flame heat devices shall not be used. Mechanical paint removal shall not damage or mar the substrate material.

B. Chemical Paint Removers: Chemical paint removers shall be used in accordance with manufacturer's recommendations. If chemical strippers are used, substrate shall be neutralized after stripping to a pH of 5 to 8.5.

3.07 SURFACE PREPARATION

A. After cleaning and removal of deteriorated paint, edges of remaining chipped paint shall be feather-edged and sanded smooth. Damaged areas such as, but not limited to, nail holes, cracks, chips, and spalls shall be repaired with suitable material to match adjacent undamaged areas. Slick surfaces shall be roughened. Rusty metal surfaces shall be cleaned per SSPC SP1. Chalk shall be removed so that when tested in accordance with ASTM D4214, the chalk resistance rating is no less than 8. New, proposed coatings shall be compatible with existing coatings. If existing surfaces are glossy, the gloss shall be reduced.

3.08 WOOD SURFACES

A. Wood surfaces shall be cleaned of foreign matter. Wood surfaces adjacent to surfaces to receive water-thinned paints shall be primed and/or touched up before applying water-thinned paints. Small, dry seasoned knots shall be scraped, cleaned, and given a thin coat of commercial knot

sealer before application of the priming coat. Pitch on large, open, unseasoned knots and all other beads or streaks of pitch shall be scraped off, or, if it is still soft, removed with mineral spirits or turpentine, and the resinous area shall be thinly coated with knot sealer.

B. Wood Repair: Badly decayed areas shall be removed and repaired. Areas and pieces decayed beyond repair shall be replaced with new pieces that match originals in all respects. Moderately decayed areas, weathered, or gouged wood shall be patched with approved patching compounds, and shall be sanded smooth. The source or cause of wood decay shall be identified and corrected prior to application of patching materials. Wet wood shall be completely dried to a moisture content not exceeding 12 percent, as measured by a moisture meter, to its full depth before patching, unless otherwise authorized. Wood that is to be patched shall be clean of dust, grease, and loose paint.
   1. Epoxy Wood Repair: Epoxy wood repair materials shall be applied in accordance with the manufacturer's written instructions. Health and safety instructions shall be followed in accordance with the manufacturer's instructions. Clean mixing equipment shall be used to avoid contamination. Mix and proportions shall be as directed by the manufacturer. Batches shall be only large enough to complete the specific job intended. Patching materials shall be completely cured before painting or reinstallation of patched pieces.

   2. Epoxy Consolidant and Epoxy Paste: Epoxy liquid wood consolidant shall be used:
      a. To penetrate and impregnate deteriorated wood sections in order to reinforce wood fibers that have become softened or absorbent.
      b. As a primer for areas that are to receive epoxy paste filler.
      c. Epoxy paste shall be used to fill areas where portions of wood are missing such as holes, cracks, gaps, gouges, and other voids.

D. Exposed Ferrous Metals: Exposed ferrous metals such as nail heads on or in contact with wood surfaces to be painted with water-thinned paints, shall be spot-primed with a suitable corrosion-inhibitive primer capable of preventing flash rusting and compatible with the coating specified for the adjacent areas.

E. Finishing Nails: Finishing nails shall be set, and all holes and surface imperfections shall be primed. After priming, holes and imperfections in finish surfaces shall be filled with putty or plastic wood filler, colored to match the finish coat if natural finish is required, allowed to dry, and sanded smooth. Putty or wood filler shall be compatible with subsequent coatings.

G. Wood Preservative: Areas of bare wood in exterior locations prone to excessive moisture or standing water shall be treated with a commercial, fungicide, paintable water repellant/preservative. Water repellant/preservatives shall not be used on interior surfaces.

3.09 METAL SURFACES

A. Metal surfaces shall be cleaned of foreign matter. Programs for preparation of metal shall be per SSPC PA Guide 5. Grease, oil, and other soluble contaminants shall be removed using solvent cleaning per SSPC SP1. Surfaces shall be free from soils and corrosion; e.g. grease, oil, solder flux, welding flux, weld spatter, sand, rust, scale, and other contaminants that might interfere with the application of the new finish. Cleaning methods shall be the gentlest possible to achieve the desired result. Metals which are soft, thin, or exhibit fine detail shall not be abrasively cleaned. Evidence of corrosion or contamination on a previously cleaned surface shall be cause for recleaning prior to painting.

B. Ferrous Surfaces: Ferrous surfaces that contain loose rust, loose mill scale, and other foreign substances shall be cleaned mechanically with hand tools according to SSPC SP2, power tools according to SSPC SP3 or by blast cleaning according to SSPC SP5/NACE 1. Shop-coated ferrous surfaces shall be protected from corrosion by treating and touching up corroded areas immediately upon detection.

C. Nonferrous Metallic Surfaces: Galvanized, aluminum and aluminum-alloy, lead, copper, and other nonferrous metal surfaces shall be solvent-cleaned in accordance with SSPC SP1.
   1. Aluminum: Aluminum surfaces shall be treated per ASTM D1730 or ASTM D1731. Steel wool, steel brushes, and uninhibited caustic etching solutions, such as sodium hydroxide, shall not be used on aluminum.

   2. Zinc: Zinc surfaces including zinc-coated substrates, shall be cleaned prior to painting as follows: degrease, soak in a mild and inhibited alkaline cleaner, rinse with clean overflowing water, clean anodically in an acid (e.g. 0.25 to 0.75 percent sulfuric acid), and rinse with clean overflowing water.

3.10 TIMING

A. Surfaces that have been cleaned, pretreated, and otherwise prepared for painting shall be given a coat of the specified first coat as soon as practical after such pretreatment has been completed, but prior to any deterioration of the prepared surface. Unless otherwise directed, the first coat primer shall be applied within 48 hours of surface preparation.

3.11 SURFACES TO BE PREPARED FOR PAINTING

A. Surfaces shall be prepared as specified and as shown in the painting schedule in Section 099100 Painting.

3.12 CLEANING

A. Cloths, cotton waste and other debris that might constitute a fire hazard shall be placed in closed metal containers and removed at the end of each day. Containers shall be removed from the site or destroyed in an approved manner. Preparation materials and other deposits on adjacent surfaces shall be removed and the entire job left clean and ready for painting.

END OF SECTION 099110

APPENDIX C – STRUCTURAL CALCULATIONS - ARBOR

T&S STRUCTURAL

1171 Homestead Rd.
Suite 275
Santa Clara, CA 95050

Phone: (408) 615-9200
Fax: (408) 615-9900

Structural Calculations
For

Jack House
Trellis

536 Marsh Street
San Luis Obispo, CA 93401

April 2, 2024

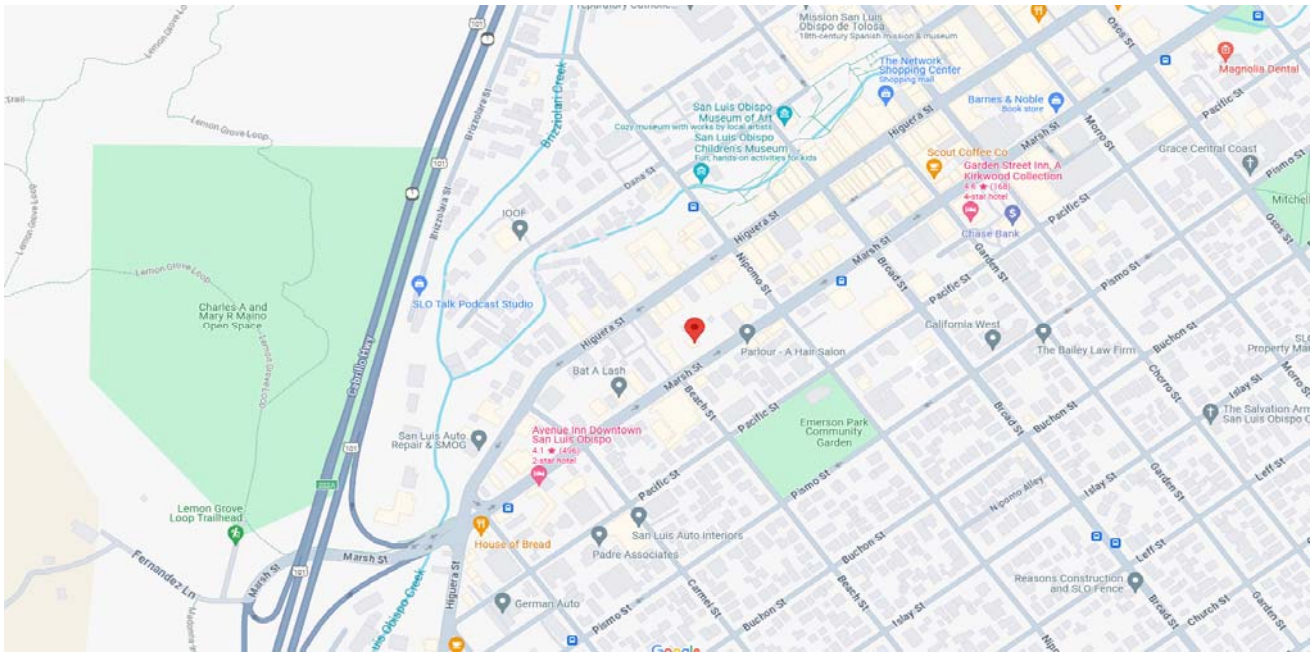
JOB # 246040

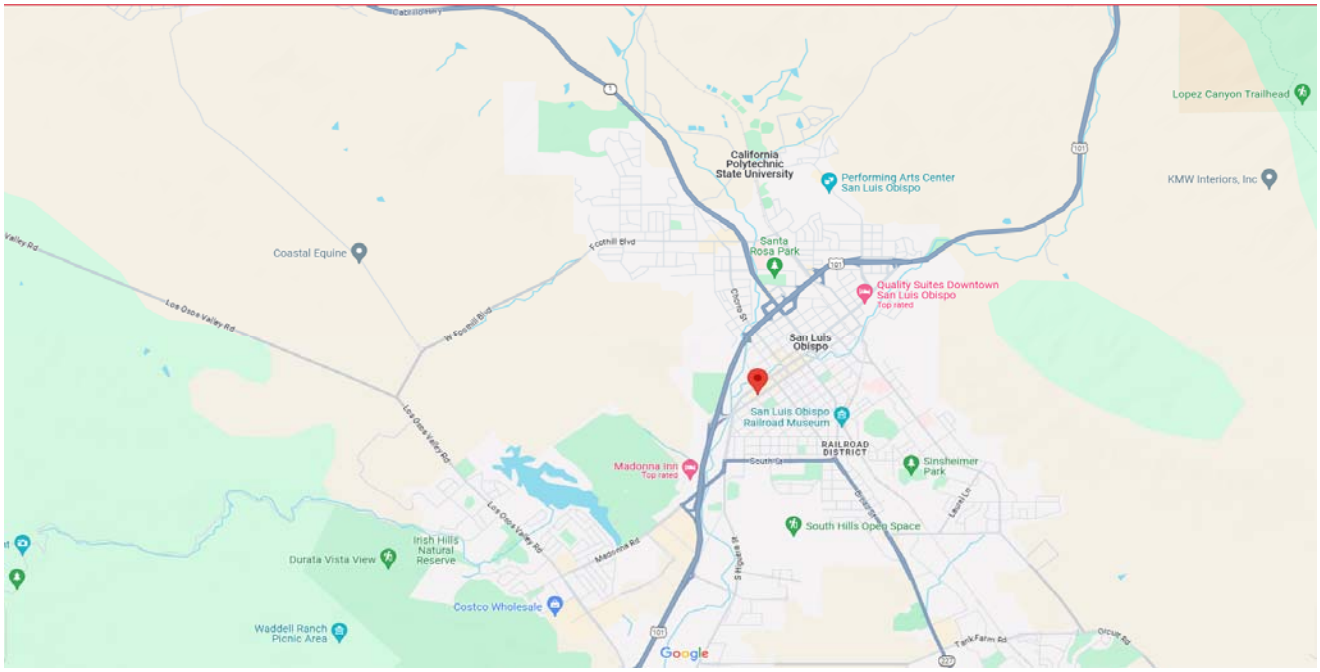
1171 Homestead Rd.
Suite 275
Santa Clara, CA 95050

Phone: (408) 615-9200
Fax: (408) 615-9900

Sheet: of
Date: 4/1/2024
Job #: 246040
Project: Jack House Trellis

SITE MAP





T&S STRUCTURAL
1171 Homestead Rd.
Suite 275
Santa Clara, CA 95050

Phone: (408) 615-9200
Fax: (408) 615-9900

Sheet:
Date: 4/2/2024
Job #: 246040
Project: Jack House Trellis
By: T.D.

VERTICAL LOADING

	Typical Arbor Roof	Roof live load
Typical roof slope	12 :12	
		20.00 psf per CBC
3x4 Roof Joists at 7" o.c.	3.85 psf	
Roof Beams	1.10 psf	
4x Roof Beam at 4'-0" o.c.	1.10 psf	
4x Curb Beams at 4'-0" o.c.	1.21 psf	
Gable Panels	0.50 psf	
Columns	1.39 psf	
Miscellaneous	0.85 psf	
	10.00 psf	
Load to Roof Beams	7.76 psf	
Total Load Trellis	10.00 psf	

Seismic Load to Trellis	=	1076	lb
Seismic Load to Column A	=	269	lb
Seismic Load to Column B	=	269	lb
Seismic Load to Column C	=	269	lb
Seismic Load to Column D	=	269	lb
Trellis Area	=	196	sq. ft.

10psf*196sq. ft.*0.549

base shear (LRFD)

T&S Structural Engineering
1171 Homestead Rd. Suite 275
Santa Clara, CA 95050
408-615-9200

Project Title: Jack House Trellis
Engineer: T.D.
Project ID: 246040
Project Descr:

Wood Beam

Project File: Beam Design.ec6

LIC# : KW-06014965, Build:20.24.02.28 DUQUETTE ENGINEERING (c) ENERCALC INC 1983-2023

DESCRIPTION: Trellis Joist

CODE REFERENCES

Calculations per NDS 2018, IBC 2021, ASCE 7-16
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method : Allowable Stress Design
Load Combination : ASCE 7-16

Wood Species : Alaska Yellow Cedar
Wood Grade : No.2

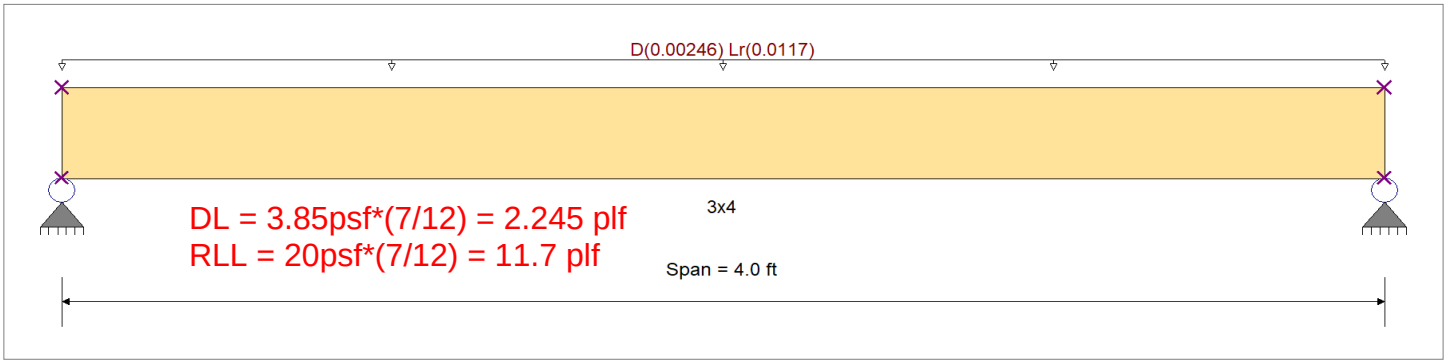
Beam Bracing : Completely Unbraced

Fb +	800 psi
Fb -	800 psi
Fc - Prll	1000 psi
Fc - Perp	510 psi
Fv	225 psi
Ft	450 psi

E : Modulus of Elasticity

Ebend- xx	1300 ksi
Eminbend - xx	470 ksi
Density	28.72 pcf

Repetitive Member Stress Increase



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight NOT internally calculated and added
Uniform Load : D = 0.002460, Lr = 0.01170 , Tributary Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.039 : 1	Maximum Shear Stress Ratio	=	0.015 : 1
Section used for this span		3x4	Section used for this span		3x4
fb: Actual	=	66.58 psi	fv: Actual	=	4.18 psi
F'b	=	1,709.84 psi	F'v	=	281.25 psi
Load Combination		+D+Lr	Load Combination		+D+Lr
Location of maximum on span	=	2.000 ft	Location of maximum on span	=	3.723 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.006 in	Ratio =	8222 >=240	Span: 1 : Lr Only
Max Upward Transient Deflection	0 in	Ratio =	0 <240	n/a
Max Downward Total Deflection	0.007 in	Ratio =	6793 >=180	Span: 1 : +D+Lr
Max Upward Total Deflection	0 in	Ratio =	0 <180	n/a

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr	1	0.0071	2.015		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	0.028	0.028
Max Upward from Load Combinations	0.028	0.028
Max Upward from Load Cases	0.023	0.023
D Only	0.005	0.005
+D+Lr	0.028	0.028
Lr Only	0.023	0.023

T&S Structural Engineering
1171 Homestead Rd. Suite 275
Santa Clara, CA 95050
408-615-9200

Project Title: Jack House Trellis
Engineer: T.D.
Project ID: 246040
Project Descr:

Wood Beam

Project File: Beam Design.ec6

LIC# : KW-06014965, Build:20.24.02.28 DUQUETTE ENGINEERING (c) ENERCALC INC 1983-2023

DESCRIPTION: A-Frame Beam

CODE REFERENCES

Calculations per NDS 2018, IBC 2021, ASCE 7-16
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method : Allowable Stress Design
Load Combination : ASCE 7-16

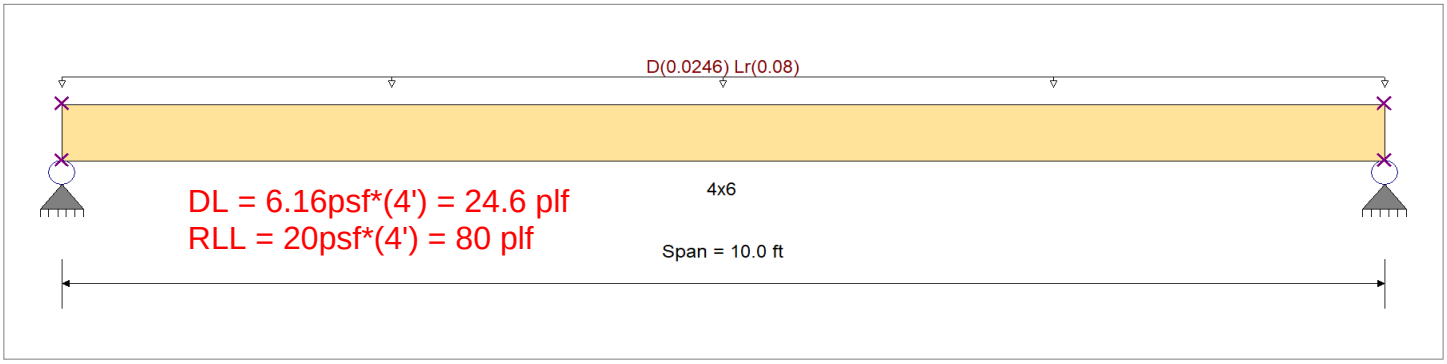
Wood Species : Alaska Yellow Cedar
Wood Grade : No.1

Beam Bracing : Completely Unbraced

Fb +	900.0 psi
Fb -	900.0 psi
Fc - Prll	1,050.0 psi
Fc - Perp	510.0 psi
Fv	225.0 psi
Ft	525.0 psi

E : Modulus of Elasticity

Ebend- xx	1,400.0 ksi
Eminbend - xx	510.0 ksi
Density	28.720 pcf



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight NOT internally calculated and added
Uniform Load : D = 0.02460, Lr = 0.080 , Tributary Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.617 : 1	Maximum Shear Stress Ratio	=	0.132 : 1
Section used for this span		4x6	Section used for this span		4x6
fb: Actual	=	889.16 psi	fv: Actual	=	37.18 psi
F'b	=	1,440.58 psi	F'v	=	281.25 psi
Load Combination		+D+Lr	Load Combination		+D+Lr
Location of maximum on span	=	5.000 ft	Location of maximum on span	=	0.000 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.267 in	Ratio =	450 >=240	Span: 1 : Lr Only
Max Upward Transient Deflection	0 in	Ratio =	0 <240	n/a
Max Downward Total Deflection	0.348 in	Ratio =	344 >=180	Span: 1 : +D+Lr
Max Upward Total Deflection	0 in	Ratio =	0 <180	n/a

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr	1	0.3484	5.036		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	0.523	0.523
Max Upward from Load Combinations	0.523	0.523
Max Upward from Load Cases	0.400	0.400
D Only	0.123	0.123
+D+Lr	0.523	0.523
Lr Only	0.400	0.400

T&S Structural Engineering
1171 Homestead Rd. Suite 275
Santa Clara, CA 95050
408-615-9200

Project Title: Jack House Trellis
Engineer: T.D.
Project ID: 246040
Project Descr:

Wood Beam

Project File: Beam Design.ec6

LIC# : KW-06014965, Build:20.24.02.28 DUQUETTE ENGINEERING (c) ENERCALC INC 1983-2023

DESCRIPTION: Main Roof Beam

CODE REFERENCES

Calculations per NDS 2018, IBC 2021, ASCE 7-16
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method : Allowable Stress Design
Load Combination : ASCE 7-16

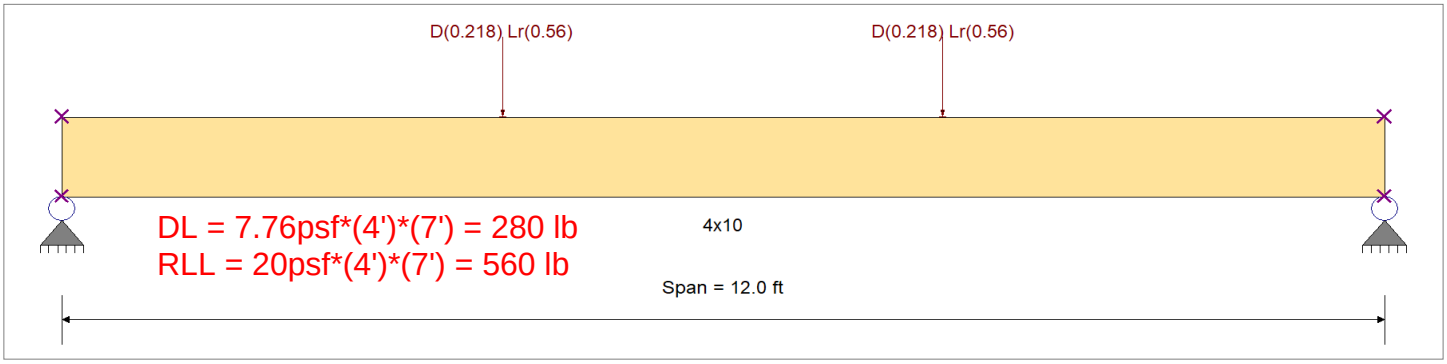
Wood Species : Alaska Yellow Cedar
Wood Grade : No.1

Beam Bracing : Completely Unbraced

Fb +	900.0 psi
Fb -	900.0 psi
Fc - Prll	1,050.0 psi
Fc - Perp	510.0 psi
Fv	225.0 psi
Ft	525.0 psi

E : Modulus of Elasticity

Ebend- xx	1,400.0 ksi
Eminbend - xx	510.0 ksi
Density	28.720 pcf



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight NOT internally calculated and added
Point Load : D = 0.2180, Lr = 0.560 k @ 4.0 ft
Point Load : D = 0.2180, Lr = 0.560 k @ 8.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.575 : 1	Maximum Shear Stress Ratio	=	0.128 : 1
Section used for this span		4x10	Section used for this span		4x10
fb: Actual	=	748.20 psi	fv: Actual	=	36.05 psi
F'b	=	1,301.78 psi	F'v	=	281.25 psi
Load Combination		+D+Lr	Load Combination		+D+Lr
Location of maximum on span	=	7.270 ft	Location of maximum on span	=	0.000 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.185 in	Ratio =	779 >=240	Span: 1 : Lr Only
Max Upward Transient Deflection	0 in	Ratio =	0 <240	n/a
Max Downward Total Deflection	0.257 in	Ratio =	561 >=180	Span: 1 : +D+Lr
Max Upward Total Deflection	0 in	Ratio =	0 <180	n/a

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr	1	0.2566	6.044		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	0.778	0.778
Max Upward from Load Combinations	0.778	0.778
Max Upward from Load Cases	0.560	0.560
D Only	0.218	0.218
+D+Lr	0.778	0.778
Lr Only	0.560	0.560

T&S Structural Engineering
1171 Homestead Rd. Suite 275
Santa Clara, CA 95050
408-615-9200

Project Title: Jack House Trellis
Engineer: T.D.
Project ID: 246040
Project Descr:

Steel Column

Project File: Beam Design.ec6

LIC# : KW-06014965, Build:20.24.02.28 DUQUETTE ENGINEERING (c) ENERCALC INC 1983-2023

DESCRIPTION: Trellis HSS Column

Code References

Calculations per AISC 360-16, IBC 2021, ASCE 7-16
Load Combinations Used : ASCE 7-16

General Information

Steel Section Name : **HSS3-1/2x3-1/2x1/4**

Analysis Method :	Allowable Strength
Steel Stress Grade	
Fy : Steel Yield	46.0 ksi
E : Elastic Bending Modulus	29,000.0 ksi

Overall Column Height	8.50 ft
Top & Bottom Fixity	Top Pinned, Bottom Fixed
Brace condition :	

Unbraced Length for buckling ABOUT X-X Axis = 8.50 ft, K = 2.1
Unbraced Length for buckling ABOUT Y-Y Axis = 8.50 ft, K = 2.1

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Column self weight included : 89.075 lbs * Dead Load Factor
AXIAL LOADS . . .
Axial Load at 8.50 ft, D = 0.3460, LR = 0.6930 k
BENDING LOADS . . .
A-Frame Loading onto Column at 45 Degree: Lat. Point Load at 8.50 ft creating Mx-x, D = 0.3460, LR = 0.6930, E = 0.2690 k

DESIGN SUMMARY

Bending & Shear Check Results

PASS Max. Axial+Bending Stress Ratio = **0.06791** : 1

Load Combination	+D+Lr
Location of max.above base	0.0 ft
At maximum location values are . . .	
Pa : Axial	1.128 k
Pn / Omega : Allowable	16.611 k
Ma-x : Applied	0.0 k-ft
Mn-x / Omega : Allowable	8.034 k-ft
Ma-y : Applied	0.0 k-ft
Mn-y / Omega : Allowable	8.034 k-ft

PASS Maximum Shear Stress Ratio **0.0** : 1

Load Combination	0.0
Location of max.above base	0.0 ft
At maximum location values are . . .	
Va : Applied	0.0 k
Vn / Omega : Allowable	0.0 k

Maximum Load Reactions . .

Top along X-X	0.0 k
Bottom along X-X	0.0 k
Top along Y-Y	0.0 k
Bottom along Y-Y	0.0 k

Maximum Load Deflections . . .

Along Y-Y 0.0 in at 0.0 ft above base
for load combination :

Along X-X 0.0 in at 0.0 ft above base
for load combination :

DL = 10psf*(7')*(7') = 490 lb
RLL = 20psf*(7')*(7') = 980 lb
DL = 490lb*cos45 = 346 lb (axial)
DL = 490lb*sin45 = 346 lb (lateral)
RLL = 980lb*cos45 = 693 lb (axial)
RLL = 980lb*sin45 = 693 lb (lateral)
EQ = 269 lb (lateral)

Load Combination Results

Load Combination	Maximum Axial + Bending Stress Ratios: Stress Ratio	Status	Location	Cbx	Cby	KxLx/Rx	KyLy/Ry	Maximum Shear Ratios: Stress Ratio	Status	Location
D Only	0.026	PASS	0.00 ft	1.00	1.00	162.27	162.27	0.000	PASS	0.00 ft
+D+Lr	0.068	PASS	0.00 ft	1.00	1.00	162.27	162.27	0.000	PASS	0.00 ft
+D+0.70E	0.026	PASS	0.00 ft	1.00	1.00	162.27	162.27	0.000	PASS	0.00 ft
+D+0.5250E	0.026	PASS	0.00 ft	1.00	1.00	162.27	162.27	0.000	PASS	0.00 ft
+0.60D+0.70E	0.016	PASS	0.00 ft	1.00	1.00	162.27	162.27	0.000	PASS	0.00 ft

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	Axial Reaction @ Base	X-X Axis Reaction k @ Base	@ Top	Y-Y Axis Reaction @ Base	@ Top	Mx - End Moments k-ft @ Base	@ Top	My - End Moments @ Base	@ Top
D Only	0.435								
+D+Lr	1.128								
+D+0.70E	0.435								
+D+0.5250E	0.435								
+0.60D+0.70E	0.261								
Lr Only	0.693								
E Only									

T&S Structural Engineering
1171 Homestead Rd. Suite 275
Santa Clara, CA 95050
408-615-9200

Project Title: Jack House Trellis
Engineer: T.D.
Project ID: 246040
Project Descr:

Steel Column

Project File: Beam Design.ec6

LIC# : KW-06014965, Build:20.24.02.28 DUQUETTE ENGINEERING (c) ENERCALC INC 1983-2023

DESCRIPTION: Trellis HSS Column

Extreme Reactions

Item	Extreme Value	Axial Reaction @ Base	X-X Axis Reaction @ Base	@ Top	k	Y-Y Axis Reaction @ Base	@ Top	Mx - End Moments @ Base	@ Top	k-ft	My - End Moments @ Base	@ Top
Axial @ Base	Maximum	1.128										
"	Minimum											
Reaction, X-X Axis Base	Maximum	0.435										
"	Minimum	0.435										
Reaction, Y-Y Axis Base	Maximum	0.435										
"	Minimum	0.435										
Reaction, X-X Axis Top	Maximum	0.435										
"	Minimum	0.435										
Reaction, Y-Y Axis Top	Maximum	0.435										
"	Minimum	0.435										
Moment, X-X Axis Base	Maximum	0.435										
"	Minimum	0.435										
Moment, Y-Y Axis Base	Maximum	0.435										
"	Minimum	0.435										
Moment, X-X Axis Top	Maximum	0.435										
"	Minimum	0.435										
Moment, Y-Y Axis Top	Maximum	0.435										
"	Minimum	0.435										

Maximum Deflections for Load Combinations

Load Combination	Max. Deflection in X dir		Distance		Max. Deflection in Y dir		Distance	
D Only	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+Lr	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+0.70E	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+0.5250E	0.0000	in	0.000	ft	0.000	in	0.000	ft
+0.60D+0.70E	0.0000	in	0.000	ft	0.000	in	0.000	ft
Lr Only	0.0000	in	0.000	ft	0.000	in	0.000	ft
E Only	0.0000	in	0.000	ft	0.000	in	0.000	ft

T&S Structural Engineering
1171 Homestead Rd. Suite 275
Santa Clara, CA 95050
408-615-9200

Project Title: Jack House Trellis
Engineer: T.D.
Project ID: 246040
Project Descr:

Pole Footing Embedded in Soil

Project File: Beam Design.ec6

LIC# : KW-06014965, Build:20.24.02.28 DUQUETTE ENGINEERING (c) ENERCALC INC 1983-2023

DESCRIPTION: Trellis Footing Embedment

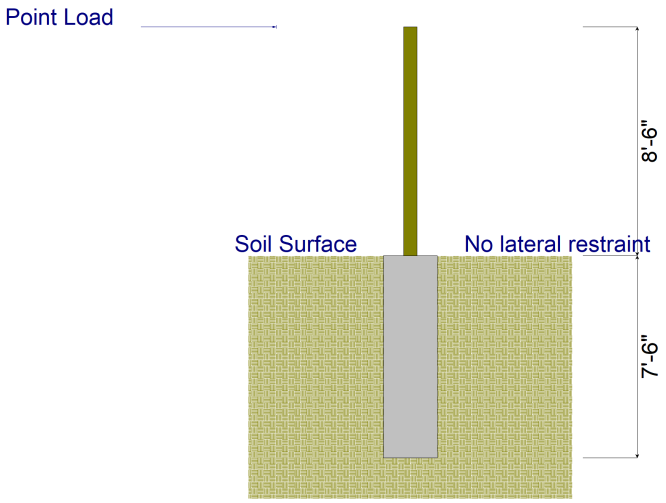
Code References

Calculations per IBC 2021 1807.3, ASCE 7-16
Load Combinations Used : ASCE 7-16

General Information

16" pier dia. x 1.5 (arch action)

Pole Footing Shape	Circular
Pole Footing Diameter	24.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	150.0 pcf
Max Passive	1,500.0 psf



Controlling Values

Governing Load Combinatio	D+Lr
Lateral Load	1.039 k
Moment	8.832 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	**369.496** psf
Allowable	**370.292** psf
Minimum Required Depth	**7.50 ft**
Footing Base Area	3.142 ft^2
Maximum Soil Pressure	0.3307 ksf

Applied Loads

Lateral Concentrated Load (k)		Lateral Distributed Loads (kl		Vertical Load (k)	
D : Dead Load	0.3460 k		k/ft	0.3460 k	
Lr : Roof Live	0.6930 k		k/ft	0.6930 k	
L : Live	k		k/ft	k	
S : Snow	k		k/ft	k	DL = 10psf*(7')*(7') = 490 lb
W : Wind	k		k/ft	k	RLL = 20psf*(7')*(7') = 980 lb
E : Earthquake	0.2690 k		k/ft	k	DL = 490lb*cos45 = 346 lb (axial)
H : Lateral Earth	k		k/ft	k	DL = 490lb*sin45 = 346 lb (lateral)
Load distance above ground surface	8.50 ft	TOP of Load above ground surface	ft		RLL = 980lb*cos45 = 693 lb (axial)
		BOTTOM of Load above ground surface	ft		RLL = 980lb*sin45 = 693 lb (lateral)
					EQ = 269 lb (lateral)

Load Combination Results

	Forces @ Ground Surface		Required	Pressure at 1/3 Depth		Soil Increase
Load Combination	Loads - (k)	Moments - (ft-k)	Depth - (ft)	Actual - (psf)	Allow - (psf)	Factor
D Only	0.346	2.941	4.88	242.4	242.8	1.000
+D+Lr	1.039	8.832	7.50	369.5	370.3	1.000
+D+0.750Lr	0.866	7.359	7.00	344.4	344.7	1.000
+D+0.70E	0.534	4.542	5.75	285.9	286.3	1.000
+D+0.5250E	0.487	4.141	5.63	275.7	276.5	1.000
+0.60D+0.70E	0.396	3.365	5.13	254.9	255.5	1.000

ASCE Hazards Report

Address:
536 Marsh St
San Luis Obispo, California
93401

Standard:	ASCE/SEI 7-16	**Latitude:**	35.276977
Risk Category:	II	**Longitude:**	-120.666284
Soil Class:	D - Default (see Section 11.4.3)	**Elevation:**	186.38562626289627 ft (NAVD 88)

Seismic

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	1.056	S_{D1} :	N/A
S_1 :	0.389	T_L :	8
F_a :	1.2	PGA :	0.468
F_v :	N/A	PGA_M :	0.561
S_{MS} :	1.267	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	0.845	C_v :	1.311

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Mon Apr 01 2024

Date Source: USGS Seismic Design Maps

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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T&S STRUCTURAL
1171 Homestead Rd.
Suite 275
Santa Clara, CA 95050

Phone: (408) 615-9200
Fax: (408) 615-9900

Sheet:
Date: 4/2/2024
Job #: 246040
Project: Jack House Trellis

BASE SHEAR CALCULATION (Arbor Trellis)

Applicable Building Code:	2022 CBC / ASCE 7-16 - Equivalent Lateral Force Procedure		
Applicable Load Combination:	D + L + 0.7 E		(1605.3.2, Eqn.16-21)
Earthquake Load:	$E = E_h + E_v$ [= 0 for Horizontal Diaphragm only]		(ASCE 7-16, Eqn.12.4-2)
Earthquake Load (Base Shear):	$E_h = \rho Q_E = \rho V = \rho C_S W$		(ASCE 7-16, Eqn.12.4-3)
Seismic Response Coefficient:	$C_s = S_{DS} / (R/I) =$	**0.422**	(ASCE 7-16, Eqn.12.8-2)
Site Class:	D		(Table 1613.5.2)
Design Spectral Response Accelerations:		Site Coefficients	(Table 1613.5.3-1,2)

Location		MSRA		Site coefficients			SR Coefficents	
Latitude	= 37.276977	S_s =	1.056	F_a =	1.20	S_{MS} = 1.267	S_{DS} =	0.845
Longitude	= -120.66628	S_1 =	0.600	F_v =	1.70	S_{M1} = 1.020	S_{D1} =	0.680

Seismic Design Category: E

Seismic Importance Factor:	I = 1.00	for Occupancy Category II	(ASCE 7-16 Table 1.5-1)
Redundancy/Reliability Factor:	ρ = 1.3	[ρ = 1.0, if each story resists more than 35% Base Shear, ρ = 1.3, if Seismic Design Category D, E, or F or above condition cannot be met.]	(ASCE 7-16,12.3.4.2)
Response Modification Factor:	R = 2.0	Inverted Pendulumn Type Structure	(ASCE 7-16 Table 15.4-2)

Seismic Response Coefficient:	$C_{s\ max} = S_{D1} / (R/I)*T =$	**2.230**	>	**0.422**	OK!	(ASCE 7-16, Eqn.12.8-3)
				0.154		
	T_L (sec) = 12					(ASCE 7-16, Figure 22-16)
	$C_{s\ min} = 0.044 S_{DS} I =$	**0.037**	>	**0.010**	OK!	(ASCE 7-16, Eqn.12.8-5)
Approximate Fundamental Period:	$T_a = C_t H_n^x =$	**0.152**	<	T_L	OK!	(ASCE 7-16,Table12.8-2)
	C_t 0.020					
	x 0.75					
	H_n (ft) 15.00					
Seismic Response Coefficient: (for $S_1 \geq 0.6$)	$C_s = 0.5 S_1 / (R/I) =$	**0.150**	<	**0.422**	OK!	(ASCE 7-16, Eqn.12.8-6)

Base Shear: **V = 0.549 W**

Total Design Base Shear = 0.7 V = 0.384 W (ASD)

APPENDIX D – LEAD AND ASBESTOS TESTING

Asbestos Inspections of SLO
www.sloasbestos.com

LEAD PAINT/ASBESTOS SURVEY

Jack House

536 Marsh Street

San Luis Obispo, CA 93401

February 7, 2024

Prepared by:

Mike Bruffey
Asbestos Inspections SLO
9517 Carmel Road
Atascadero, CA 93422
Phone: (805) 235-0582

Prepared for:

City of San Luis Obispo
Sandra Golonka
919 Palm Street
San Luis Obispo, CA 93401
Office: (805) 781-7239

Asbestos Inspections of SLO
www.sloasbestos.com
9517 Carmel Road, Atascadero, CA 93422 Phone: (805) 235-0582 Email: bruffey@att.net

February 7, 2024

Sandra Golonka
City of San Luis Obispo Public Works
919 Palm Street
San Luis Obispo, CA 93401
Phone: (805) 781-7239

Re: Summary: Exterior Lead Paint and Limited Asbestos Survey
Jack House Widow's Walk Rail and Roofing
536 Marsh Street, San Luis Obispo, CA

Lead

The findings contained in this report are based on my inspection for suspect lead containing building components on the Widow's Walk railing and second floor railing at the Jack House, San Luis Obispo, CA. The inspection was conducted on January 29, 2024. The inspection on the exterior paint was conducted for Cal/OSHA and EPA compliance in conjunction with a planned component repair and replacement project. All selected components were visually inspected, and eight (8) representative samples of paint were obtained, documented, and sent to a laboratory for analysis. Samples were not collected from every painted surface, however the samples obtained are representative of the painted materials at this specific location. To obtain 4-6 in^2. of paint, I used a Bahco paint scraper to remove paint from the various components. **The levels of lead in the paint range from 190 ppm and up to 55,000 ppm and indicate lead-based paint is present.** The levels were reported by LA Testing in Huntington Beach, CA utilizing Flame AAS analysis. Lead based paint is anything above 5,000 ppm.

Asbestos

Samples of roofing materials were also collected from the Widow's Walk flat roof, sloped roof, and under the wood shake roof. One sample of gray/black mastic was also collected from the chimney and access hatch and another from the 2nd floor metal roof. Lab analysis indicated that the roofing materials and felt are all negative for asbestos, but the one sample of gray/black mastic on the chimney/access hatch contains 2% chrysotile asbestos. There is approximately 1-2 square feet of material present.

AISLO appreciates the opportunity to perform these services and I look forward to working with you on future projects. If you have any questions or comments regarding the information contained in this report or if I can be of further assistance, please contact me by phone or email.

Sincerely,

Mike Bruffey
Asbestos Inspections SLO - AISLO
CA Certified Asbestos Consultant #19-6499 | CDPH Lead Inspector Assessor LRC-00003723

SAMPLING AND ANALYSIS

This inspection involved sampling the exterior painted building components on the Widow's Walk at the Jack House and sending those samples to an accredited laboratory for analysis for the presence and amount of lead. The samples were analyzed by LA Testing using Flame Atomic Absorption Spectroscopy or ICP in accordance with the Environmental Protection Agency (EPA) Method (3050B/7420 FAA) or (3050B/6010D ICP) to identify lead content. The actual method used is noted on the Test Report from LA Testing. LA Testing is certified to analyze for lead in materials and is in Huntington Beach, CA. They are accredited by the American Industrial Hygiene Association, the National Institute of Standards and Technology, and the California Department of Public Health (CDPH). Please note the attached laboratory report. The following is a detailed description of the work performed at this location:

1. Submission of samples to an EPA accredited lab for analysis that provides a report containing:
    i. Sample identification number (Asbestos Inspections of SLO)
    ii. Laboratory sample identification number
    iii. Analytical technique
    iv. Quality control procedures
    v. Amount of lead (if any) in each material

2. Analyze the laboratory sample results and produce a comprehensive written report that includes:
    - Applicable Definitions
    - Summary of Laboratory Results
    - Conclusions and Recommendations
    - Disclaimers
    - Sample Location Diagram (if requested)
    - Metals Analysis of Paints
    - Analysis Request Form - Chain of Custody
    - CDPH Lead Hazard Evaluation Report Form 8552
    - Credentials – Inspector

APPLICABLE DEFINITIONS

Abatement – any set of measures designed to reduce or eliminate lead hazards or lead-based paint for public and residential buildings but does not include containment or cleaning.

Component – a structural element or fixture, such as a wall, floor, ceiling, door, window, molding, trim, railing, cabinet, gutter, or downspout.

Deteriorated Lead-Based Paint – lead-based paint or presumed LBP that is cracking, chalking, flaking, chipping, peeling, non-intact, failed or otherwise separating from a component.

Lead-Based Paint – paint or other surface coatings that contain an amount of lead equal to or in excess of:

(a) one milligram per square centimeter (1.0 mg/cm^2)
(b) half of one percent (.05%) by weight (5000 parts per million (ppm)

Lead Hazard – deteriorated lead-based paint, lead contaminated dust, lead contaminated soil, disturbing lead-based paint or presumed lead-based paint without containment, or any other nuisance which may result in persistent and quantifiable lead exposure.

Lead-Related Construction Work – any construction, alteration, painting, demolition, salvage, renovation, repair, or maintenance of any residential or public building, including preparation, and cleanup, that, by using or disturbing lead-containing material or soil, may result in significant exposure of adults or children to lead.

Presumed Lead-Based Paint – paint or surface coating affixed to a component in or on a structure constructed prior to January 1, 1978.

Renovation, Repair and Painting Rule (RRP) – requires that firms performing renovation, repair, and painting projects that disturb lead-based paint in homes, childcare facilities and pre-schools built before 1978 have their firm certified by EPA, use certified renovators who are trained by EPA-approved training providers and follow lead-safe work practices.

SUMMARY OF LAB RESULTS - LEAD

A total of 8 samples were collected, documented, and sent to LA Testing to be analyzed for lead content. Most of the paint was in fair condition and a small amount of flaking, peeling, and damaged paint was observed.

Sample #	Location or Room #	Material Description and Building Component	Lead Content ppm
L1	**Widow's Walk**	**8"x8" White wood post**	**1,400**
L2	**Widow's Walk**	**Circular rail white**	**55,000**
L3	**Widow's Walk**	**Under top rail blue paint**	**50,000**
L4	**Widow's Walk**	**Under Top Rail white**	**1,200**
L5	**Widow's Walk**	**Top of Post Round red**	**35,000**
L6	**Widow's Walk**	**Top flat portion of rail**	**190**
L7	**2nd Floor Deck**	**Ornate white railing**	**2,100**
L8	**2nd Floor Deck**	**Ornate white railing blue**	**920**

As a comparison, the EPA and CDPH consider a material to be lead-based paint when it exceeds .5% or 5,000 ppm (parts per million). In addition, the Consumer Product Safety Commission (CPSC) set a limit of .009% or 90 ppm of lead in paint for children's toys and CAL OSHA regulates workers who disturb lead coated surfaces at any detectable lead level.

High levels of lead were detected in the following samples (>5,000 ppm):

L2 White circular portion of rail
L3 Blue portion of top rail
L5 Round ornate component on top of rail

Moderate levels of lead were detected in the following samples (>1,000 – 4,999 ppm):

L1 8"x8" square railing post
L4 Under the top railing
L7 Ornate white railing

All other paint sampled was between <80 ppm and 920 ppm.

SUMMARY OF LAB RESULTS - ASBESTOS

Sample#	Location or Room #	Material Description	Asbestos Present	Type of Asbestos	% Asbestos	Quantity	Condition	NESHAPS Category
1	Roof WW	Angled Roof Roofing	NO	NA	NA	NA	NA	NA
2	Roof WW	Wood Shake Black Felt	NO	NA	NA	NA	NA	NA
3	Roof WW	Flat Silver Rolled Roofing	NO	NA	NA	NA	NA	NA
4	Roof WW	Gray/Black Mastic	YES	CH	2%	2 sq ft	Good	CATI NF
5	2nd Floor	Black Tar	NO	NA	NA	NA	NA	NA
6	2nd Floor	Black Tar	NO	NA	NA	NA	NA	NA

CONCLUSIONS and RECOMMENDATIONS

High levels of lead are present on three components sampled and analyzed at this location while some of the paint contained moderate to low levels of lead. Any LBP that is flaking and peeling or otherwise deteriorated is a lead hazard. This deteriorated paint should be removed by a lead abatement contractor certified and licensed in the State of California and stabilized to prevent further damage. Components similar to the components identified as containing lead-based paint, should be considered to also contain lead-based paint. Painted building components with any level of lead can be managed in place by removing deteriorated or damaged paint and stabilized in a maintenance program.

Due to the unknown painting history on this structure, paint not sampled and tested by the laboratory should be assumed to contain lead and if damaged, considered to be a lead hazard.

The State of California, Title 17, Division 1, and Chapter 8 pertains to all public and residential buildings in California and is enforced by the CDPH. Pursuant to Title 17 and EPA regulations, lead-based paint is defined as paint or other surface coatings containing an amount of lead equal to or greater than one milligram per square centimeter (1.0 mg/cm^2) or more than half of one percent >0.5% or 5,000 parts per million (ppm) by weight. Title 17 also defines a lead hazard as deteriorated lead-based paint, disturbing lead-based paint or presumed lead-based paint without containment, or any other nuisances which may result in persistent or quantifiable lead exposure. Additionally, worker exposure to materials containing lead during construction work is regulated by the Federal OSHA 29 CFR 1926.62(a) and CAL OSHA 8 CCR §1532.1(a). These regulations require worker protection during construction "…where lead or materials containing lead are present."

Any contractor conducting work which will disturb the painted surfaces in this location should receive proper notification of the lead content and the condition of the lead containing surfaces prior to demolition, renovation, or any activity which may disturb the material. All work should be conducted in compliance with the CAL OSHA Title 8, Section 1532.1, and all applicable EPA regulations.

These conclusions and recommendations are based on the requirements set forth by the Department of Housing and Urban Development *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing,* 40 CFR Part 61 and CAL OSHA Construction Safety Orders, Title 8, Chapter 4, Section 1532.1.

Work which disturbs lead based paint in quantities of more than 6 square feet inside or 20 square feet outside in a single-family residence or child occupied facility built prior to 1978, requires a certified renovator to conduct the work in accordance with EPA's 2008 Lead-Based Paint Renovation, Repair and Painting (RRP) Rule.

Any additional suspect paint or surface coating materials that are revealed by repair, renovation, remodel, or demolition activities should be assumed to be lead-based paint and managed as such, until properly sampled and analyzed.

DISCLAIMERS

The findings and conclusions rendered in this report are opinions based on the scope of work authorized by the client and laboratory analysis of samples collected during this inspection. This report does not reflect variations which may exist between sampling points. These variations cannot be anticipated, nor could they be entirely accounted for, despite exhaustive additional testing. My work has been performed in accordance with generally accepted practices in the field of lead consultation.

Enclosed with this report are the following documents:

Metals Analysis of Paints (Laboratory Report)
Analysis Request Form (Chain of Custody)
CDPH Form 8552 – Lead Hazard Evaluation Report
Asbestos Analysis of Bulk Materials (Laboratory Report)
Analysis Request Form (Chain of Custody)

Inspector Credentials

STATE OF CALIFORNIA Gavin Newsom, Governor

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health-Asbestos Certification
1750 Howe Avenue, Suite 460
Sacramento, CA 95825
(916) 574-2993 Office http://www.dir.ca.gov/dosh/asbestos.html actu@dir.ca.gov

904056499C **447**

May 03, 2023

Michael H Bruffey
9517 Carmel Road
Atascadero CA 93422

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please contact our office at the above address or email w any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Kevin Graulich
Principal Safety Engineer

Attachment: Certification Card

cc: File

Renewal – Card Attached

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
Michael Bruffey	Lead Inspector/Assessor	LRC-00003723	12/19/2024

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD

LA Testing
5431 Industrial Drive, Huntington Beach, CA 92649
Phone/Fax: (714) 828-4999 / (714) 828-4944
http://www.LATesting.com hblab@latesting.com

LA Testing Order: 332401677
CustomerID: AISL42
CustomerPO:
ProjectID:

Attn: **Mike Bruffey**
Asbestos Inspections SLO
9517 Carmel Road
Atascadero, CA 93422

Phone: (805) 235-0582
Fax:
Received: 1/31/2024 10:45 AM
Collected: 1/29/2024

Project: **JACK HOUSE SLO**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client SampleDescription	Collected	Analyzed	Weight	RDL	Lead Concentration
L1	1/29/2024	2/1/2024	0.2591 g	0.0080 % wt	0.14 % wt
332401677-0001	Site: WIDOW WALK 8X8" WHITE POST				
L2	1/29/2024	2/1/2024	0.2825 g	0.80 % wt	5.5 % wt
332401677-0002	Site: WIDOW WALK ROUND WHITE RAILING				
L3	1/29/2024	2/1/2024	0.3092 g	0.80 % wt	5.0 % wt
332401677-0003	Site: WIDOW WALK UNDER RAIL BLUE STRIP				
L4	1/29/2024	2/1/2024	0.2737 g	0.0080 % wt	0.12 % wt
332401677-0004	Site: WIDOW WALK RAIL EDGE				
L5	1/29/2024	2/1/2024	0.2706 g	0.80 % wt	3.5 % wt
332401677-0005	Site: WIDOW WALK TOP POST RED STRIP				
L6	1/29/2024	2/1/2024	0.2752 g	0.0080 % wt	0.019 % wt
332401677-0006	Site: WIDOW WALK TOP FLAT WH RAIL				
L7	1/29/2024	2/1/2024	0.3003 g	0.0080 % wt	0.21 % wt
332401677-0007	Site: 2ND FLOOR WHITE ORNATE RAIL				
L8	1/29/2024	2/1/2024	0.2672 g	0.0080 % wt	0.092 % wt
332401677-0008	Site: 2ND FLOOR BLUE STRIP				

Michael Chapman

Michael Chapman, Laboratory Manager
or other approved signatory

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Analysis following Lead in Paint by LA Testing SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by LA Testing Huntington Beach, CA AIHA LAP, LLC-ELLAP Accredited #101650, CA ELAP 1406

Initial report from 02/05/2024 08:36:53

LA Testing

5431 Industrial Drive Huntington Beach, CA 92649

Tel/Fax: (714) 828-4999 / (714) 828-4944

http://www.LATesting.com / hblab@latesting.com

LA Testing Order:	332401673
Customer ID:	AISL42
Customer PO:	
Project ID:	

Attention:	Mike Bruffey	**Phone:**	(805) 235-0582
	Asbestos Inspections SLO	**Fax:**	
	9517 Carmel Road	**Received Date:**	01/31/2024 10:45 AM
	Atascadero, CA 93422	**Analysis Date:**	02/06/2024
		Collected Date:	01/29/2024
Project:	JACK HOUSE SLO		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1 *332401673-0001*	WIDOWS WALK ROLLED ROOFING	Gray/Black Fibrous Heterogeneous	15% Synthetic	85% Non-fibrous (Other)	None Detected
2 *332401673-0002*	WIDOWS WALK FELT UNDER WOOD SHG	Brown/Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
3-Roofing 1 *332401673-0003*	WIDOWS WALK FLAT ROOF / LAYERS	Gray/Black Fibrous Heterogeneous	15% Glass	85% Non-fibrous (Other)	None Detected
3-Roofing 2 *332401673-0003A*	WIDOWS WALK FLAT ROOF / LAYERS	Black Fibrous Homogeneous	18% Cellulose	82% Non-fibrous (Other)	None Detected
3-Insulation *332401673-0003B*	WIDOWS WALK FLAT ROOF / LAYERS	Brown Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
4-Mastic *332401673-0004*	MASTIC / TAR ON CHIMNEY / HATCH	Gray/Black Fibrous Heterogeneous	8% Cellulose	90% Non-fibrous (Other)	2% Chrysotile
4-Tar *332401673-0004A*	MASTIC / TAR ON CHIMNEY / HATCH				Layer Not Present
5-Mastic *332401673-0005*	TAR / MASTIC ON METAL ROOF 2ND FLR				Layer Not Present
5-Tar *332401673-0005A*	TAR / MASTIC ON METAL ROOF 2ND FLR	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
6-Mastic *332401673-0006*	TAR / MASTIC ON METAL ROOF 2ND FLR				Layer Not Present
6-Tar *332401673-0006A*	TAR / MASTIC ON METAL ROOF 2ND FLR	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 02/06/2024 18:42:38

LA Testing

5431 Industrial Drive Huntington Beach, CA 92649

Tel/Fax: (714) 828-4999 / (714) 828-4944

http://www.LATesting.com / hblab@latesting.com

LA Testing Order:	332401673
Customer ID:	AISL42
Customer PO:	
Project ID:	

Analyst(s)

Kaylin Luciani (4)

Thanh Nguyen (4)

Michael Chapman, Laboratory Manager
or Other Approved Signatory

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Samples analyzed by LA Testing Huntington Beach, CA NVLAP Lab Code 101384-0, CA ELAP 1406

Initial report from: 02/06/2024 18:42:38

OrderID: 332401677

Lead Chain of Custody

EMSL Order Number / Lab Use Only

#332401677

LA TESTING
5431 Industrial Drive
Huntington Beach, CA 92649
PHONE: (714) 828-4999
EMAIL: huntingtonbeachlab@lates

Customer Information		Billing Information	
Customer ID:	AISL42	Billing ID:	
Company Name:	Asbestos Inspections SLO	Company Name:	Asbestos Inspections SLO
Contact Name:	Mike Bruffey	Billing Contact:	Mike Bruffey
Street Address:	9517 Carmel Road	Street Address:	9517 Carmel Road
City, State, Zip:	Atascadero CA 93422	City, State, Zip:	Atascadero CA 93422
Country:	US	Country:	US
Phone:	805-235-0582	Phone:	805-235-0582
Email(s) for Report:	bruffbruffey@gmail.com	Email(s) for Invoice:	same as

Project Information

Project Name/No:	Jack House SLO	Purchase Order:	
EMSL LIMS Project ID: (If applicable, EMSL will provide)		US State where samples collected:	CA
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)		
Sampled By Name:	Mike Bruffey	Sampled By Signature:	
No. of Samples in Shipment	8		

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☑ 1 Week ☐ 2 Week

Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am.

MATRIX	METHOD	INSTRUMENT	REPORTING LIMIT	SELECTION
CHIPS ☑ % by wt. ☐ ppm (mg/kg) ☐ mg/cm²	SW 846-7000B	Flame Atomic Absorption	0.008% (80ppm)	☑
*Reporting Limit based on a minimum 0.25g sample weight	SW 846-6010D*	ICP-OES	0.0004% (4ppm)	☐
AIR	NIOSH 7082	Flame Atomic Absorption	4µg/filter	☐
	NIOSH 7300M / NIOSH 7303M	ICP-OES	0.5µg/filter	☐
	NIOSH 7300M / NIOSH 7303M	ICP-MS	0.05µg/filter	☐
WIPE ☐ ASTM ☐ NON-ASTM	SW 846-7000B	Flame Atomic Absorption	10µg/wipe	☐
*If no box is checked, non-ASTM Wipe is assumed	SW 846-6010D*	ICP-OES	1.0µg/wipe	☐
TCLP	SW 846-1311 / 7000B / SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	SW 846-1311 / SW 846-6010D*	ICP-OES	0.1 mg/L (ppm)	☐
SPLP	SW 846-1312 / 7000B / SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	SW 846-1312 / SW 846-6010D*	ICP-OES	0.1 mg/L (ppm)	☐
TTLC	22 CCR App. II, 7000B	Flame Atomic Absorption	40mg/kg (ppm)	☐
	22 CCR App. II, SW 846-6010D*	ICP-OES	2mg/kg (ppm)	☐
STLC	22 CCR App. II, 7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	22 CCR App. II, SW 846-6010D*	ICP-OES	0.1 mg/L (ppm)	☐
Soil	SW 846-7000B	Flame Atomic Absorption	40mg/kg (ppm)	☐
	SW 846-6010D*	ICP-OES	2mg/kg (ppm)	☐
Wastewater	SM 3111B / SW 846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
Unpreserved ☐ / Preserved with HNO3 ☐ PH<2	EPA 200.7	ICP-OES	0.020 mg/L (ppm)	☐
Drinking Water	EPA 200.5	ICP-OES	0.003 mg/L (ppm)	☐
Unpreserved ☐ / Preserved with HNO3 ☐ PH<2	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	☐
TSP/SPM Filter	40 CFR Part 50	ICP-OES	12 µg/filter	☐
Other:				☐

Sample Number	Sample Location	~~Volume / Area~~	Date / Time Sampled
L1	Widow Walk 8x8" White Post		1-29-24/230
L2	Widow Walk Round White Railing		
L3	Widow Walk Under Rail Blue strip		
L4	Widow Walk Rail edge		
L5	Widow Walk top Post Red strip		

Method of Shipment:	Fed Ex S.O.	Sample Condition Upon Receipt:	
Relinquished by: Mike Bruffey	Date/Time: 1-30-24/100	Received by: Jonathan Sanford (EFX)	Date/Time 1/31/24 10:45a
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-25 Lead R16 4/19/2021

*6010C Available Upon Request

☐ **AGREE TO ELECTRONIC SIGNATURE** (By checking, I consent to signing this Chain of Custody document by electronic signature.)

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OrderID: 332401677

LA TESTING

Lead Chain of Custody

EMSL Order Number / Lab Use Only

#332401677

LATesting
5431 Industrial Drive

Huntington Beach, CA 92649
PHONE: (714) 828-4999
EMAIL: huntingtonbeachlab@lates

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Sample Number	Sample Location	~~Volume / Area~~	Date / Time Sampled
L6	Widow Walk Top Flat Wh rail		1-29-24/230
L7	2nd Floor White ornate rail		↓
L8	2nd Floor Blue strip		↓

Method of Shipment: Fed Ex S.O.		Sample Condition Upon Receipt:	
Relinquished by: Mike Bruffey MB	Date/Time: 1-30-24/100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-25 Lead R16 4/19/2021

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1. This label may only be used on FedEx packaging: FedEx Envelope Pack or FedEx Box. This free shipping label is not valid for use on non-standard FedEx packages, nor coolers or other large boxes.
2. Valid for shipment of the following samples only: Asbestos testing of bulk material samples, wipe/dust samples, or air sample cassettes; Lead analysis of paint chips, air samples, or wipe samples; Microbiology air samples or bulk samples, tape lift samples, and/or swab samples; Metals (Air, Chips & Wipes), IH Organics (Formaldehyde, Methamphetamine, Isocyanates, BTEX, etc.), Combustion By-Products (Soot)/Material Identification, and Silica, Respirable Dust/Total Dust.
3. This label is not valid for shipment of any sample that requires a cooler or any other sample type not specifically described herein.
4. US: The package shipment must exceed a minimum of $100 in analytical fees. If this minimum is not met, a minimum shipping fee of $25 will be added to the analysis invoice. Canada: The package shipment must exceed a minimum of $150 in analytical fees. If this minimum is not met, a minimum shipping fee of $30 will be added to the analysis invoice.
5. Not valid for the shipping of any hazardous materials or items prohibited to be shipped by these means.
6. Any additional fees added by FedEx will be charged back to the customer who initiated the shipment, including, but not limited to: Custom pickup fees from FedEx, excessive weight fees, any surcharge items, etc.
7. This label is not valid for weekend or holiday deliveries.
8. Excludes Summa Canisters, Equipment Rental and Loaner Returns.
9. Valid within the Continental United States or Canada. Label may not be utilized from US to Canada, or Canada to US.
10. Valid for only those accounts pre-approved to use this service. This courtesy shipping service may be terminated at any time by EMSL for any customer accounts that are not in good standing due to late payment /COD Status, or any other reason in the sole determination of EMSL.

OrderID: 332401673

California Customers

EMSL Order Number / Lab Use Only

#332401673

LATesting
5431 Industrial Drive

Huntington Beach, CA 92649
PHONE: (714) 828-4999
EMAIL: huntingtonbeachlab@la

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information		Billing Information	
Customer ID:	AISL42	Billing ID:	
Company Name:	Asbestos Inspections SLO	Company Name:	Asbestos Inspections SLO
Contact Name:	Mike Bruffey	Billing Contact:	Mike Bruffey
Street Address:	9517 Carmel Road	Street Address:	9517 Carmel Road
City, State, Zip:	Atascadero CA 93422	City, State, Zip:	Atascadero CA 93422
Country:	US	Country:	US
Phone:	805-235-0582	Phone:	805-235-0582
Email(s) for Report:	bruffbruffey@gmail.com	Email(s) for Invoice:	same as

Project Information

Project Name/No: Jack House SLO

Purchase Order:

EMSL LIMS Project ID: (If applicable, EMSL will provide)

US State where samples collected: CA

State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)

Sampled By Name: Mike Bruffey

Sampled By Signature: Mike Bruffey

No. of Samples in Shipment: 6

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☑ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☑ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%) ☐ 1,200 (<0.08%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%) ☐ 1,200 (<0.08%)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ CARB Modified AHERA
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM CARB 435 - Level A (<0.25%)
- ☐ PLM CARB 435 - Level B (<0.1%)
- ☐ TEM CARB 435 - Level B (<0.1%)
- ☐ TEM CARB 435 - Level C (<0.01%)
- ☐ CARB Guidance Compliance Prep
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)

Other

*Please call with your project-specific requirements.

☐ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	~~Volume, Area or Homogeneous Area~~	Date / Time Sampled (~~Air Monitoring Only~~)
1	Widows Walk Rolled roofing		1-29-24/230
2	Widows Walk Felt under wood shg		
3	Widows Walk Flat roof/layers		
4	Mastic/tar on Chimney/Hatch		
5	Tar/mastic on metal roof 2nd Flr		
6	Tar/mastic on metal roof 2nd Flr		

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Method of Shipment:	Fed Ex SO	Sample Condition Upon Receipt:	
Relinquished by: Mike Bruffey	Date/Time: 1-30-24/100	Received by: Jonathan Santoro (EFX)	Date/Time: 1/31/24 10:45a
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-51 Asbestos CA Clients R3 03/24/2021

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1. This label may only be used on FedEx packaging: FedEx Envelope Pack or FedEx Box. This free shipping label is not valid for use on non-standard FedEx packages, nor coolers or other large boxes.
2. Valid for shipment of the following samples only: Asbestos testing of bulk material samples, wipe/dust samples, or air sample cassettes; Lead analysis of paint chips, air samples, or wipe samples; Microbiology air samples or bulk samples, tape lift samples, and/or swab samples; Metals (Air, Chips & Wipes), IH Organics (Formaldehyde, Methamphetamine, Isocyanates, BTEX, etc.), Combustion By-Products (Soot)/Material Identification, and Silica, Respirable Dust/Total Dust.
3. This label is not valid for shipment of any sample that requires a cooler or any other sample type not specifically described herein.
4. US: The package shipment must exceed a minimum of $100 in analytical fees. If this minimum is not met, a minimum shipping fee of $25 will be added to the analysis invoice. Canada: The package shipment must exceed a minimum of $150 in analytical fees. If this minimum is not met, a minimum shipping fee of $30 will be added to the analysis invoice.
5. Not valid for the shipping of any hazardous materials or items prohibited to be shipped by these means.
6. Any additional fees added by FedEx will be charged back to the customer who initiated the shipment, including, but not limited to: Custom pickup fees from FedEx, excessive weight fees, any surcharge items, etc.
7. This label is not valid for weekend or holiday deliveries.
8. Excludes Summa Canisters, Equipment Rental and Loaner Returns.
9. Valid within the Continental United States or Canada. Label may not be utilized from US to Canada, or Canada to US.
10. Valid for only those accounts pre-approved to use this service. This courtesy shipping service may be terminated at any time by EMSL for any customer accounts that are not in good standing due to late payment /COD Status, or any other reason in the sole determination of EMSL.

LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead Hazard Evaluation 1-29-24

Section 2 — Type of Lead Hazard Evaluation (Check one box only)

☑ Lead Inspection ☐ Risk assessment ☐ Clearance Inspection ☐ Other (specify) _____

Section 3 — Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)]	City	County	Zip Code
536 Marsh Street	San Luis Obispo	San Luis Obispo	93401

Construction date (year) of structure	Type of structure		Children living in structure?	
1882	☐ Multi-unit building	☐ School or daycare	☐ Yes	☑ No
	☐ Single family dwelling	☑ Other Historical Building	☐ Don't Know	

Section 4 — Owner of Structure (if business/agency, list contact person)

Name	Telephone number
City of San Luis Obispo	805-781-4154

Address [number, street, apartment (if applicable)]	City	State	Zip Code
990 Palm Street	San Luis Obispo	CA	93401

Section 5 — Results of Lead Hazard Evaluation (check all that apply)

☐ No lead-based paint detected ☑ Intact lead-based paint detected ☐ Deteriorated lead-based paint detected

☑ No lead hazards detected ☐ Lead-contaminated dust found ☐ Lead-contaminated soil found ☐ Other _____

Section 6 — Individual Conducting Lead Hazard Evaluation

Name	Telephone number
Michael Bruffey	805-235-0582

Address [number, street, apartment (if applicable)]	City	State	Zip Code
9517 Carmel Road	Atascadero	CA	93422

CDPH certification number	Signature	Date
LRC-00003723		2-7-24

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)

Section 7 — Attachments

A. A foundation diagram or sketch of the structure indicating the specifc locations of each lead hazard or presence of lead-based paint;
B. Each testing method, device, and sampling procedure used;
C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector

Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:

California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804-6403
Fax: (510) 620-5656

CDPH 8552 (8/19)

APPENDIX E – SAFTEY MANAGER REVIEW AND RECOMMENDATION

RE: 536 Marsh, Jack House Widow's Walk Railing Restoration – Lead Paint Remediation

Jake Parsons, Safety Manager

Attn: Sandra Golonka, Public Works Engineer

Scope (per 100% drawings, page 13, #12)

(e) decorative wood roof railing to be rehabilitated with railing to be disassembled into individual elements & tagged for specific location in assembly, and all paint to be stripped, method to be determined by contractor per specifications. After paint is stripped, prepare a summary list of historic rail elements that will need to be replaced in-kind, due to deterioration, and submit to city. All replacement elements shall be fabricated using the shape and profile of the remaining (e) elements, that are to be re-installed, as templates. dutchman repairs should be used before full replacement of element. epoxy wood patching limited to 1 cubic inch of volume per patch following manufacturer's minimum thickness edge. all replacement wood must be naturally weather & pest resistant, no exposed ptdf. see sht A8.03

Summary of Recommendations

Contractors shall uphold all work practices which are compliant with the EPA, HUD, Federal Government and Department of Toxic Substance's requirements for work with lead-paint hazards.

The contractor shall reference and apply Federal, State and Local guidelines with specific attention to the following:

1) notifications to general public and posting of appropriate signage
2) isolation of worksite, by locked means where needed to restrict the entry of the general public and unknown persons,
3) isolation of all potential "dust hazard" entry and exit points,
4) dust control at all times: wetting and saturation methods preferred (HUD Guidelines, Chapter 12: B) including the re-capture of hazardous wastewater,
5) wrapping and containing components (HUD Guidelines, Chapter 12: B)
6) securing of worksite at all times, including locked-out locations for hazardous waste accumulation (HUD Guidelines, Chapter 12: 2)
7) appropriate use of tools and reduction of means when possible, to reduce the disturbance of lead-based paint hazards
8) donning of sufficient personal protective equipment including respiratory protection (29 CFR 1926.62 Appendix B and Chapter 9)
9) identification of licensed waste hauler *prior to the start of work*
10) identification of certified disposal site *prior to the start of work*
11) remediation of all wastes as "hazardous," appropriate and secure containment, waste hauling and documentation by use of a uniform hazardous waste manifest,
12) sufficient daily cleanliness including but not limited to
    a. decontamination stations for employees (HUD Guidelines, Chapter 9: 13)

b. waste accumulation site for disposable PPE
c. emergency eye-wash station(s) (HUD Guidelines, Chapter 12: 9)

Per the expectation of regulatory oversite on this matter 40 CFR §745.65

Work practice requirements. Applicable certification, occupant protection, and clearance requirements and work practice standards are found in regulations issued by EPA at 40 CFR part 745, subpart L and in regulations issued by the Department of Housing and Urban Development (HUD) at 24 CFR part 35, subpart R. The work practice standards in those regulations do not apply when treating paint-lead hazards of less than:

(1) Two square feet of deteriorated lead-based paint per room or equivalent,

(2) Twenty square feet of deteriorated paint on the exterior building, or

(3) Ten percent of the total surface area of deteriorated paint on an interior or exterior type of component with a small surface area.

Per the assumption of lead-paint hazard 40 CFR §745.65

A paint-lead hazard is any of the following:

(1) Any lead-based paint on a friction surface that is subject to abrasion and where the lead dust levels on the nearest horizontal surface underneath the friction surface (e.g., the window sill, or floor) are equal to or greater than the dust-lead hazard levels identified in paragraph (b) of this section.

(2) Any damaged or otherwise deteriorated lead-based paint on an impact surface that is caused by impact from a related building component (such as a door knob that knocks into a wall or a door that knocks against its door frame.

40 CFR §745.85 Work Practice Standard

Exterior renovations. The firm must:

(A) Close all doors and windows within 20 feet of the renovation. On multi-story buildings, close all doors and windows within 20 feet of the renovation on the same floor as the renovation, and close all doors and windows on all floors below that are the same horizontal distance from the renovation.

(B) Ensure that doors within the work area that will be used while the job is being performed are covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through while confining dust and debris to the work area.

(C) Cover the ground with plastic sheeting or other disposable impermeable material extending 10 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to collect falling paint debris, whichever is greater, unless the property line

prevents 10 feet of such ground covering. Ground containment measures may stop at the edge of the vertical barrier when using a vertical containment system.

(D) If the renovation will affect surfaces within 10 feet of the property line, the renovation firm must erect vertical containment or equivalent extra precautions in containing the work area to ensure that dust and debris from the renovation does not contaminate adjacent buildings or migrate to adjacent properties. Vertical containment or equivalent extra precautions in containing the work area may also be necessary in other situations in order to prevent contamination of other buildings, other areas of the property, or adjacent buildings or properties.

(3) ***Prohibited and restricted practices.*** The work practices listed below are prohibited or restricted during a renovation as follows:

(i) Open-flame burning or torching of painted surfaces is prohibited.

(ii) The use of machines designed to remove paint or other surface coatings through high speed operation such as sanding, grinding, power planning, needle gun, abrasive blasting, or sandblasting, is prohibited on painted surfaces unless such machines have shrouds or containment systems and are equipped with a HEPA vacuum attachment to collect dust and debris at the point of generation. Machines must be operated so that no visible dust or release of air occurs outside the shroud or containment system.

(iii) Operating a heat gun on painted surfaces is permitted only at temperatures below 1,100 degrees Fahrenheit.

(4) ***Waste from renovations.***

(i) Waste from renovation activities must be contained to prevent releases of dust and debris before the waste is removed from the work area for storage or disposal. If a chute is used to remove waste from the work area, it must be covered.

(ii) At the conclusion of each work day and at the conclusion of the renovation, waste that has been collected from renovation activities must be stored under containment, in an enclosure, or behind a barrier that prevents release of dust and debris out of the work area and prevents access to dust and debris.

(iii) When the firm transports waste from renovation activities, the firm must contain the waste to prevent release of dust and debris.

(5) ***Cleaning the work area.*** After the renovation has been completed, the firm must clean the work area until no dust, debris or residue remains.

(i) ***Interior and exterior renovations.*** The firm must:

(A) Collect all paint chips and debris and, without dispersing any of it, seal this material in a heavy-duty bag.

(B) Remove the protective sheeting. Mist the sheeting before folding it, fold the dirty side inward, and either tape shut to seal or seal in heavy-duty bags. Sheeting used to isolate contaminated rooms from non-contaminated rooms must remain in place until after the cleaning and removal of other sheeting. Dispose of the sheeting as waste.

(ii) ***Additional cleaning for interior renovations.*** The firm must clean all objects and surfaces in the work area and within 2 feet of the work area in the following manner, cleaning from higher to lower:

(A) ***Walls.*** Clean walls starting at the ceiling and working down to the floor by either vacuuming with a HEPA vacuum or wiping with a damp cloth.

(B) ***Remaining surfaces.*** Thoroughly vacuum all remaining surfaces and objects in the work area, including furniture and fixtures, with a HEPA vacuum. The HEPA vacuum must be equipped with a beater bar when vacuuming carpets and rugs.

(C) Wipe all remaining surfaces and objects in the work area, except for carpeted or upholstered surfaces, with a damp cloth. Mop uncarpeted floors thoroughly, using a mopping method that keeps the wash water separate from the rinse water, such as the 2-bucket mopping method, or using a wet mopping system.

Standards for post-renovation cleaning verification —

(1) ***Interiors.***

(i) A certified renovator must perform a visual inspection to determine whether dust, debris or residue is still present. If dust, debris or residue is present, these conditions must be removed by re-cleaning and another visual inspection must be performed.

(ii) After a successful visual inspection, a certified renovator must:

(A) Verify that each windowsill in the work area has been adequately cleaned, using the following procedure.

(*1*) Wipe the windowsill with a wet disposable cleaning cloth that is damp to the touch. If the cloth matches or is lighter than the cleaning verification card, the windowsill has been adequately cleaned.

(*2*) If the cloth does not match and is darker than the cleaning verification card, re-clean the windowsill as directed in paragraphs (a)(5)(ii)(B) and (a)(5)(ii)(C) of this section, then either use a new cloth or fold the used cloth in such a way that an unused surface is exposed, and wipe the surface again. If the cloth matches or is lighter than the cleaning verification card, that windowsill has been adequately cleaned.

(*3*) If the cloth does not match and is darker than the cleaning verification card, wait for 1 hour or until the surface has dried completely, whichever is longer.

(*4*) After waiting for the windowsill to dry, wipe the windowsill with a dry disposable cleaning cloth. After this wipe, the windowsill has been adequately cleaned.

(B) Wipe uncarpeted floors and countertops within the work area with a wet disposable cleaning cloth. Floors must be wiped using an application device with a long handle and a head to which the cloth is attached. The cloth must remain damp at all times while it is being used to wipe the surface for post-renovation cleaning verification. If the surface within the work area is greater than 40 square feet, the surface within the work area must be divided into roughly equal sections that are each less than 40 square feet. Wipe each such section separately with a new wet disposable cleaning cloth. If the cloth used to wipe each section of the surface within the work area matches the cleaning verification card, the surface has been adequately cleaned.

(*1*) If the cloth used to wipe a particular surface section does not match the cleaning verification card, re-clean that section of the surface as directed in paragraphs (a)(5)(ii)(B) and (a)(5)(ii)(C) of this section, then use a new wet disposable cleaning cloth to wipe that section again. If the cloth matches the cleaning verification card, that section of the surface has been adequately cleaned.

(*2*) If the cloth used to wipe a particular surface section does not match the cleaning verification card after the surface has been re-cleaned, wait for 1 hour or until the entire surface within the work area has dried completely, whichever is longer.

(*3*) After waiting for the entire surface within the work area to dry, wipe each section of the surface that has not yet achieved post-renovation cleaning verification with a dry disposable cleaning cloth. After this wipe, that section of the surface has been adequately cleaned.

(iii) When the work area passes the post-renovation cleaning verification, remove the warning signs.

(2) ***Exteriors.*** A certified renovator must perform a visual inspection to determine whether dust, debris or residue is still present on surfaces in and below the work area, including windowsills and the ground. If dust, debris or residue is present, these conditions must be eliminated and another visual inspection must be performed. When the area passes the visual inspection, remove the warning signs.

(c) ***Optional dust clearance testing.*** Cleaning verification need not be performed if the contract between the renovation firm and the person contracting for the renovation or another Federal, State, Territorial, Tribal, or local law or regulation requires:

(1) The renovation firm to perform dust clearance sampling at the conclusion of a renovation covered by this subpart.

(2) The dust clearance samples are required to be collected by a certified inspector, risk assessor or dust sampling technician.

(3) The renovation firm is required to re-clean the work area until the dust clearance sample results are below the clearance standards in § 745.227(e)(8) or any applicable State, Territorial, Tribal, or local standard.

40 CFR §745.86 Recordkeeping and Reporting Requirements

Firms performing renovations must retain and, if requested, make available to EPA all records necessary to demonstrate compliance with this subpart for a period of 3 years following completion of the renovation. This 3-year retention requirement does not supersede longer obligations required by other provisions for retaining the same documentation, including any applicable State or Tribal laws or regulations.

(b) Records that must be retained pursuant to paragraph (a) of this section shall include (where applicable):

(1) Records or reports certifying that a determination had been made that lead-based paint was not present on the components affected by the renovation, as described in § 745.82(a). These records or reports include:

(i) Reports prepared by a certified inspector or certified risk assessor (certified pursuant to either Federal regulations at § 745.226 or an EPA-authorized State or Tribal certification program).

(ii) Records prepared by a certified renovator after using EPA-recognized test kits, including an identification of the manufacturer and model of any test kits used, a description of the components that were tested including their locations, and the result of each test kit used.

(iii) Records prepared by a certified renovator after collecting paint chip samples, including a description of the components that were tested including their locations, the name and address of the NLLAP-recognized entity performing the analysis, and the results for each sample.

(2) Signed and dated acknowledgments of receipt as described in § 745.84(a)(1)(i), (a)(2)(i), (b)(1)(i), (c)(1)(i)(A), and (c)(1)(ii)(A).

(3) Certifications of attempted delivery as described in § 745.84(a)(2)(i) and (c)(1)(ii)(A).

(4) Certificates of mailing as described in § 745.84(a)(1)(ii), (a)(2)(ii), (b)(1)(ii), (c)(1)(i)(B), and (c)(1)(ii)(B).

(5) Records of notification activities performed regarding common area renovations, as described in § 745.84(b)(3) and (b)(4), and renovations in child-occupied facilities, as described in § 745.84(c)(2).

(6) Documentation of compliance with the requirements of § 745.85, including documentation that a certified renovator was assigned to the project, that the certified renovator provided on-the-job training for workers used on the project, that the certified renovator performed or directed workers who performed all of the tasks described in § 745.85(a), and that the certified renovator performed the post-renovation cleaning verification described in § 745.85(b). If the renovation firm was unable to comply with all of the requirements of this rule due to an emergency as defined in § 745.82, the firm must document the nature of the emergency and the provisions of the rule that were not followed. This documentation must include a copy of the certified renovator's training certificate, and a certification by the certified renovator assigned to the project that:

(i) Training was provided to workers (topics must be identified for each worker).

(ii) Warning signs were posted at the entrances to the work area.

(iii) If test kits were used, that the specified brand of kits was used at the specified locations and that the results were as specified.

(v) The work area was contained by:

(A) Removing or covering all objects in the work area (interiors).

(B) Closing and covering all HVAC ducts in the work area (interiors).

(C) Closing all windows in the work area (interiors) or closing all windows in and within 20 feet of the work area (exteriors).

(D) Closing and sealing all doors in the work area (interiors) or closing and sealing all doors in and within 20 feet of the work area (exteriors).

(E) Covering doors in the work area that were being used to allow passage but prevent spread of dust.

(F) Covering the floor surface, including installed carpet, with taped-down plastic sheeting or other impermeable material in the work area 6 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to contain the dust, whichever is greater (interiors) or covering the ground with plastic sheeting or other disposable impermeable material anchored to the building extending 10 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to collect falling paint debris, whichever is greater, unless the property line prevents 10 feet of such ground covering, weighted down by heavy objects (exteriors).

(G) Installing (if necessary) vertical containment to prevent migration of dust and debris to adjacent property (exteriors).

(iv) If paint chip samples were collected, that the samples were collected at the specified locations, that the specified NLLAP-recognized laboratory analyzed the samples, and that the results were as specified.

(vi) Waste was contained on-site and while being transported off-site.

(vii) The work area was properly cleaned after the renovation by:

(A) Picking up all chips and debris, misting protective sheeting, folding it dirty side inward, and taping it for removal.

(B) Cleaning the work area surfaces and objects using a HEPA vacuum and/or wet cloths or mops (interiors).

(viii) The certified renovator performed the post-renovation cleaning verification (the results of which must be briefly described, including the number of wet and dry cloths used).

(c)

(1) When the final invoice for the renovation is delivered or within 30 days of the completion of the renovation, whichever is earlier, the renovation firm must provide information pertaining to compliance with this subpart to the following persons:

(i) The owner of the building; and, if different,

(ii) An adult occupant of the residential dwelling, if the renovation took place within a residential dwelling, or an adult representative of the child-occupied facility, if the renovation took place within a child-occupied facility.

(2) When performing renovations in common areas of multi-unit target housing, renovation firms must post the information required by this subpart or instructions on how interested occupants can obtain a copy of this information. This information must be posted in areas where it is likely to be seen by the occupants of all of the affected units.

(3) The information required to be provided by paragraph (c) of this section may be provided by completing the sample form titled “Sample Renovation Recordkeeping Checklist” or a similar form containing the test kit information required by § 745.86(b)(1)(ii) and the training and work practice compliance information required by § 745.86(b)(6).

(d) If dust clearance sampling is performed in lieu of cleaning verification as permitted by § 745.85(c), the renovation firm must provide, when the final invoice for the renovation is

delivered or within 30 days of the completion of the renovation, whichever is earlier, a copy of the dust sampling report to:

(1) The owner of the building; and, if different,

(2) An adult occupant of the residential dwelling, if the renovation took place within a residential dwelling, or an adult representative of the child-occupied facility, if the renovation took place within a child-occupied facility.

(3) When performing renovations in common areas of multi-unit target housing, renovation firms must post these dust sampling reports or information on how interested occupants of the housing being renovated can obtain a copy of the report. This information must be posted in areas where they are likely to be seen by the occupants of all of the affected units

40 CFR §745.87 Enforcement and Inspection

Failure or refusal to comply with any provision of this subpart is a violation of TSCA section 409 (15 U.S.C. 2689).

(b) Failure or refusal to establish and maintain records or to make available or permit access to or copying of records, as required by this subpart, is a violation of TSCA sections 15 and 409 (15 U.S.C. 2614 and 2689).

(c) Failure or refusal to permit entry or inspection as required by 40 CFR 745.87 and TSCA section 11 (15 U.S.C. 2610) is a violation of sections 15 and 409 (15 U.S.C. 2614 and 2689).

(d) Violators may be subject to civil and criminal sanctions pursuant to TSCA section 16 (15 U.S.C. 2615) for each violation.

(e) Lead-based paint is assumed to be present at renovations covered by this subpart. EPA may conduct inspections and issue subpoenas pursuant to the provisions of TSCA section 11 (15 U.S.C. 2610) to ensure compliance with this subpart.

Regulatory References

The HUD Guidelines for the Evaluation and Control of Lead-based Paint in Housing

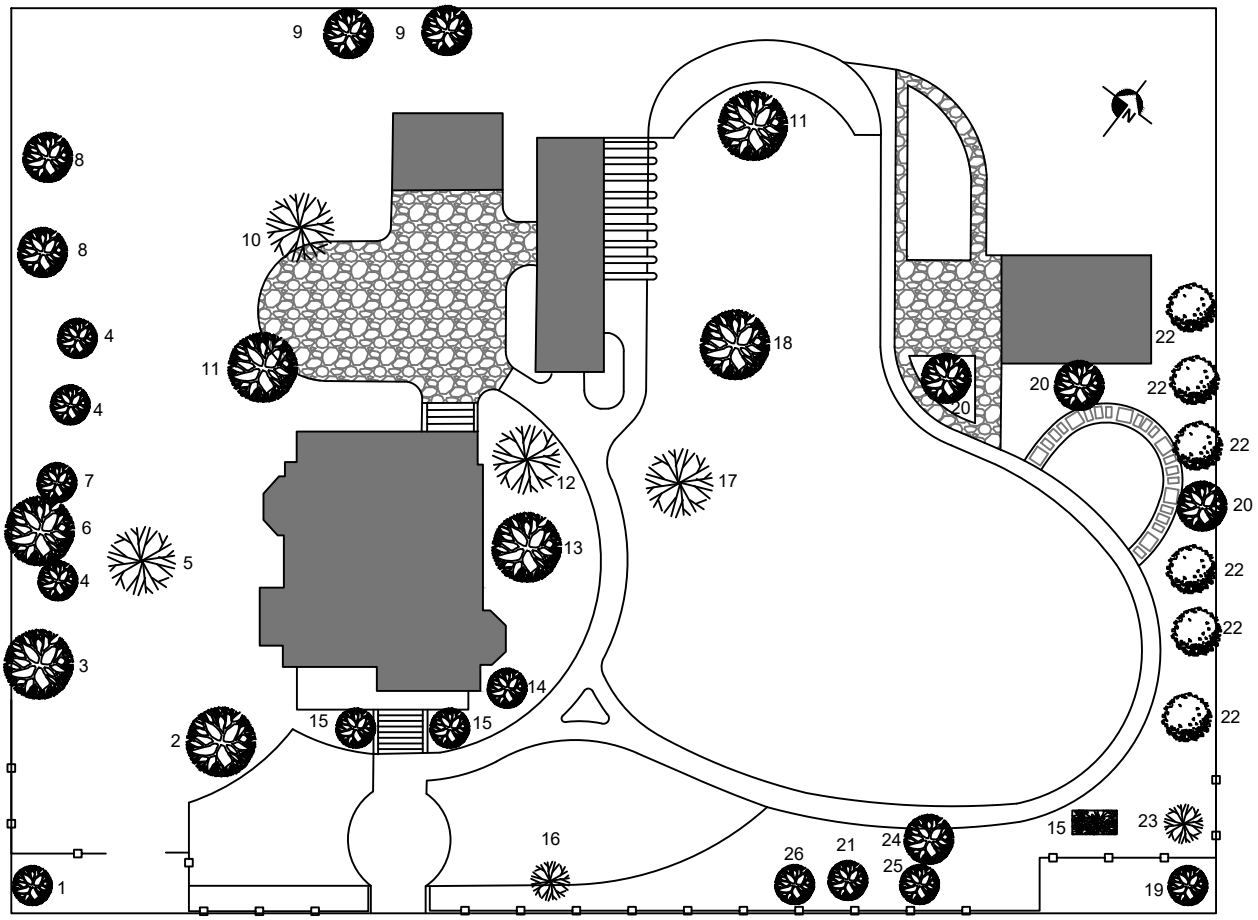
40 CFR §745 Lead Based Paint Hazards

29 CFR 1910.120 Subpart H Hazardous Materials

29 CFR 1926.65 Hazardous Waste Operations and Emergency Response

Toxic Substance Control Act (Title 15 U.S.C 2682 and 2686)

APPENDIX F – HISTORICAL PLANTING MAP



MARSH STREET

	Common Name	Botanical Name
1.	Horse Chestnut	Aesculus Carnea
2.	Southern Magnolia	Magnolia Grandiflora
3.	California White Oak	Quercus Lobata
4.	Tobira	Pittosporum Tobira
5.	American Sweet Gum	Liquidambar Styraciflua
6.	White Dove Tree	Davidia Involucrata
7.	Fruiting Quince	Cydonia Oblonga
8.	Olive	Olea Europaea
9.	Victorian Box	Pittosporum Undulatum
10.	Pecan	Carya Illinoinensis
11.	Avocado	Persea Americana
12.	Port Orford Cedar	Chamaecyparis Lawsoniana
13.	Pummelo (Shaddock)	Citrus Maxima

	Common Name	Botanical Name
14.	Black Magnolia	Magnolia Nigra
15.	Japanese Boxwood	Buxus Microphylla Japonica
16.	Jacaranda	Jacaranda Mimosifolia
17.	Japanese Maple	Acer Palmatum
18.	Saucer Magnolia	Magnolia Soulangeana
19.	Crepe Myrtle	Lagerstroemia Indica
20.	Pineapple Guava	Feijoa Sellowiana
21.	Washington Navel Orange	Citrus Sinensis 'Washington'
22.	Coast Redwood	Sequoia Sempervirens
23.	Maiden Hair Tree	Ginkgo Biloba 'Fairmount'
24.	Grapefruit	Citrus Paradisi 'Marsh'
25.	Blue Potato Bush	Solanum Rantonnetii
26.	Red Cestrum	Cestrum Elegans

APPENDIX G – ARBOR PHOTOS

Department: Public Works
Cost Center: 5002
For Agenda of: 11/12/2024
Placement: Consent
Estimated Time: N/A

FROM: Matt Horn, Public Works Director
Prepared By: Sandra Golonka, Capital Projects Manager III

SUBJECT: AUTHORIZATION TO ADVERTISE 1106 WALNUT TENANT IMPROVEMENTS PROJECT, SPECIFICATION 2000577-04 AND FENCING PROJECT, SPECIFICATION NO. 2000577-02

RECOMMENDATION

1. Approve the project plans and specifications for the 1106 Walnut Tenant Improvement (TI) Project, Specification No. 2000577-04 and 1106 Walnut Fencing (Fence) Project, Specification No. 2000577-02; and,
2. Authorize advertisement of the 1106 Walnut Tenant Improvement (TI) Project; and,
3. Authorize advertisement of the 1106 Walnut Fencing Project; and,
4. Authorize the City Manager to award the Construction Contract pursuant to Section 3.24.190 of the Municipal Code, for the 1106 Walnut TI project Specification No. 2000577-04 if the lowest responsible bid is within the Engineering Estimate of $1,470,000; and
5. Authorize the City Manager to award the Construction Contract pursuant to Section 3.24.190 of the Municipal Code, for the 1106 Walnut Fencing project, Specification No. 2000577-02 if the lowest responsible bid is within the Engineering Estimate of $470,000; and
6. Authorize the City Engineer to approve Contract Change Orders up to the available budget for each project; and
7. Authorize the City Manager to amend the total project budget with undesignated capital project funding up to the purchasing authority limit of $200,000; and,
8. Authorize the following appropriations and transfers:
   a. Authorize an appropriation of $396,914.41 from the Police Impact Fees Revenue account (517.9101.47201) to Project Expenditure account (517.9101.71006) in support of the project; and
   b. Authorize the transfer up to $232,000 from Police Station Replacement account (2000522-03) to project account (2000577-04); and
9. Adopt a Draft Resolution entitled, “A Resolution of the City Council of the City San Luis Obispo, California, authorizing use of Police Impact Fees Revenue and Police Station Replacement account to support the 1106 Walnut TI Project, Specification No. 2000577-04 and 1106 Walnut Fencing Project, Specification No. 2000577-02.”

REPORT IN BRIEF

The 1106 Walnut TI and Fencing Project are Capital Improvement Plan (CIP) projects aimed at addressing several needs for a recently acquired property located at 1106 Walnut Street. This property will provide office space to meet the Police Department's immediate needs as well as provide meeting areas for general City or department specific training sessions. The site improvements will also enhance security for possible future use as a temporary Emergency Operations Center (EOC). The 1106 Walnut TI and Fencing Projects are short term projects that will immediately provide operational relief to the Police Department by providing more facility space. In the long term, the facility also provides options for consideration as a future Public Safety Center, a part of a Public Safety Center, or as a temporary Police Station if the City ultimately chooses an alternative single site location for the Public Safety Center[1].

Staff recommends the appropriation and transfer of additional funds to support the TI, fencing, and technology improvements needed to make the building fully functional for its intended use.

POLICY CONTEXT

On May 17, 2022, Council approved a Purchasing Policy Update which requires Council approval for Public Projects with a value of $200,000 or more.

The recommended actions for the award and fund appropriation are supported by the City Council's adopted Capital Improvement Plan.

The Mitigation Fee Act (AB1600), codified in California Government Code Sections 66000-66025, established the legal requirements for a jurisdiction to implement a development impact fee program in conformance with constitutional standards. In line with these requirements, the City undertook a Capital Facilities Fee Program Nexus Study, which was presented to the City Council on April 3, 2018. This study identified several key infrastructure needs, including the need for a Police Impact Fee to fund projects such as a new police headquarters to accommodate the growing community.

Following the presentation of the 2018 Nexus Study, the City Council adopted Resolution No. R-10879 on April 12, 2018, which amended and established Capital Facilities Fees for the City. This fee, also referred to as the Development Impact Fee, includes the Police Impact Fee and reflects the identified need to construct new police headquarters. This report recommends appropriating unreserved Police Impact Fees to support construction of the Tenant Improvement project.

DISCUSSION

[1] The long term potential of 1106 Walnut Street facility and site were contemplated with the acquisition of the property, as discussed in the May 16, 2023 Council Report.

Background
On November 14, 2022, Council authorized staff to engage in real property negotiations for the acquisition of a single office building (11,000 square feet) across the street from the existing Police Department facility at 1106 Walnut Street (1106 Walnut). This property was identified to provide temporary office space to address the immediate needs of the Police Department. Additionally, it presented an opportunity for the City to potentially establish a future Public Safety Center Campus, combining the new property located at 1106 Walnut and the existing police station at 1042 Walnut Street (1042 Walnut).

On May 16, 2023, City Council authorized the purchase of the 1106 Walnut property and appropriated $5.77M of funding from the Infrastructure Investment Fund to cover both the acquisition cost of $4.4M and the necessary security, technology, and signage needs estimated at $1.37M. These property upgrades are essential to make the property functional for Police Administration operations in the short term.

To further evaluate the potential for long-term development of a Public Safety Center at 1042 and 1106 Walnut, the City engaged RRM Design Group (RRM), an on-call consultant, to conduct a site evaluation of both properties. This study will involve conceptual design work, with initial concepts in draft form anticipated by mid-2025.
Staff will provide ongoing updates to the Council as the study progresses. Staff will include a budget request in the 2025-27 Financial Plan for Council's consideration that will continue progress with project planning and development and ensure the project remains aligned with both immediate and long-term public safety and community goals.

Project
The immediate project at 1106 Walnut is broken into two separate bid packages that are planned to be executed simultaneously. The first bid package is the Tenant Improvement (TI) Project that will complete the necessary interior updates to the existing two-story building that the Police Department requires. The second bid package will install a new security fence to better secure the property.

The 1106 Walnut TI project improves the first floor for Detectives and Investigators and will include a briefing room that will also function as a training room and a flexible space that can support various city purposes as needed, and the second floor or top floor will be improved for Police Administration. The project includes constructing new offices, installing flooring, painting, adding lockers and workstations, installing conference and meeting rooms, expanding and securing the front entrance, and various Americans with Disabilities Act (ADA) improvements in break and restrooms. The project plans (Attachment B) and specifications (Attachment C) are attached.

The fence project at 1106 Walnut includes the installation of an 8-foot security fence surrounding the property, equipped with an automatic gate and surveillance cameras for security. In addition, this project will install a dual-head Level 2 electric vehicle (EV) charger, along with the additional conduits to support future EV charging needs. The project plans (Attachment D) and specifications (Attachment E) are attached.

Once both of these projects are complete, City Information Technology Staff will complete necessary equipment installations for secure access systems, building monitoring and cameras, data connectivity, and advanced audiovisual and conferencing technology. Portions of this project's funding will be reserved to support this need.

Previous Council or Advisory Body Action
The Police Station Replacement Project was originally identified and funded in the 2015-17 and 2017-19 Financial Plans to begin the initial replacement study.

On December 6, 2018, the Revenue Enhancement Oversight Committee (REOC) approved staff recommendation to reallocate Local Revenue Measure funds to the Police Station Replacement project.

On November 2, 2021, Council held a Study Session on the Public Safety Center Program. Discussion includes how the Public Safety Center would provide space for staff and vehicles to address space constraints, a proposed Emergency Operations Center (EOC), public outreach, cost estimate, and funding sources.

On November 14, 2022, during a closed session, the Council authorized staff to begin real property negotiations to acquire the building at 1106 Walnut Street. This property, located across from the current Police Department station, offers a convenient solution to meet the immediate need for additional staff office space.

On May 16, 2023, the City Council approved staff's recommendation to purchase the property at 1106 Walnut Street and established a CIP project to fund the necessary upgrades associated with the use and occupancy of the building.

On May 16, 2023, the City Council approved staff's recommendation to purchase the property at 1106 Walnut Street and established a CIP project to fund the necessary upgrades associated with the use and occupancy of the building.

Public Engagement
The Planning Commission reviewed the project on April 12, 2023, and adopted a Resolution determining General Plan Conformance for the acquisition of the property located at 1106 Walnut Street. Additional public input opportunity was provided at Council's May 16, 2023 meeting where the project was created and placed on the CIP.

CONCURRENCE

The Police Department, Community Development Department, Administration & IT, and Public Works Department have reviewed and concur with the attached plans and proposed recommendations. A building permit will be obtained prior to the start of construction and will be issued to the Contractor following the award of a construction contract. This project also has concurrence from the Administration & IT Department as they have reviewed the project throughout the design process.

ENVIRONMENTAL REVIEW

The Project qualifies for an Exemption to the California Environmental Quality Act (CEQA) pursuant to State Guidelines Sections 15301 that exempts existing facilities and 15302 that exempts replacement and reconstruction of existing facilities as this project only requires minor alterations to the interior of an existing building.

The fencing enhancements include installing new pickets on existing fencing, adding new fencing within the current parking lot and curb property boundaries, and installing a rolling gate on the existing asphalt entrance to the parking lot. These changes are minor and contained within the property's existing developed areas. A Notice of Exemption will be filed with the County Clerk Recorder's Office after approval to advertise.

FISCAL IMPACT

Budgeted: Yes
Budget Year: 2024-25
Funding Identified: Yes

Fiscal Analysis:

The project was initially identified during the acquisition of the 1106 Walnut property. Council approved staff's recommendation to allocate funding as follows: $900,000 for security fencing and an automatic gate, $450,000 for technology upgrades, and $75,000 for signage and contingencies. The FY 2024-25 Supplemental Budget allocated an additional $750,000 for tenant improvements. As part of Resolution No. 10879 (2018 Series), impact fees were established that contemplated the construction of a new police headquarters. These tenant improvements are an appropriate use for this funding and therefore recommended to be used to construct this project. Staff is recommending to Council to appropriate $396,914.41 to support this work.

In July 2024, $350,000 was allocated as part of 2023-25 Financial Plan to the Police Station Replacement account (2000522). Staff is recommending that $232,000 of these funds be transferred to project account (2000577-04) to support construction, as the property will serve as a temporary facility for the future Public Safety Building, while still allowing for continued study and planning of the future Public Safety Center. The table below is a breakdown of the scope and costs associated with the project.

ESTIMATED PROJECT COST BY FUNDING SOURCE			
1106 Walnut Street Tenant Improvements and 1106 Walnut Fence			
	1106 Walnut Street Tenant Improvements (2000577-04)	**1106 Walnut Fence Project (2000577-02)**	**Total**
	Capital Outlay	**Capital Outlay (LRM)**	
Project Cost			
Tenant Improvement: Engineer's Estimate	$ 1,470,000.00		$ 1,470,000.00
Security Fencing: Engineer's Estimate		$ 470,000.00	$ 470,000.00
Total Construction Estimate	***$ 1,470,000.00***	***$ 470,000.00***	***$ 1,940,000.00***
Construction Contingency (15%):	$ 220,500.00	$ 71,028.24	$ 291,528.24
Technology Improvements	$ 507,615.00	$ -	$ 507,615.00
Construction Design Support	$ 25,000.00		$ 25,000.00
Special Inspection	$ 20,000.00	$ -	$ 20,000.00
Total Project Estimate	***$ 2,243,115.00***	***$ 541,028.24***	***$ 2,784,143.24***
Project Funding			
Current Account Balance	***$ 1,407,978.83***	***$ 747,250.00***	***$ 2,155,228.83***
Additional Funding Requested: Police Impact Fee (517.9101.47201)	$ 396,914.41	$ -	$ 396,914.41
Additional Funding Requested: Police Station Replacement (2000522-03)	$ 232,000.00	$ -	$ 232,000.00
Total Project Funding (2000577)	***$ 2,036,893.24***	***$ 747,250.00***	***$ 2,784,143.24***

Detailed Cost Breakdown	
Tennant Improvement	
Demo	$ 61,101.00
Cubicles, Finishes, Paint (full interior)	$ 427,338.00
Misc. Equipment	$ 46,865.00
Plumbing, Electrical	$ 139,966.00
HVAC	$ 56,000.00
Breakroom Remodel- ADA Compliance	$ 31,598.00
Restroom Upgrades	$ 176,635.00
Window Shades	$ 42,297.00
Furniture	$ 289,200.00
General Conditions (KC per month x 5) and Overhead	$ 199,000.00
	$ 1,470,000.00
Security Fencing	
Demo	$ 10,140.00
Excavation and Grading	$ 5,890.00
Site Utility (EV- Level 2 /dual head)	$ 53,920.00
General Site Work	$ 274,702.62
General Conditions (KC per month x 4) and Overhead	$ 125,347.38
	$ 470,000.00
Construction Costs Total	**$ 1,940,000.00**
Construction Soft Cost (as shown in the table above)	**$ 844,143.24**
Project Total	***$ 2,784,143.24***

Staff is recommending funding the Project through the following appropriations and transfers:

- Appropriation of $396,314.41 from the Police Impact Fee Revenue account (517.9101.47201) to the project account (2000577)
- Transfer of $232,000 from Major Facilities - Police Station Replacement Account (2000522) to the project account (2000577)

Funding Sources	Total Budget Available	Current Funding Request	Remaining Balance	Annual Ongoing Cost
General Fund: Capital Outlay Fund-Project 2000577	$1,407,978.83	$1,407,978.83	$0	N/A
General Fund: Capital Outlay Fund-LRM Project 2000577	$747,250	$747,250	$0	
Other: Police Impact Fee Revenue (517.9101.47201)	$396,914.41	$396,914.41	$0	
Other: CIP-Capital Outlay Fund Project: Police Station Replacement 2000522-03	$364,135.06	$232,000.00	$132,135.06	N/A
Total	**$2,916,278.30**	**$2,784,143.24**	**$132,135.06**	**$**

ALTERNATIVES

Deny or defer authorization to advertise the project. The City Council may choose not to authorize project advertisements. Staff does not recommend this alternative as these improvements are essential for city staff to use the building and to safely serve the community. Additionally, staff has concerns that without proper security measures, the property may be accessed by unauthorized individuals, posing a risk to the safety and security of the property.

ATTACHMENTS

A - Draft Resolution authorizing funds to support the 1106 Walnut TI Project
B - Tenant Improvement Project Plans (Spec. No. 2000577-04)
C - Tenant Improvement Special Provisions (Spec. No. 2000577-04)
D - Fencing Project Plans (Spec. No. 2000577-02)
E - Fencing Special Provisions (Spec. No. 2000577-02)

RESOLUTION NO. _____ (2024 SERIES)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN LUIS OBISPO, CALIFORNIA, AUTHORIZING USE OF POLICE IMPACT FEES AND CAPITAL OUTLAY FUND TO SUPPORT 1106 WALNUT TI, SPECIFICATION NUMBER 2000577-04

WHEREAS, in November of 2022, the City Council authorized staff to engage in real property negotiations; and

WHEREAS, in May of 2023, City Council authorized the purchase of the 1106 Walnut property and appropriated funds to include the costs of the tenant improvement and site security fencing projects and staff to initiate project planning and design; and

WHEREAS, in April of 2018, the City Council adopted Resolution Number 10879, amending and establishing a Police Impact Fee, which identified construction of a new police headquarters as an intended use of the fee revenue; and

WHEREAS, in July of 2024, the City Council approved the 2023-25 Financial Plan Capital Improvement program, which identified the need for a Public Safety Center Replacement with a total budget amount of $350,000; and

WHEREAS, to provide funding to support the total construction contract for the Project, staff is recommending the City Council appropriate $396,914.41 from Police Impact Fees as the tenant improvements are consistent with the purpose identified in the 2018 nexus study; and

WHEREAS, to provide funding to support the total construction contract for the Project, staff is recommending the City Council approve the transfer of $232,000 from the Police Station Replacement account (2000522-03).

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of San Luis Obispo as follows:

SECTION 1. The City Council authorizes appropriating $396,914.41 from the Police Impact Fees (517.9101.472); and approves the transfer of $232,000 in Police Station Replacement, in Capital Outlay Fund to the 1106 Walnut TI Project.

Upon motion of _____, seconded by _____, and on the following roll call vote:

AYES:
NOES:
ABSENT:

The foregoing resolution was adopted this _____ day of _____ 2024.

_____
Mayor Erica A. Stewart

ATTEST:

_____
Teresa Purrington
City Clerk

APPROVED AS TO FORM:

_____
J. Christine Dietrick
City Attorney

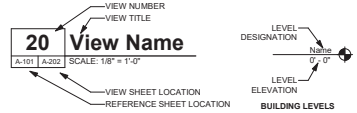
IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of San Luis Obispo, California, on _____.

_____
Teresa Purrington
City Clerk

ABBREVIATIONS

A/C	AIR CONDITIONING	HC	HOLLOW CORE	SSTL	STAINLESS STEEL
ABV	ABOVE	HDWD	HARDWOOD	STC	SOUND TRANSMISSION CLASS
ACOUS	ACOUSTICAL	HDWR	HARDWARE	STD	STANDARD
ACT	ACOUSTICAL CEILING TILE	HGT	HEIGHT	STL	STEEL
ADA	AMERICANS WITH DISABILITIES ACT	HM	HOLLOW METAL	STOR	STORAGE
AFCI	ARC FAULT CIRCUIT INTERRUPTER	HORIZ	HORIZONTAL	STRUCT	STRUCTURAL
AFF	ABOVE FINISH FLOOR	HVAC	HEATING, VENTILATION, A/C	SUSP	SUSPENDED
AL	ALUMINUM	ID	INSIDE DIAMETER	SV	SHEET VINYL
ALT	ALTERNATE	IIC	IMPACT INSULATION CLASS	SYM	SYMMMETRICAL
ARCH	ARCHITECT(URAL)	IN	INCH	T	TREAD
BD	BOARD	INCAND	INCANDESCENT	T&G	TONGUE & GROOVE
BDRM	BEDROOM	INSUL	INSULATION, INSULATED	TEL	TELEPHONE
BET	BETWEEN	INT	INTERIOR	TEMP	TEMPERED
BIT	BITUMINOUS	JC	JANITORS CLOSET	TER	TERRAZZO
BLDG	BUILDING	JT	JOINT	THK	THICK
BLKG	BLOCKING	LAM	LAMINATE	THR	THRESHOLD
BLW	BELOW	LAV	LAVATORY	TJI	TRUSS JOIST I-JOIST
BM	BEAM	LBS	POUNDS	TO	TOP OF
BOT	BOTTOM	LEED	LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN	TOS	TOP OF SLAB
BUR	BUILT UP ROOF			TOW	TOP OF WALL
CB	CATCH BASIN	LF	LINEAR FEET	TRANS	TRANSFORMER
CBC	CALIFORNIA BUILDING CODE	LIN	LINEN CLOSET	TV	TELEVISION
CEM	CEMENT	LINO	LINOLEUM	TYP	TYPICAL
CFM	CUBIC FEET PER MINUTE	LT(G)	LIGHT(ING)	UFAS	UNIFORM FEDERAL ACCESSIBILITY STANDARDS
CIP	CAST IN PLACE	LVL	LAMINATED VENEER LUMBER		
CJ	CONTROL JOINT	LVT	LUXURY VINYL TILE	UG	UNDERGROUND
CL	CENTER LINE	LW	LIGHTWEIGHT	UNFIN	UNFINISHED
CLG	CEILING	MAX	MAXIMUM	UNO	ULNESS NOTED OTHERWISE
CLO	CLOSET	MDF	MEDIUM DENSITY FIBERBOARD	UV	UTRAVIOLET
CLR	CLEAR	MECH	MECHANICAL	VCT	VINYL COMPOSITION TILE
CMU	CONCRETE MASONRY UNIT	MEMB	MEMBRANE	VERT	VERTICAL
CO	CLEAN OUT	MEP	MECHANICAL, ELECTRICAL, PLUMBING	VIF	VERIFY IN FIELD
COL	COLUMN	MFR	MANUFACTURER	VTR	VENT TERMINATION PIPE
CONC	CONCRETE	MIN	MINIMUM	VWC	VINYL WALL COVERING
CONST	CONSTRUCTION	MISC	MISCELLANEOUS	W	WEST
CONT	CONTINUOUS	MO	MASONRY OPENING	W/	WITH
CONTR	CONTRACTOR	MTD	MOUNTED	W/D	WASHER DRYER
CPT	CARPET	MTL	METAL	W/O	WITHOUT
CT	CERAMIC TILE	N	NORTH	WC	WATERCLOSET
CTR	CENTER	NIC	NOT IN CONTRACT	WD	WOOD
DBL	DOUBLE	NO	NUMBER	WDW	WINDOW
DF	DRINKING FOUNTAIN	NOM	NOMINAL	WH	WATER HEATER
DIA	DIAMETER, DIAPHRAGM	NTS	NOT TO SCALE	WI	WROUGHT IRON
DIM	DIMENSION	O.P.	OVERFLOW PIPE	WIN	WINDOW
DN	DOWN	OC	ON CENTER	WP	WATERPROOF(ING)
DR	DOOR	OD	OVERFLOW DRAIN	WR	WEATHER RESISTIVE
DS	DOWN SPOUT	OFF	OFFICE	WRB	WATER RESISTIVE BARRIER
DTL	DETAIL	OH	OPPOSITE HAND	WSCT	WAINSCOT
DW	DISHWASHER	OPG	OPENING	WT	WEIGHT
DWG	DRAWING	OPP	OPPOSITE	WWF	WELDED WIRE FABRIC
(E)	EXISTING	(P)	PROPOSED	YD	YARD
E	EAST	PERM	PERIMETER		
EA	EACH	PERP	PERPENDICULAR		
EJ	EXPANSION JOINT	PG	PAINT GRADE		
EL.	ELEVATION	PL	PLATE, PROPERTY LINE		
ELEV		PLAM	PLASTIC LAMINATE		
ELEC	ELECTRIC	PLBG	PLUMBING		
ENCL	ENCLOSURE	PLYWD	PLYWOOD		
EQ	EQUAL	PNL	PANEL		
EQUIP	EQUIPMENT	PP	POWER POLE		
EXH	EXHAUST	PR	PAIR		
EXP	EXPANSION	PRTN	PARTITION		
EXT	EXTERIOR	PSF	POUNDS PER SQUARE FOOT		
FACP	FIRE ALARM CONTROL PANEL	PSI	POUNDS PER SQUARE INCH		
FAU	FORCED AIR UNIT	PSL	PARALLEL STRAND LUMBER		
FAWP	FLUID APPLIED WATERPROOFING	PT	PRESSURE TREATED		
FD	FLOOR DRAIN	PTD	PAINTED		
FDC	FIRE DEPARTMENT CONNECTION	PV	PHOTO VOLTAIC		
FE	FIRE EXTINGUISHER	PVC	POLYVINYL CHLORIDE		
FEC	FIRE EXTINGUISHER CABINET	PVMT	PAVEMENT		
FF	FINISHED FLOOR ELEVATION	QTY	QUANTITY		
FG	FINISHED GRADE	R	RADIUS, RISER		
FH	FIRE HYDRANT	RB	RUBBER BASE		
FHC	FIRE HOSE CABINET	RCP	REFLECTED CEILING PLAN		
FIN	FINISH	RD	ROOF DRAIN		
FIXT	FIXTURE	REF	REFRIGERATOR		
FLR	FLOOR	REINF	REINFORCED		
FLUOR	FLOURESCENT	REQD	REQUIRED		
FND	FOUNDATION	RH	RIGHT HAND		
FO	FACE OF	RM	ROOM		
FOC	FACE OF CONCRETE	RO	ROUGH OPENING		
FOF	FACE OF FINISH	RTU	ROOF TOP UNIT (MECH)		
FOIC	FURNISHED BY OWNER INSTALLED BY CONTRACTOR	S	SOUTH		
		SAFB	SOUND ATTENUATION FIBER BATT		
FOM	FACE OF MASONRY	SAWP	SELF ADHEREING WATERPROOFING		
FOS	FACE OF STUD	SC	SCUPPER/SOLID CORE		
FRP	FIBERGLASS REINFORCED PANELS	SCHED	SCHEDULE		
FT	FOOT OR FEET	SEAL	SEALANT		
FTG	FOOTING	SECT	SECTION		
GA	GAUGE, GAGE	SF	SQUARE FOOT		
GALV	GALVANIZED	SHT	SHEET		
GB	GRAB BAR	SHTHG	SHEATHING		
GC	GENERAL CONTRACTOR	SIM	SIMILAR		
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SM	SHEET METAL		
GWB	GYPSUM BOARD	SPEC	SPECIFICATION		
GYP	GYPSUM	SQ	SQURE		
HB	HOSE BIBB	SS	SOLID SURFACE		

SYMBOLS



BUILDING LEVELS

NORTH ARROW

GRID REFERENCE

DOOR W/CLOSER

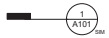
BUILDING ELEVATION

SECTION REFERENCE

DOOR TAG

WINDOW TAG

INTERIOR ELEVATIONS



DETAIL REFERENCE

WALL TAG

STOREFRONT TAG

REVISION TAG

CENTERLINE

MATERIAL TAG

DEFERRED SUBMITTALS

1. FIRE SPRINKLER MODIFICATIONS DUE TO ADDING / MOVING WALLS

PROJECT DIRECTORY

OWNER
CITY OF SAN LUIS OBISPO
ADDRESS: 919 PALM ST.
SAN LUIS OBISPO, CA. 93401
CONTACT: SANDRA GOLONKA
EMAIL: SGOLONKA@SLOCITY.ORG

ARCHITECT
RRM DESIGN GROUP
ADDRESS: 3765 S. HIGUERA ST. SUITE 102
SAN LUIS OBISPO, CA. 93401
CONTACT: JON HOUCK
EMAIL: JHOUCK@RRMDESIGN.COM

MECHANICAL ENGINEER
3C ENGINEERING
ADDRESS: 1500 PALM ST.
SAN LUIS OBISPO, CA. 93401
CONTACT: DENVER STANGER
EMAIL: DSTANGER@3CENG.COM

ELECTRICAL ENGINEER
THOMA ELECTRIC
ADDRESS: 3562 EMPLEO ST.
SAN LUIS OBISPO, CA. 93401
CONTACT: CHRIS JOSE
EMAIL: CJOSE@THOMAELEC.COM

VICINITY MAP

PROJECT SITE

PROJECT INFORMATION

PROJECT SCOPE:

1. SELECTIVE DEMOLITION OF PARTITIONS, CEILINGS, FINISHES, MECHANICAL EQUIPMENT, ELECTRICAL DEVICES.
2. CONSTRUCTION OF NEW PARTITIONS, CEILINGS, FINISHES, MECHANICAL EQUIPMENT, ELECTRICAL DEVICES, INTERIOR STOREFRONT WINDOWS.

BUILDING INFORMATION:

OCCUPANCY: B, A-3
CONSTRUCTION TYPE: VB
FIRE SPRINKLERED: YES
BUILDING HEIGHT: 35'
NUMBER OF STORIES: 2
TOTAL BUILDING AREA: 10,921 SF
FIRST FLOOR BUILDING AREA: 5,586 SF
SECOND FLOOR BUILDING AREA: 5,335 SF

SEE SHEET G-401 FOR CODE ANALYSIS

SITE INFORMATION:

STREET ADDRESS:	1106 WALNUT ST. SAN LUIS OBISPO, CA.
APN:	001-207-039
ZONING:	O (OFFICE)
LOT SIZE:	0.87 AC
LAND USE:	OFFICE
EXISTING USE:	OFFICE
PROPOSED USE:	OFFICE

PROJECT GENERAL NOTES

USE OF PLANS: THESE PLANS ARE THE PROPERTY OF RRM AND MAY NOT BE USED WITHOUT THE EXPRESS, WRITTEN CONSENT.

THESE NOTES APPLY TO ALL PORTIONS, PHASES AND SUBCONTRACTORS OF THIS PROJECT.
APPLICABLE CODES AND STANDARDS:

- *2022 CALIFORNIA BUILDING CODE AND ITS APPENDICES AND STANDARDS.*
- *2022 CALIFORNIA PLUMBING CODE AND ITS APPENDICES AND STANDARDS.*
- *2022 CALIFORNIA MECHANICAL CODE AND ITS APPENDICES AND STANDARDS.*
- *2022 CALIFORNIA FIRE CODE AND ITS APPENDICES AND STANDARDS.*
- *2022 CALIFORNIA ELECTRICAL CODE AND ITS APPENDICES AND STANDARDS.*
- *2022 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS.*
- *2022 CALIFORNIA GREEN BUILDING STANDARDS CODE AND ITS APPENDICIES AND STANDARDS.*
- *CURRENT CITY OF SAN LUIS OBISPO MUNICIPAL CODE.*

1. ALL WORK DESCRIBED IN THE DRAWINGS SHALL BE VERIFIED FOR DIMENSION, GRADE, EXTENT AND COMPATIBILITY WITH EXISTING SITE CONDITIONS. ANY DISCREPANCIES AND UNEXPECTED CONDITIONS THAT AFFECT OR CHANGE THE WORK DESCRIBED IN THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IMMEDIATELY. DO NOT PROCEED WITH THE WORK IN THE AREA OF DISCREPANCIES UNTIL ALL SUCH DISCREPANCIES ARE RESOLVED. IF THE CONTRACTOR CHOOSES TO DO SO, HE/SHE SHALL BE PRECEDING AT HIS/HER OWN RISK.
2. DIMENSIONS SHOWN SHALL TAKE PRECEDENCE OVER DRAWING SCALE OR PROPORTION. LARGER SCALE DRAWINGS SHALL TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS. ALL DIMENSIONS ARE ROUGH AND TO FACE OF FRAMING.
3. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
4. CONTRACTOR IS TO BE RESPONSIBLE FOR BEING FAMILIAR WITH THESE DOCUMENTS INCLUDING ALL CONTRACT REQUIREMENTS.
5. CONTRACTOR TO REVIEW CALIFORNIA GREEN CODE REQUIREMENTS FOR CONTRACTOR REQUIREMENTS.
6. TEMPORARY FACILITIES: CONTRACTOR SHALL PAY FOR, PROVIDE AND MAINTAIN TEMPORARY FACILITIES FOR PROJECT PROTECTION AND CONSTRUCTION, AND AS REQUIRED BY LOCAL REGULATION AND THESE DOCUMENTS. SUCH FACILITIES INCLUDE, BUT ARE NOT LIMITED TO: TOILETS, LIGHTS, HEATERS, POWER, GAS, FANS, WATER, PHONES, FENCES, SIGNS, SHEDS, ETC. REMOVE FROM SITE UPON COMPLETION OF WORK. OBTAIN BUILDING OFFICIAL OR FIRE MARTIAL APPROVAL PRIOR TO USE OF ANY TEMPORARY HEATING DEVICE.
7. CONTRACTOR SHALL PROVIDE FOR PROTECTION AND SAFETY: RESPONSIBLE FOR ALL ITEMS (SIGNS, LIGHTS, FENCES, BRACING, ANCHORAGE, FIRE-EXTINGUISHERS, ETC.) NECESSARY FOR THE PROTECTION OF THE PUBLIC, WORKERS, MATERIALS, CONSTRUCTION AND PROPERTY PER LOCAL, STATE AND FEDERAL REQUIREMENTS (INCLUDING EARTHQUAKES, FIRES, SPILLS, ACCIDENTS, EROSION, MUD, DUST, ETC.).

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G-205	CAL GREEN REQUIREMENTS
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G-902	ACCESSIBILITY DETAILS
G-903	ACCESSIBILITY DETAILS
G-904	ACCESSIBILITY DETAILS
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Grand total: 53	

CITY OF SAN LUIS OBISPO

SAN LUIS OBISPO COUNTY, CALIFORNIA

1106 WALNUT TENANT IMPROVEMENT

APPROVED BY

Brian A. Nelson, City Engineer *R.C.E. C79870* *Approved Date*

SPECIFICATION NO.	DATE	SHEET
2000577-04	09/12/2024	G-001
	FILE NO./LOCATION	

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 1 (JANUARY 2023)

CHAPTER 1 - ADMINISTRATION

SECTION 101 GENERAL

101.1 TITLE.
THESE REGULATIONS SHALL BE KNOWN AS THE *CALIFORNIA GREEN BUILDING STANDARDS CODE* AND MAY BE CITED AS SUCH AND WILL BE REFERRED TO HEREIN AS "THIS CODE." IT IS INTENDED THAT IT SHALL ALSO BE KNOWN AS THE *CALGREEN CODE*. THE *CALIFORNIA GREEN BUILDING STANDARDS CODE* IS PART 11 OF THIRTEEN PARTS OF THE OFFICIAL COMPILATION AND PUBLICATION OF THE ADOPTION, AMENDMENT AND REPEAL OF BUILDING REGULATIONS TO THE *CALIFORNIA CODE OF REGULATIONS*, TITLE 24, ALSO REFERRED TO AS THE *CALIFORNIA BUILDING STANDARDS CODE*.

101.2 PURPOSE.
THE PURPOSE OF THIS CODE IS TO IMPROVE PUBLIC HEALTH, SAFETY AND GENERAL WELFARE BY ENHANCING THE DESIGN AND CONSTRUCTION OF BUILDINGS THROUGH THE USE OF BUILDING CONCEPTS HAVING A REDUCED NEGATIVE IMPACT OR POSITIVE ENVIRONMENTAL IMPACT AND ENCOURAGING SUSTAINABLE CONSTRUCTION PRACTICES IN THE FOLLOWING CATEGORIES:

1. PLANNING AND DESIGN.
2. ENERGY EFFICIENCY.
3. WATER EFFICIENCY AND CONSERVATION.
4. MATERIAL CONSERVATION AND RESOURCE EFFICIENCY.
5. ENVIRONMENTAL QUALITY.

101.3 SCOPE.
THE PROVISIONS OF THIS CODE SHALL APPLY TO THE PLANNING, DESIGN, OPERATION, CONSTRUCTION, USE AND OCCUPANCY OF EVERY NEWLY CONSTRUCTED BUILDING OR STRUCTURE, UNLESS OTHERWISE INDICATED IN THIS CODE, THROUGHOUT THE STATE OF CALIFORNIA.
IT IS NOT THE INTENT THAT THIS CODE SUBSTITUTE OR BE IDENTIFIED AS MEETING THE CERTIFICATION REQUIREMENTS OF ANY GREEN BUILDING PROGRAM.

SECTION 102 CONSTRUCTION DOCUMENTS AND INSTALLATION VERIFICATION

102.1 SUBMITTAL DOCUMENTS.
CONSTRUCTION DOCUMENTS AND OTHER DATA SHALL BE SUBMITTED IN ONE OR MORE SETS WITH EACH APPLICATION FOR A PERMIT. WHERE SPECIAL CONDITIONS EXIST, THE ENFORCING AGENCY IS AUTHORIZED TO REQUIRE ADDITIONAL CONSTRUCTION DOCUMENTS TO BE PREPARED BY A LICENSED DESIGN PROFESSIONAL AND MAY BE SUBMITTED SEPARATELY.

EXCEPTION: THE ENFORCING AGENCY IS AUTHORIZED TO WAIVE THE SUBMISSION OF CONSTRUCTION DOCUMENTS AND OTHER DATA NOT REQUIRED TO BE PREPARED BY A LICENSED DESIGN PROFESSIONAL.

102.2 INFORMATION ON CONSTRUCTION DOCUMENTS.
CONSTRUCTION DOCUMENTS SHALL BE OF SUFFICIENT CLARITY TO INDICATE THE LOCATION, NATURE AND SCOPE OF THE PROPOSED GREEN BUILDING FEATURE AND SHOW THAT IT WILL CONFORM TO THE PROVISIONS OF THIS CODE, THE *CALIFORNIA BUILDING STANDARDS CODE* AND OTHER RELEVANT LAWS, ORDINANCES, RULES AND REGULATIONS AS DETERMINED BY THE ENFORCING AGENCY.

102.3 VERIFICATION.
DOCUMENTATION OF CONFORMANCE FOR APPLICABLE GREEN BUILDING MEASURES SHALL BE PROVIDED TO THE ENFORCING AGENCY. ALTERNATE METHODS OF DOCUMENTATION SHALL BE ACCEPTABLE WHEN THE ENFORCING AGENCY FINDS THAT THE PROPOSED ALTERNATE DOCUMENTATION IS SATISFACTORY TO DEMONSTRATE SUBSTANTIAL CONFORMANCE WITH THE INTENT OF THE PROPOSED GREEN BUILDING MEASURE.

CHAPTER 3 - GREEN BUILDING

SECTION 301 GENERAL

301.1 SCOPE.
BUILDINGS SHALL BE DESIGNED TO INCLUDE THE GREEN BUILDING MEASURES SPECIFIED AS MANDATORY IN THE APPLICATION CHECKLISTS CONTAINED IN THIS CODE. VOLUNTARY GREEN BUILDING MEASURES ARE ALSO INCLUDED IN THE APPLICATION CHECKLISTS AND MAY BE INCLUDED IN THE DESIGN AND CONSTRUCTION OF STRUCTURES COVERED BY THIS CODE, BUT ARE NOT REQUIRED UNLESS ADOPTED BY A CITY, COUNTY, OR CITY AND COUNTY AS SPECIFIED IN ***SECTION 101.7***.

301.3 NONRESIDENTIAL ADDITIONS AND ALTERATIONS
[BSC-CG] THE PROVISIONS OF INDIVIDUAL SECTIONS OF ***CHAPTER 5*** APPLY TO NEWLY CONSTRUCTED BUILDINGS, BUILDING ADDITIONS OF 1,000 SQUARE FEET OR GREATER, AND/OR BUILDING ALTERATIONS WITH A PERMIT VALUATION OF $200,000 OR ABOVE (FOR OCCUPANCIES WITHIN THE AUTHORITY OF CALIFORNIA BUILDING STANDARDS COMMISSION). CODE SECTIONS RELEVANT TO ADDITIONS AND ALTERATIONS SHALL ONLY APPLY TO THE PORTIONS OF THE BUILDING BEING ADDED OR ALTERED WITHIN THE SCOPE OF THE PERMITTED WORK.

A CODE SECTION WILL BE DESIGNATED BY A BANNER TO INDICATE WHERE THE CODE SECTION ONLY APPLIES TO NEWLY CONSTRUCTED BUILDINGS **[N]** OR TO ADDITIONS AND/OR ALTERATIONS **[A]**. WHEN THE CODE SECTION APPLIES TO BOTH, NO BANNER WILL BE USED.

301.3.1 NONRESIDENTIAL ADDITIONS AND ALTERATIONS THAT CAUSE UPDATES TO PLUMBING FIXTURES ONLY:

NOTE: ON AND AFTER JANUARY 1, 2014, CERTAIN COMMERCIAL REAL PROPERTY, AS DEFINED IN ***CIVIL CODE SECTION 1101.3***, SHALL HAVE ITS NONCOMPLIANT PLUMBING FIXTURES REPLACED WITH APPROPRIATE WATER-CONSERVING PLUMBING FIXTURES UNDER SPECIFIC CIRCUMSTANCES. SEE ***CIVIL CODE SECTION 1101.1 ET SEQ***. FOR DEFINITIONS, TYPES OF COMMERCIAL REAL PROPERTY AFFECTED, EFFECTIVE DATES, CIRCUMSTANCES NECESSITATING REPLACEMENT OF NONCOMPLIANT PLUMBING FIXTURES, AND DUTIES AND RESPONSIBILITIES FOR ENSURING COMPLIANCE.

301.3.2 WASTE DIVERSION

THE REQUIREMENTS OF ***SECTION 5.408*** SHALL BE REQUIRED FOR ADDITIONS AND ALTERATIONS WHENEVER A PERMIT IS REQUIRED FOR WORK.

301.4 PUBLIC SCHOOLS AND COMMUNITY COLLEGES (SEE GBSC)

301.5 HEALTH FACILITIES (SEE GBSC)

SECTION 303 PHASED PROJECTS

303.1 PHASED PROJECTS.
FOR SHELL BUILDINGS AND OTHERS CONSTRUCTED FOR FUTURE TENANT IMPROVEMENTS, ONLY THOSE CODE MEASURES RELEVANT TO THE BUILDING COMPONENTS AND SYSTEMS CONSIDERED TO BE NEW CONSTRUCTION (OR NEWLY CONSTRUCTED) SHALL APPLY.

303.1.1 INITIAL TENANT IMPROVEMENTS
THE PROVISIONS OF THIS CODE SHALL APPLY ONNLY TO THE INITIAL TENANT IMPROVEMENTS TO A PROJECT. SUBSEQUENT TENANT IMPROVEMENTS SHALL COMPLY WITH THE SCOPING PROVISIONS IN ***SECTION 301.3*** NON-RESIDENTIAL ADDITIONS AND ALTERATIONS.

CHAPTER 5 - NONRESIDENTIAL MANDATORY MEASURES

DIVISION 5.1 PLANNING AND DESIGN

5.106 SITE DEVELOPMENT

5.106.1 STORMWATER POLLUTION FOR PROJECTS THAT DISTURB LESS THAN ONE ACRE OF LAND
NEWLY CONSTRUCTED PROJECTS AND ADDITIONS WHICH DISTURB LESS THAN ONE ACRE OF LAND AND ARE NOT PART OF A LARGER COMMON PLAN OF DEVELOPMENT OR SALE SHALL PREVENT THE POLLUTION OF STORMWATER RUNOFF FROM THE CONSTRUCTION ACTIVITIES THROUGH ONE OR MORE OF THE FOLLOWING MEASURES:

5.106.1.1 LOCAL ORDINANCE
COMPLY WITH A LAWFULLY ENACTED STORMWATER MANAGEMENT AND/OR EROSION CONTROL ORDINANCE.

5.106.1.2 BEST MANAGEMENT PRACTICES (BMP'S)
PREVENT THE LOSS OF SOIL THROUGH WIND OR WATER EROSION BY IMPLEMENTING AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROL AND GOOD HOUSEKEEPING BMP'S.

1. SOIL LOSS BMP'S THAT SHOULD BE CONSIDERED FOR IMPLEMENTATION AS APPROPRIATE FOR EACH PROJECT INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   a. SCHEDULING CONSTRUCTION ACTIVITY DURING DRY WEATHER, WHEN POSSIBLE.
   b. PRESERVATION OF NATURAL FEATURES, VEGETATION, SOIL AND BUFFERS AROUND SURFACE WATERS.
   c. DRAINAGE SWALES OR LINED DITCHES TO CONTROL STORMWATER FLOW.
   d. MULCHING OR HYDROSEEDING TO STABILIZE DISTURBED SOILS.
   e. EROSION CONTROL TO PROTECT SLOPES.
   f. PROTECTION OF STORM DRAIN INLETS (GRAVEL BAGS OR CATCH BASIN INSERTS).
   g. PERIMETER SEDIMENT CONTROL (PERIMETER SILT FENCE, FIBER ROLLS).
   h. SEDIMENT TRAP OR SEDIMENT BASIN TO RETAIN SEDIMENT ON SITE.
   i. STABILIZED CONSTRUCTION EXITS.
   j. WIND EROSION CONTROL.
   k. OTHER SOIL LOSS BMP'S ACCEPTABLE TO THE ENFORCING AGENCY.
2. GOOD HOUSEKEEPING BMP'S TO MANAGE CONSTRUCTION EQUIPMENT, MATERIALS, NON-STORMWATER DISCHARGES, AND WASTES THAT SHOULD BE CONSIDERED FOR IMPLEMENTATION AS APPROPRIATE FOR EACH PROJECT INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   a. DEWATERING ACTIVITIES.
   b. MATERIAL HANDLING AND WASTE MANAGEMENT.
   c. BUILDING MATERIALS STOCKPILE MANAGEMENT.
   d. MANAGEMENT OF WASHOUT AREAS (CONCRETE, PAINTS, STUCCO, ETC.).
   e. CONTROL OF VEHICLE/EQUIPMENT FUELING TO CONTRACTOR'S STAGING AREA.
   f. VEHICLE AND EQUIPMENT CLEANING PERFORMED OFF SITE.
   g. SPILL PREVENTION AND CONTROL.
   h. OTHER HOUSEKEEPING BMP'S ACCEPTABLE TO THE ENFORCING AGENCY.

5.106.4 BICYCLE PARKING
FOR BUILDINGS WITHIN THE AUTHORITY OF CALIFORNIA BUILDING STANDARDS COMMISSION AS SPECIFIED IN ***SECTION 103***, COMPLY WITH ***SECTION 5.106.4.1***. FOR BUILDINGS WITHIN THE AUTHORITY OF THE DIVISION OF THE STATE ARCHITECT PURSUANT TO ***SECTION 105***, COMPLY WITH ***SECTION 5.106.4.2***.

5.106.4.1 BICYCLE PARKING [BSC-CG]
COMPLY WITH ***SECTIONS 5.106.4.1.1*** AND ***5.106.4.1.2;*** OR MEET THE APPLICABLE LOCAL ORDINANCE, WHICHEVER IS STRICTER.

5.106.4.1.1 SHORT-TERM BICYCLE PARKING
IF THE NEW PROJECT OR AN ADDITION OR ALTERATION IS ANTICIPATED TO GENERATE VISITOR TRAFFIC, PROVIDE PERMANENTLY ANCHORED BICYCLE RACKS WITHIN 200 FEET OF THE VISITORS' ENTRANCE, READILY VISIBLE TO PASSERS-BY, FOR 5 PERCENT OF NEW VISITOR MOTORIZED VEHICLE PARKING SPACES BEING ADDED, WITH A MINIMUM OF ONE TWO-BIKE CAPACITY RACK.

TABLE 5.106.5.3.1

TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CAPABLE SPACES	NUMBER OF EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE) [2]
0-9	0	0
10-25	4	0
26-50	8	2
51-75	13	3
76-100	17	4
101-150	25	6
151-200	35	6
201 AND OVER	20% OF TOTAL [1]	25% OF EV CAPABLE SPACES [1]

[1] CALCULATION FOR SPACES SHALL BE ROUNDED UP TO THE NEAREST WHOLE NUMBER.

EXCEPTION: ADDITIONS OR ALTERATIONS WHICH ADD NINE OR LESS VISITOR VEHICULAR PARKING SPACES.

5.106.4.1.2 LONG-TERM BICYCLE PARKING
FOR NEW BUILDINGS WITH TENANT SPACES THAT HAVE 10 OR MORE TENANT-OCCUPANTS, PROVIDE SECURE BICYCLE PARKING FOR 5 PERCENT OF THE TENANT-OCCUPANT VEHICULAR PARKING SPACES WITH A MINIMUM OF ONE BICYCLE PARKING FACILITY.

5.106.4.1.3
FOR ADDITIONS OR ALTERATIONS THAT ADD 10 OR MORE TENANT-OCCUPANT VEHICULAR PARKING SPACES, PROVIDE SECURE BICYCLE PARKING FOR 5 PERCENT OF THE TENANT VEHICULAR PARKING SPACES BEING ADDED, WITH A MINIMUM OF ONE BICYCLE PARKING FACILITY.

5.106.4.1.4
FOR NEW SHELL BUILDINGS IN PHASED PROJECTS PROVIDE SECURE BICYCLE PARKING FOR 5 PERCENT OF THE ANTICIPATED TENANT-OCCUPANT VEHICULAR PARKING SPACES WITH A MINIMUM OF ONE BICYCLE PARKING FACILITY.

5.106.4.1.5
ACCEPTABLE BICYCLE PARKING FACILITY FOR ***SECTIONS 5.106.4.1.2***, ***5.106.4.1.3***, AND ***5.106.4.1.4*** SHALL BE CONVENIENT FROM THE STREET AND SHALL MEET ONE OF THE FOLLOWING:

1. COVERED, LOCKABLE ENCLOSURES WITH PERMANENTLY ANCHORED RACKS FOR BICYCLES;
2. LOCKABLE BICYCLE ROOMS WITH PERMANENTLY ANCHORED RACKS; OR
3. LOCKABLE, PERMANENTLY ANCHORED BICYCLE LOCKERS.

NOTE: ADDITIONAL INFORMATION ON RECOMMENDED BICYCLE ACCOMMODATIONS MAY BE OBTAINED FROM SACRAMENTO AREA BICYCLE ADVOCATES.

5.106.4.2 BICYCLE PARKING [DSA]
FOR PUBLIC SCHOOLS AND COMMUNITY COLLEGES, COMPLY WITH ***SECTIONS 5.106.4.2.1*** AND ***5.106.4.2.2.***

5.106.4.2.1 STUDENT BICYCLE PARKING
PROVIDE PERMANENTLY ANCHORED BICYCLE RACKS CONVENIENTLY ACCESSED WITH A MINIMUM OF FOUR TWO-BIKE CAPACITY RACKS PER NEW BUILDING.

5.106.4.2.2 STAFF BICYCLE PARKING
PROVIDE PERMANENT, SECURE BICYCLE PARKING CONVENIENTLY ACCESSED WITH A MINIMUM OF TWO STAFF BICYCLE PARKING SPACES PER NEW BUILDING. ACCEPTABLE BICYCLE PARKING FACILITIES SHALL BE CONVENIENT FROM THE STREET OR STAFF PARKING AREA AND SHALL MEET ONE OF THE FOLLOWING:

1. COVERED, LOCKABLE ENCLOSURES WITH PERMANENTLY ANCHORED RACKS FOR BICYCLES;
2. LOCKABLE BICYCLE ROOMS WITH PERMANENTLY ANCHORED RACKS; OR
3. LOCKABLE, PERMANENTLY ANCHORED BICYCLE LOCKERS.

5.106.5.3 ELECTRIC VEHICLE (EV) CHARGING [N]
CONSTRUCTION TO PROVIDE ELECTRIC VEHICLE INFRASTRUCTURE AND FACILITATE ELECTRIC VEHICLE CHARGING SHALL COMPLY WITH ***SECTION 5.106.5.3.1*** AND SHALL BE PROVIDED IN ACCORDANCE WITH REGULATIONS IN THE *CALIFORNIA BUILDING CODE* AND THE *CALIFORNIA ELECTRICAL CODE*.

EXCEPTIONS:

1. ON A CASE-BY-CASE BASIS WHERE THE LOCAL ENFORCING AGENCY HAS DETERMINED COMPLIANCE WITH THIS SECTION IS NOT FEASIBLE BASED UPON ONE OF THE FOLLOWING CONDITIONS:
   a. WHERE THERE IS NO LOCAL UTILITY POWER SUPPLY.
   b. WHERE THE LOCAL UTILITY IS UNABLE TO SUPPLY ADEQUATE POWER.
   c. WHERE THERE IS EVIDENCE SUITABLE TO THE LOCAL ENFORCEMENT AGENCY SUBSTANTIATING THAT ADDITIONAL LOCAL UTILITY INFRASTRUCTURE DESIGN REQUIREMENTS, DIRECTLY RELATED TO THE IMPLEMENTATION OF ***SECTION 5.106.5.3***, MAY ADVERSELY IMPACT THE CONSTRUCTION COST OF THE PROJECT.
2. PARKING SPACES ACCESSIBLE ONLY BY AUTOMATED MECHANICAL CAR PARKING SYSTEMS ARE NOT REQUIRED TO COMPLY WITH THIS CODE SECTION.

5.106.5.3.1 EV CAPABLE SPACES
EV CAPABLE SPACES SHALL BE PROVIDED IN ACCORDANCE WITH ***TABLE 5.106.5.3.1*** AND THE FOLLOWING REQUIREMENTS:

1. RACEWAYS COMPLYING WITH THE *CALIFORNIA ELECTRICAL CODE* AND NO LESS THAN 1-INCH DIAMETER SHALL BE PROVIDED AND SHALL ORIGINATE AT A SERVICE PANEL OR A SUBPANEL(S) SERVING THE AREA, AND SHALL TERMINATE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF THE EV CAPABLE SPACE AND INTO A SUITABLE LISTED CABINET, BOX, ENCLOSURE OR EQUIVALENT. A COMMON RACEWAY MAY BE USED TO SERVE MULTIPLE EV CAPABLE SPACES.
2. A SERVICE PANEL OR SUBPANEL(S) SHALL BE PROVIDED WITH PANEL SPACE AND ELECTRICAL LOAD CAPACITY FOR A DEDICATED 208/240 VOLT, 40-AMPERE MINIMUM BRANCH CIRCUIT FOR EACH EV CAPABLE SPACE, WITH DELIVERY OF 30-AMPERE MINIMUM TO AN INSTALLED EVSE AT EACH EVCS.
3. THE ELECTRICAL SYSTEM AND ANY ON-SITE DISTRIBUTION TRANSFORMERS SHALL HAVE SUFFICIENT CAPACITY TO SUPPLY FULL RATED AMPERAGE AT EACH EV CAPABLE SPACE.
4. THE SERVICE PANEL OR SUBPANEL CIRCUIT DIRECTORY SHALL IDENTIFY THE RESERVED OVERCURRENT PROTECTIVE DEVICE SPACE(S) AS "EV CAPABLE". THE RACEWAY TERMINATION LOCATION SHALL BE PERMANENTLY AND VISIBLY MARKED AS "EV CAPABLE."

NOTE: A PARKING SPACE SERVED BY ELECTRIC VEHICLE SUPPLY EQUIPMENT OR DESIGNED AS A FUTURE EV CHARGING SPACE SHALL COUNT AS AT LEAST ONE STANDARD AUTOMOBILE PARKING SPACE ONLY FOR THE PURPOSE OF COMPLYING WITH ANY APPLICABLE MINIMUM PARKING SPACE REQUIREMENTS ESTABLISHED BY AN ENFORCEMENT AGENCY. SEE ***VEHICLE CODE SECTION 22511.2*** FOR FURTHER DETAILS.

[2] THE NUMBER OF REQUIRED EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE) IN COLUMN 3 COUNT TOWARD THE TOTAL NUMBER OF REQUIRED EV CAPABLE SPACES SHOWN IN COLUMN 2.

5.106.5.3.2 ELECTRIC VEHICLE CHARGING STATIONS (EVCS)
EV CAPABLE SPACES SHALL BE PROVIDED WITH EVSE TO CREATE EVCS IN THE NUMBER INDICATED IN ***TABLE 5.106.5.3.1***. THE EVCS REQUIRED BY ***TABLE 5.106.5.3.1*** MAY BE PROVIDED WITH EVSE IN ANY COMBINATION OF LEVEL 2 AND DIRECT CURRENT FAST CHARGING (DCFC), EXCEPT THAT AT LEAST ONE LEVEL 2 EVSE SHALL BE PROVIDED.

ONE EV CHARGER WITH MULTIPLE CONNECTORS CAPABLE OF CHARGING MULTIPLE EVS SIMULTANEOUSLY SHALL BE PERMITTED IF THE ELECTRICAL LOAD CAPACITY REQUIRED BY ***SECTION 5.106.5.3.1*** FOR EACH EV CAPABLE SPACE IS ACCUMULATIVELY SUPPLIED TO THE EV CHARGER.

THE INSTALLATION OF EACH DCFC EVSE SHALL BE PERMITTED TO REDUCE THE MINIMUM NUMBER OF REQUIRED EV CAPABLE SPACES WITHOUT EVSE BY FIVE AND REDUCE PROPORTIONALLY THE REQUIRED ELECTRICAL LOAD CAPACITY TO THE SERVICE PANEL OR SUBPANEL.

5.106.5.3.3 USE OF AUTOMATIC LOAD MANAGEMENT SYSTEMS (ALMS)
ALMS SHALL BE PERMITTED FOR EVCS. WHEN ALMS IS INSTALLED, THE REQUIRED ELECTRICAL LOAD CAPACITY SPECIFIED IN ***SECTION 5.106.5.3.1*** FOR EACH EVCS MAY BE REDUCED WHEN SERVICED BY AN EVSE CONTROLLED BY AN ALMS. EACH EVSE CONTROLLED BY AN ALMS SHALL DELIVER A MINIMUM 30 AMPERES TO AN EV WHEN CHARGING ONE VEHICLE AND SHALL DELIVER A MINIMUM 3.3 KW WHILE SIMULTANEOUSLY CHARGING MULTIPLE EVS.

5.106.5.3.4 ACCESSIBLE EVCS
WHEN EVSE IS INSTALLED, ACCESSIBLE EVCS SHALL BE PROVIDED IN ACCORDANCE WITH THE *CALIFORNIA BUILDING CODE*, ***CHAPTER 11B***, ***SECTION 11B-228.3***.

NOTE: FOR EVCS SIGNS, REFER TO CALTRANS TRAFFIC OPERATIONS POLICY DIRECTIVE 13-01 (ZERO EMISSION VEHICLE SIGNS AND PAVEMENT MARKINGS) OR ITS SUCCESSOR(S).

5.106.8 LIGHT POLLUTION REDUCTION [N].
OUTDOOR LIGHTING SYSTEMS SHALL BE DESIGNED AND INSTALLED TO COMPLY WITH THE FOLLOWING:

1. THE MINIMUM REQUIREMENTS IN THE *CALIFORNIA ENERGY CODE* FOR LIGHTING ZONES 0-4 AS DEFINED IN ***CHAPTER 10, SECTION 10-114*** OF THE *CALIFORNIA ADMINISTRATIVE CODE*; AND
2. BACKLIGHT (B) RATINGS AS DEFINED IN IES TM-15-11 (SHOWN IN ***TABLE A-1 IN CHAPTER 8***);
3. UPLIGHT AND GLARE RATINGS AS DEFINED IN *CALIFORNIA ENERGY CODE* (SHOWN IN ***TABLES 130.2-A*** AND ***130.2-B*** IN ***CHAPTER 8***) AND
4. ALLOWABLE BUG RATINGS NOT EXCEEDING THOSE SHOWN IN ***TABLE 5.106.8 [N]***,

OR COMPLY WITH A LOCAL ORDINANCE LAWFULLY ENACTED PURSUANT TO ***SECTION 101.7***, WHICHEVER IS MORE STRINGENT.

EXCEPTIONS: [N]

1. LUMINAIRES THAT QUALIFY AS EXCEPTIONS IN ***SECTION 130.2(B) AND 140.7*** OF THE *CALIFORNIA ENERGY CODE*
2. EMERGENCY LIGHTING.
3. BUILDING FACADE MEETING THE REQUIREMENTS IN ***TABLE 140.7-B*** OF THE *CALIFORNIA ENERGY CODE, PART 6*.
4. CUSTOM LIGHTING FEATURES AS ALLOWED BY THE LOCAL ENFORCING AGENCY, AS PERMITTED BY ***SECTION 101.8*** ALTERNATE MATERIALS, DESIGNS AND METHODS OF CONSTRUCTION.
5. LUMINAIRES WITH LESS THAN 6,200 INITIAL LUMINAIRE LUMENS.

NOTES: [N]

1. SEE ALSO *CALIFORNIA BUILDING CODE*, ***CHAPTER 12, SECTION 1205.7*** FOR COLLEGE CAMPUS LIGHTING REQUIREMENTS FOR PARKING FACILITIES AND WALKWAYS.
2. REFER TO ***CHAPTER 8*** (COMPLIANCE FORMS, WORKSHEETS AND REFERENCE MATERIAL) FOR IES TM-15-11 ***TABLE A1***, *CALIFORNIA ENERGY CODE* ***TABLES 130.2-A*** AND ***130.2-B.***
3. REFER TO THE *CALIFORNIA ENERGY CODE* FOR REQUIREMENTS FOR ADDITIONS AND ALTERATIONS.

TABLE 5.106.8 [N] - MAXIMUM ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATING[1, 2]

ALLOWABLE RATING	LIGHTING ZONE LZ0	LIGHTING ZONE LZ1	LIGHTING ZONE LZ2	LIGHTING ZONE LZ3	LIGHTING ZONE LZ4
MAXIMUM ALLOWABLE BACKLIGHT RATING[3] (B)					
LUMINAIRE GREATER THAN 2 MOUNTING HEIGHTS (MH) FROM PROPERTY LINE	N/A	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT
LUMINAIRE BACK HEMISPHERE IS 1-2 MH FROM PROPERTY LINE	N/A	B2	B3	B4	B4
LUMINAIRE BACK HEMISPHERE IS 0.5-1 MH FROM PROPERTY LINE	N/A	B1	B2	B3	B3
LUMINAIRE BACK HEMISPHERE IS LESS THAN 0.5 MH FROM PROPERTY LINE	N/A	B0	B0	B1	B2
MAXIMUM ALLOWABLE UPLIGHT RATING (U)					
FOR AREA LIGHTING[3]	N/A	U0	U0	U0	U0
FOR ALL OTHER OUTDOOR LIGHTING, INCLUDING DECORATIVE LUMINAIRES	N/A	U1	U2	U3	U4
MAXIMUM ALLOWABLE GLARE RATING (G)					
LUMINAIRE GREATER THAN 2 MOUNTING HEIGHTS (MH) FROM PROPERTY LINE	N/A	G1	G2	G3	G4
LUMINAIRE FRONT HEMISPHERE IS 1-2 MH FROM PROPERTY LINE	N/A	G0	G1	G1	G2
LUMINAIRE FRONT HEMISPHERE IS 0.5-1 MH FROM PROPERTY LINE	N/A	G0	G0	G1	G1
LUMINAIRE FRONT HEMISPHERE IS LESS THAN 0.5 MH FROM PROPERTY LINE	N/A	G0	G0	G0	G1

[1] IESNA LIGHTING ZONES 0 ARE NOT APPLICABLE; REFER TO LIGHTING ZONES AS DEFINED IN THE CALIFORNIA ENERGY CODE AND CHAPTER 10 OF THE CALIFORNIA ADMINISTRATIVE CODE.

[2] FOR PROPERTY LINES THAT ABUT PUBLIC WALKWAYS, BIKEWAYS, PLAZAS AND PARKING LOTS, THE PROPERTY LINE MAY BE CONSIDERED TO BE 5 FEET BEYOND THE ACTUAL PROPERTY LINE FOR PURPOSE OF DETERMINING COMPLIANCE WITH THIS SECTION. FOR PROPERTY LINES THAT ABUT PUBLIC ROADWAYS AND PUBLIC TRANSIT CORRIDORS, THE PROPERTY LINE MAY BE CONSIDERED TO BE THE CENTERLINE OF THE PUBLIC ROADWAY OR PUBLIC TRANSIT CORRIDOR FOR THE PURPOSE OF DETERMINING COMPLIANCE WITH THIS SECTION.

[3] GENERAL LIGHTING LUMINAIRES IN AREAS SUCH AS OUTDOOR PARKING, SALES OR STORAGE LOTS SHALL MEET THESE REDUCED RATINGS. DECORATIVE LUMINAIRES LOCATED IN THESE AREAS SHALL MEET U-VALUE LIMITS FOR "ALL OTHER OUTDOOR LIGHTING."

5.106.8.1 FACING - BACKLIGHT
LUMINAIRES WITHIN 2MH OF A PROPERTY LINE SHALL BE ORIENTED SO THAT THE NEAREST PROPERTY LINE IS BEHIND THE FIXTURE, AND SHALL COMPLY WITH THE BACKLIGHT RATING SPECIFIED IN TABLE 5.106.8 BASED ON THE LIGHTING ZONE AND DISTANCE TO THE NEAREST POINT OF THAT PROPERTY LINE.

EXCEPTION: CORNERS. IF TWO PROPERTY LINES (OR TWO SEGMENTS OF THE SAME PROPERTY LINE) HAVE EQUIDISTANT POINTS TO THE LUMINAIRE, THEN THE LUMINAIRE MAY BE ORIENTED SO THAT THE INTERSECTION OF THE TWO LINES (THE CORNER) IS DIRECTLY BEHIND THE LUMINAIRE. THE LUMINAIRE SHALL STILL USE THE DISTANCE TO THE NEAREST POINT(S) ON THE PROPERTY LINES TO DETERMINE THE REQUIRED BACKLIGHT RATING.

5.106.8.2 FACING - GLARE
FOR LUMINAIRES COVERED BY 5.106.8.1, IF A PROPERTY LINE ALSO EXISTS WITHIN OR EXTENDS INTO THE FRONT HEMISPHERE WITHIN 2MH OF THE LUMINAIRE THEN THE LUMINAIRE SHALL COMPLY WITH THE MORE STRINGENT GLARE RATING SPECIFIED IN TABLE 5.106.8 BASED ON THE LIGHTING ZONE AND DISTANCE TO THE NEAREST POINT ON THE NEAREST PROPERTY LINE WITHIN THE FRONT HEMISPHERE.

5.106.10 GRADING AND PAVING
CONSTRUCTION PLANS SHALL INDICATE HOW SITE GRADING OR A DRAINAGE SYSTEM WILL MANAGE ALL SURFACE WATER FLOWS TO KEEP WATER FROM ENTERING BUILDINGS. EXAMPLES OF METHODS TO MANAGE SURFACE WATER INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. SWALES.
2. WATER COLLECTION AND DISPOSAL SYSTEMS.
3. FRENCH DRAINS.
4. WATER RETENTION GARDENS.
5. OTHER WATER MEASURES WHICH KEEP SURFACE WATER AWAY FROM BUILDINGS AND AID IN GROUNDWATER RECHARGE.

EXCEPTION: ADDITIONS AND ALTERATIONS NOT ALTERING THE DRAINAGE PATH.

5.106.12 SHADE TREES
[DSA-SS] SHADE TREES SHALL BE PLANTED TO COMPLY WITH ***SECTIONS 5.106.12.1***, ***5.106.12.2***, AND ***5.106.12.3***. PERCENTAGES SHOWN SHALL BE MEASURED AT NOON ON THE SUMMER SOLSTICE. LANDSCAPE IRRIGATION NECESSARY TO ESTABLISH AND MAINTAIN TREE HEALTH SHALL COMPLY WITH ***SECTION 5.304.6***.

5.106.12.1 SURFACE PARKING AREAS
SHADE TREE PLANTINGS, MINIMUM #10 CONTAINER SIZE OR EQUAL, SHALL BE INSTALLED TO PROVIDE SHADE OVER 50 PERCENT OF THE PARKING AREA WITHIN 15 YEARS.

EXCEPTIONS: THE SURFACE PARKING AREA COVERED BY SOLAR PHOTOVOLTAIC SHADE STRUCTURES, OR SHADE STRUCTURES, WITH ROOFING MATERIALS THAT COMPLY WITH ***TABLE A5.106.11.2.2*** IN APPENDIX A5, SHALL BE PERMITTED IN WHOLE OR IN PART IN LIEU OF SHADE TREE PLANTINGS.

5.106.12.2 LANDSCAPE AREAS
SHADE TRESS PLANTINGS, MINIMUM #10 CONTAINER SIZE OR EQUAL SHALL BE INSTALLED TO PROVIDE SHADE OF 20% OF THE LANDSCAPE AREA WITHIN 15 YEARS.

EXCEPTIONS: PLAYFIELDS FOR ORGANIZED SPORT ACTIVITY ARE NOT INCLUDED IN THE TOTAL AREA CALCULATION.

5.106.12.3. HARDSCAPE AREAS.
SHADE TREE PLANTINGS, MINIMUM #10 CONTAINER SIZE OR EQUAL SHALL BE INSTALLED TO PROVIDE SHADE OVER 20% OF THE HARDSCAPE AREA WITHIN 15 YEARS.

EXCEPTIONS: WALKS, HARDSCAPE AREAS COVERED BY SOLAR PHOTOVOLTAIC SHADE STRUCTURES, AND HARDSCAPE AREAS COVERED BY SHADE STRUCTURES WITH ROOFING MATERIALS THAT COMPLY WITH ***TABLE A5.106.11.2.2*** IN APPENDIX A5, SHALL BE PERMITTED IN WHOLE OR IN PART IN LIEU OF SHADE TREE PLANTINGS. DESIGNATED AND MARKED PLAY AREAS OF ORGANIZED SPORT ACTIVITY ARE NOT INCLUDED IN THE TOTAL AREA CALCULATION..

DIVISION 5.2 ENERGY EFFICIENCY

5.201 GENERAL

5.201.1 SCOPE. CALIFORNIA ENERGY CODE
FOR THE PURPOSES OF MANDATORY ENERGY EFFICIENCY STANDARDS IN THIS CODE, THE CALIFORNIA ENERGY COMMISSION WILL CONTINUE TO ADOPT MANDATORY BUILDING STANDARDS.

DIVISION 5.3 WATER EFFICIENCY AND CONSERVATION

5.301 GENERAL

5.301.1 SCOPE
THE PROVISIONS OF THIS CHAPTER SHALL ESTABLISH THE MEANS OF CONSERVING WATER USED INDOORS, OUTDOORS AND IN WASTEWATER CONVEYANCE.

5.303 INDOOR WATER USE

CITY OF SAN LUIS OBISPO

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: CAL GREEN REQUIREMENTS

LICENSED ARCHITECT JONATHAN HOUCK 9/13/24 C 40884 10-31-25 RENEWAL DATE STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	G-203

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 2 (JANUARY 2023)

5.303.1.2 EXCESS CONSUMPTION
A SEPARATE SUBMETER OR METERING DEVICE SHALL BE PROVIDED FOR ANY TENANT WITHIN A NEW BUILDING OR WITHIN AN ADDITION THAT IS PROJECTED TO CONSUME MORE THAN 1,000 GAL/DAY.

5.303.3 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS
PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) SHALL COMPLY WITH THE FOLLOWING:

5.303.3.1 WATER CLOSETS
THE EFFECTIVE FLUSH VOLUME OF ALL WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS PER FLUSH. TANK-TYPE WATER CLOSETS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR TANK-TYPE TOILETS.

NOTE: THE EFFECTIVE FLUSH VOLUME OF DUAL FLUSH TOILETS IS DEFINED AS THE COMPOSITE, AVERAGE FLUSH VOLUME OF TWO REDUCED FLUSHES AND ONE FULL FLUSH.

5.303.3.2 URINALS

5.303.3.2.1 WALL-MOUNTED URINALS
THE EFFECTIVE FLUSH VOLUME OF WALL-MOUNTED URINALS SHALL NOT EXCEED 0.125 GALLONS PER FLUSH.

5.303.3.2.2 FLOOR-MOUNTED URINALS
THE EFFECTIVE FLUSH VOLUME OF FLOOR-MOUNTED OR OTHER URINALS SHALL NOT EXCEED 0.5 GALLONS PER FLUSH.

5.303.3.3 SHOWERHEADS.

5.303.3.3.1 SINGLE SHOWERHEAD
SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS PER MINUTE AT 80 PSI. SHOWERHEADS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR SHOWERHEADS.

5.303.3.3.2 MULTIPLE SHOWERHEADS SERVING ONE SHOWER
WHEN A SHOWER IS SERVED BY MORE THAN ONE SHOWERHEAD, THE COMBINED FLOW RATE OF ALL SHOWERHEADS AND/OR OTHER SHOWER OUTLETS CONTROLLED BY A SINGLE VALVE SHALL NOT EXCEED 1.8 GALLONS PER MINUTE AT 80 PSI, OR THE SHOWER SHALL BE DESIGNED TO ALLOW ONLY ONE SHOWER OUTLET TO BE IN OPERATION AT A TIME.

NOTE: A HAND-HELD SHOWER SHALL BE CONSIDERED A SHOWERHEAD.

5.303.3.4 FAUCETS AND FOUNTAINS

5.303.3.4.1 NONRESIDENTIAL LAVATORY FAUCETS
LAVATORY FAUCETS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 0.5 GALLONS PER MINUTE AT 60 PSI.

5.303.3.4.2 KITCHEN FAUCETS
KITCHEN FAUCETS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS PER MINUTE AT 60 PSI. KITCHEN FAUCETS MAY TEMPORARILY INCREASE THE FLOW ABOVE THE MAXIMUM RATE, BUT NOT TO EXCEED 2.2 GALLONS PER MINUTE AT 60 PSI, AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GALLONS PER MINUTE AT 60 PSI.

5.303.3.4.3 WASH FOUNTAINS
WASH FOUNTAINS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS PER MINUTE/20 [RIM SPACE (INCHES) AT 60 PSI].

5.303.3.4.4 METERING FAUCETS
METERING FAUCETS SHALL NOT DELIVER MORE THAN 0.20 GALLONS PER CYCLE.

5.303.3.4.5 METERING FAUCETS FOR WASH FOUNTAINS
METERING FAUCETS FOR WASH FOUNTAINS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 0.20 GALLONS PER CYCLE/20 [RIM SPACE (INCHES) AT 60 PSI].

NOTE: WHERE COMPLYING FAUCETS ARE UNAVAILABLE, AERATORS OR OTHER MEANS MAY BE USED TO ACHIEVE REDUCTION.

5.303.3.4.6 PRE-RINSE SPRAY VALVE
WHEN INSTALLED, SHALL MEET THE REQUIREMENTS IN THE CALIFORNIA CODE OF REGULATIONS, TITLE 20 (APPLIANCE EFFICIENCY REGULATIONS), SECTION 1605.1(H)(4) TABLE H-2, SECTION 1605.3(H)(4)(A), AND SECTION 1607(D)(7), AND SHALL BE EQUIPPED WITH AN INTEGRAL AUTOMATIC SHUTOFF.

5.303.4 COMMERCIAL KITCHEN EQUIPMENT

5.303.4.1 FOOD WASTE DISPOSERS
DISPOSERS SHALL EITHER MODULATE THE USE OF WATER TO NO MORE THAN 1 GPM WHEN THE DISPOSER IS NOT IN USE (NOT ACTIVELY GRINDING FOOD WASTE/NO-LOAD) OR SHALL AUTOMATICALLY SHUT OFF AFTER NO MORE THAN 10 MINUTES OF INACTIVITY. DISPOSERS SHALL USE NO MORE THAN 8 GPM OF WATER.

NOTE: THIS CODE SECTION DOES NOT AFFECT LOCAL JURISDICTION AUTHORITY TO PROHIBIT OR REQUIRE DISPOSER INSTALLATION.

5.303.5 AREAS OF ADDITION OR ALTERATION
FOR THOSE OCCUPANCIES WITHIN THE AUTHORITY OF THE CALIFORNIA BUILDING STANDARDS COMMISSION AS SPECIFIED IN ***SECTION 103***, THE PROVISIONS OF ***SECTIONS 5.303.3*** AND ***5.303.4*** SHALL APPLY TO NEW FIXTURES IN ADDITIONS OR AREAS OF ALTERATION TO THE BUILDING.

5.303.6 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS
PLUMBING FIXTURES AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE *CALIFORNIA PLUMBING CODE*, AND SHALL MEET THE APPLICABLE STANDARDS REFERENCED IN ***TABLE 1701.1*** OF THE *CALIFORNIA PLUMBING CODE* AND IN ***CHAPTER 6*** OF THIS CODE.

5.304.6.1 NEWLY CONSTRUCTED LANDSCAPES
NEW CONSTRUCTION PROJECTS WITH AN AGGREGATE LANDSCAPE AREA EQUAL TO OR GREATER THAN 500 SQUARE FEET.

5.304.6.2 REHABILITATED LANDSCAPES
REHABILITATED LANDSCAPE PROJECTS WITH AN AGGREGATE LANDSCAPE AREA EQUAL TO OR GREATER THAN 1,200 SQUARE FEET.

DIVISION 5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

5.401 GENERAL

5.401.1 SCOPE
THE PROVISIONS OF THIS CHAPTER SHALL OUTLINE MEANS OF ACHIEVING MATERIAL CONSERVATION AND RESOURCE EFFICIENCY THROUGH PROTECTION OF BUILDINGS FROM EXTERIOR MOISTURE, CONSTRUCTION WASTE DIVERSION, EMPLOYMENT OF TECHNIQUES TO REDUCE POLLUTION THROUGH RECYCLING OF MATERIALS, AND BUILDING COMMISSIONING OR TESTING AND ADJUSTING.

5.407 WATER RESISTANCE AND MOISTURE MANAGEMENT

5.407.1 WEATHER PROTECTION
PROVIDE A WEATHER-RESISTANT EXTERIOR WALL AND FOUNDATION ENVELOPE AS REQUIRED BY *CALIFORNIA BUILDING CODE* ***SECTION 1402.2*** (WEATHER PROTECTION), MANUFACTURER'S INSTALLATION INSTRUCTIONS OR LOCAL ORDINANCE, WHICHEVER IS MORE STRINGENT.

5.407.2 MOISTURE CONTROL
EMPLOY MOISTURE CONTROL MEASURES BY THE FOLLOWING METHODS.

5.407.2.1 SPRINKLERS
DESIGN AND MAINTAIN LANDSCAPE IRRIGATION SYSTEMS TO PREVENT SPRAY ON STRUCTURES.

5.407.2.2 ENTRIES AND OPENINGS
DESIGN EXTERIOR ENTRIES AND/OR OPENINGS SUBJECT TO FOOT TRAFFIC OR WIND-DRIVEN RAIN TO PREVENT WATER INTRUSION INTO BUILDINGS AS FOLLOWS:

5.407.2.2.1 EXTERIOR DOOR PROTECTION
PRIMARY EXTERIOR ENTRIES SHALL BE COVERED TO PREVENT WATER INTRUSION BY USING NONABSORBENT FLOOR AND WALL FINISHES WITHIN AT LEAST 2 FEET AROUND AND PERPENDICULAR TO SUCH OPENINGS PLUS AT LEAST ONE OF THE FOLLOWING:

1. AN INSTALLED AWNING AT LEAST 4 FEET IN DEPTH.
2. THE DOOR IS PROTECTED BY A ROOF OVERHANG AT LEAST 4 FEET IN DEPTH.
3. THE DOOR IS RECESSED AT LEAST 4 FEET.
4. OTHER METHODS WHICH PROVIDE EQUIVALENT PROTECTION.

5.407.2.2.2 FLASHING
INSTALL FLASHINGS INTEGRATED WITH A DRAINAGE PLANE.

SECTION 5.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

5.408.1 CONSTRUCTION WASTE MANAGEMENT
RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 65 PERCENT OF THE NONHAZARDOUS CONSTRUCTION AND DEMOLITION WASTE IN ACCORDANCE WITH ***SECTION 5.408.1.1***, ***5.408.1.2*** OR ***5.408.1.3***; OR MEET A LOCAL CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT ORDINANCE, WHICHEVER IS MORE STRINGENT.

5.408.1.1 CONSTRUCTION WASTE MANAGEMENT PLAN
WHERE A LOCAL JURISDICTION DOES NOT HAVE A CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT ORDINANCE THAT IS MORE STRINGENT, SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN THAT

1. IDENTIFIES THE CONSTRUCTION AND DEMOLITION WASTE MATERIALS TO BE DIVERTED FROM DISPOSAL BY EFFICIENT USAGE, RECYCLING, REUSE ON THE PROJECT OR SALVAGE FOR FUTURE USE OR SALE.
2. DETERMINES IF CONSTRUCTION AND DEMOLITION WASTE MATERIALS WILL BE SORTED ON-SITE (SOURCE-SEPARATED) OR BULK MIXED (SINGLE STREAM).
3. IDENTIFIES DIVERSION FACILITIES WHERE CONSTRUCTION AND DEMOLITION WASTE MATERIAL COLLECTED WILL BE TAKEN.
4. SPECIFIES THAT THE AMOUNT OF CONSTRUCTION AND DEMOLITION WASTE MATERIALS DIVERTED SHALL BE CALCULATED BY WEIGHT OR VOLUME, BUT NOT BY BOTH.}

5.408.1.2 WASTE MANAGEMENT COMPANY
UTILIZE A WASTE MANAGEMENT COMPANY THAT CAN PROVIDE VERIFIABLE DOCUMENTATION THAT THE PERCENTAGE OF CONSTRUCTION AND DEMOLITION WASTE MATERIAL DIVERTED FROM THE LANDFILL COMPLIES WITH THIS SECTION.

NOTE: THE OWNER OR CONTRACTOR SHALL MAKE THE DETERMINATION IF THE CONSTRUCTION AND DEMOLITION WASTE MATERIAL WILL BE DIVERTED BY A WASTE MANAGEMENT COMPANY.

EXCEPTIONS TO *SECTIONS 5.408.1.1* AND *5.408.1.2*:

1. EXCAVATED SOIL AND LAND-CLEARING DEBRIS.
2. ALTERNATE WASTE REDUCTION METHODS DEVELOPED BY WORKING WITH LOCAL AGENCIES IF DIVERSION OR RECYCLE FACILITIES CAPABLE OF COMPLIANCE WITH THIS ITEM DO NOT EXIST.
3. DEMOLITION WASTE MEETING LOCAL ORDINANCE OR CALCULATED IN CONSIDERATION OF LOCAL RECYCLING FACILITIES AND MARKETS.

5.408.1.3 WASTE STREAM REDUCTION ALTERNATIVE
THE COMBINED WEIGHT OF NEW CONSTRUCTION DISPOSAL THAT DOES NOT EXCEED TWO POUNDS PER SQUARE FOOT OF BUILDING AREA MAY BE DEEMED TO MEET THE 65 PERCENT MINIMUM REQUIREMENT AS APPROVED BY THE ENFORCING AGENCY.

5.408.1.4 DOCUMENTATION
DOCUMENTATION SHALL BE PROVIDED TO THE ENFORCING AGENCY WHICH DEMONSTRATES COMPLIANCE WITH ***SECTIONS 5.408.1.1*** THROUGH ***5.408.1.3***. THE WASTE MANAGEMENT PLAN SHALL BE UPDATED AS NECESSARY AND SHALL BE ACCESSIBLE DURING CONSTRUCTION FOR EXAMINATION BY THE ENFORCING AGENCY.

NOTES:
1. SAMPLE FORMS FOUND IN "*A GUIDE TO THE CALIFORNIA GREEN BUILDING STANDARDS CODE (NONRESIDENTIAL)*" LOCATED AT https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-CommissionResources-List-Folder/CALGreen MAY BE USED TO ASSIST IN DOCUMENTING COMPLIANCE WITH THE WASTE MANAGEMENT PLAN.
2. MIXED CONSTRUCTION AND DEMOLITION DEBRIS (C&D) PROCESSORS CAN BE LOCATED AT THE CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY (CALRECYCLE).

5.408.2 UNIVERSAL WASTE.
[A] ADDITIONS AND ALTERATIONS TO A BUILDING OR TENANT SPACE THAT MEET THE SCOPING PROVISIONS IN ***SECTION 301.3*** FOR NONRESIDENTIAL ADDITIONS AND ALTERATIONS, SHALL REQUIRE VERIFICATION THAT UNIVERSAL WASTE ITEMS SUCH AS FLUORESCENT LAMPS AND BALLAST AND MERCURY CONTAINING THERMOSTATS AS WELL AS OTHER CALIFORNIA PROHIBITED UNIVERSAL WASTE MATERIALS ARE DISPOSED OF PROPERLY AND ARE DIVERTED FROM LANDFILLS. A LIST OF PROHIBITED UNIVERSAL WASTE MATERIALS SHALL BE INCLUDED IN THE CONSTRUCTION DOCUMENTS.

NOTE: REFER TO THE UNIVERSAL WASTE RULE LINK AT: https://dtsc.ca.gov/universalwaste/

5.408.3 EXCAVATED SOIL AND LAND CLEARING DEBRIS
100 PERCENT OF TREES, STUMPS, ROCKS AND ASSOCIATED VEGETATION AND SOILS RESULTING PRIMARILY FROM LAND CLEARING SHALL BE REUSED OR RECYCLED. FOR A PHASED PROJECT, SUCH MATERIAL MAY BE STOCKPILED ON SITE UNTIL THE STORAGE SITE IS DEVELOPED.

EXCEPTION: REUSE, EITHER ON-OR OFF-SITE, OF VEGETATION OR SOIL CONTAMINATED BY DISEASE OR PEST INFESTATION.

NOTES:
1. IF CONTAMINATION BY DISEASE OR PEST INFESTATION IS SUSPECTED, CONTACT THE COUNTY AGRICULTURAL COMMISSIONER AND FOLLOW ITS DIRECTION FOR RECYCLING OR DISPOSAL OF THE MATERIAL. (www.cdfa.ca.gov/exec/county/county_contacts.html)
2. FOR A MAP OF KNOWN PEST AND/OR DISEASE QUARANTINE ZONES, CONSULT WITH THE CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE. (www.cdfa.ca.gov)

5.410 BUILDING MAINTENANCE AND OPERATIONS

5.410.1 RECYCLING BY OCCUPANTS
PROVIDE READILY ACCESSIBLE AREAS THAT SERVE THE ENTIRE BUILDING AND ARE IDENTIFIED FOR THE DEPOSITING, STORAGE AND COLLECTION OF NON-HAZARDOUS MATERIALS FOR RECYCLING, INCLUDING (AT A MINIMUM) PAPER, CORRUGATED CARDBOARD, GLASS, PLASTICS, ORGANIC WASTE, AND METALS OR MEET A LAWFULLY ENACTED LOCAL RECYCLING ORDINANCE, IF MORE RESTRICTIVE.

EXCEPTION: RURAL JURISDICTIONS THAT MEET AND APPLY FOR THE EXEMPTION IN PUBLIC RESOURCES CODE 42649.82 (A)(2)(A) ET SEQ. SHALL ALSO BE EXEMPT FROM THE ORGANIC WASTE PORTION OF THIS SECTION.

5.410.1.1 ADDITIONS
ALL ADDITIONS CONDUCTED WITHIN A 12-MONTH PERIOD UNDER SINGLE OR MULTIPLE PERMITS, RESULTING IN AN INCREASE OF 30 PERCENT OR MORE IN FLOOR AREA, SHALL PROVIDE RECYCLING AREAS ON SITE.

EXCEPTION:ADDITIONS WITHIN A TENANT SPACE RESULTING IN LESS THAN A 30-PERCENT INCREASE IN THE TENANT SPACE FLOOR AREA.

5.410.1.2 SAMPLE ORDINANCE
SPACE ALLOCATION FOR RECYCLING AREAS SHALL COMPLY WITH CHAPTER 18, PART 3, DIVISION 30 OF THE *PUBLIC RESOURCES CODE.* CHAPTER 18 IS KNOWN AS THE CALIFORNIA SOLID WASTE REUSE AND RECYCLING ACCESS ACT OF 1991 (ACT).

NOTE: A SAMPLE ORDINANCE FOR USE BY LOCAL AGENCIES MAY BE FOUND IN APPENDIX A OF THE DOCUMENT AT THE CALRECYCLE'S WEBSITE

DIVISION 5.5 ENVIRONMENTAL QUALITY

5.501 GENERAL

5.501.1 SCOPE
THE PROVISIONS OF THIS CHAPTER SHALL OUTLINE MEANS OF REDUCING THE QUANTITY OF AIR CONTAMINANTS THAT ARE ODOROUS, IRRITATING, AND/OR HARMFUL TO THE COMFORT AND WELL-BEING OF A BUILDING'S INSTALLERS, OCCUPANTS AND NEIGHBORS.

5.503 FIREPLACES

5.503.1 FIREPLACES
INSTALL ONLY A DIRECT-VENT SEALED-COMBUSTION GAS OR SEALED WOOD-BURNING FIREPLACE, OR A SEALED WOOD-STOVE OR PELLET STOVE, AND REFER TO RESIDENTIAL REQUIREMENTS IN THE *CALIFORNIA ENERGY CODE*, TITLE 24, PART 6, SUBCHAPTER 7, SECTION 150. WOODSTOVES, PELLET STOVES AND FIREPLACES SHALL COMPLY WITH APPLICABLE LOCAL ORDINANCES.

5.503.1.1 WOODSTOVES
WOODSTOVE AND PELLET STOVES SHALL COMPLY WITH U.S. EPA NEW SOURCE PERFORMANCE STANDARDS (NSPS) EMISSION LIMITS AS APPLICABLE, AND SHALL HAVE A PERMANENT LABEL INDICATING THEY ARE CERTIFIED TO MEET THE EMISSION LIMITS.

5.504 POLLUTANT CONTROL

5.504.1 TEMPORARY VENTILATION
THE PERMANENT HVAC SYSTEM SHALL ONLY BE USED DURING CONSTRUCTION IF NECESSARY TO CONDITION THE BUILDING OR AREAS OF ADDITION OR ALTERATION WITHIN THE REQUIRED TEMPERATURE RANGE FOR MATERIAL AND EQUIPMENT INSTALLATION. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, USE RETURN AIR FILTERS WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8, BASED ON ASHRAE 52.2-1999, OR AN AVERAGE EFFICIENCY OF 30 PERCENT BASED ON ASHRAE 52.1-1992. REPLACE ALL FILTERS IMMEDIATELY PRIOR TO OCCUPANCY, OR, IF THE BUILDING IS OCCUPIED DURING ALTERATION, AT THE CONCLUSION OF CONSTRUCTION.

5.504.3 COVERING OF DUCT OPENINGS AND PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION
AT THE TIME OF ROUGH INSTALLATION AND DURING STORAGE ON THE CONSTRUCTION SITE UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEETMETAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST, WATER AND DEBRIS WHICH MAY ENTER THE SYSTEM.

5.504.4 FINISH MATERIAL POLLUTANT CONTROL
FINISH MATERIALS SHALL COMPLY WITH SECTIONS ***5.504.4.1*** THROUGH ***5.504.4.6***.

5.504.4.1 ADHESIVES, SEALANTS AND CAULKS
ADHESIVES, SEALANTS, AND CAULKS USED ON THE PROJECT SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS:

1. ADHESIVES, ADHESIVE BONDING PRIMERS, ADHESIVE PRIMERS, SEALANTS, SEALANT PRIMERS AND CAULKS SHALL COMPLY WITH LOCAL OR REGIONAL AIR POLLUTION CONTROL OR AIR QUALITY MANAGEMENT DISTRICT RULES WHERE APPLICABLE, OR SCAQMD RULE 1168 VOC LIMITS, AS SHOWN IN ***TABLES 5.504.4.1*** AND ***5.504.4.2***. SUCH PRODUCTS ALSO SHALL COMPLY WITH THE RULE 1168 PROHIBITION ON THE USE OF CERTAIN TOXIC COMPOUNDS (CHLOROFORM, ETHYLENE DICHLORIDE, METHYLENE CHLORIDE, PERCHLOROETHYLENE AND TRICHLOROETHYLENE), EXCEPT FOR AEROSOL PRODUCTS AS SPECIFIED IN SUBSECTION 2, BELOW.
2. AEROSOL ADHESIVES, AND SMALLER UNIT SIZES OF ADHESIVES, AND SEALANT OR CAULKING COMPOUNDS (IN UNITS OF PRODUCT, LESS PACKAGING, WHICH DO NOT WEIGH MORE THAN ONE POUND AND DO NOT CONSIST OF MORE THAN 16 FLUID OUNCES) SHALL COMPLY WITH STATEWIDE VOC STANDARDS AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS, OF *CALIFORNIA CODE OF REGULATIONS*, TITLE 17, COMMENCING WITH SECTION 94507.

TABLE 5.504.4.1 - ADHESIVE VOC LIMIT[1,2]
(LESS WATER AND LESS EXEMPT COMPOUNDS IN GRAMS PER LITER)

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVES	100
RUBBER FLOORING ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT AND ASPHALT TILE ADHESIVES	50
DRYWALL AND PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVES	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT SPECIFICALLY LISTED	50
SPECIALTY APPLICATIONS	
PVC WELDING	510
CPVC WELDING	490
ABS WELDING	325
PLASTIC CEMENT WELDING	250
ADHESIVE PRIMER FOR PLASTIC	550
CONTACT ADHESIVE	80
SPECIAL PURPOSE CONTACT ADHESIVE	250
STRUCTURAL WOOD MEMBER ADHESIVE	140
TOP AND TRIM ADHESIVES	250
SUBSTRATE SPECIFIC APPLICATIONS	
METAL TO METAL	30
PLASTIC FOAMS	50
POROUS MATERIAL (EXCEPT WOOD)	50
WOOD	30
FIBERGLASS	80

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER, THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.
2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168. HTTP://WWW.ARB.CA.GOV/DRDB/SC/CURHTML/R1168.PDF.

CITY OF SAN LUIS OBISPO

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: CAL GREEN REQUIREMENTS

LICENSED ARCHITECT
JONATHAN HOUCK
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY: JR
DRAWN BY: JR
CHECKED BY:
APPROVED BY: JH
SCALE:
DATE: 6/20/24
CITY SPECIFICATION NO. 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO. G-204

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 3 (JANUARY 2023)

TABLE 5.504.4.2 - SEALANT VOC LIMIT
(LESS WATER AND LESS EXEMPT COMPOUNDS IN GRAMS PER LITER)

SEALANTS	CURRENT VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NONPOROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

NOTE: FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THESE TABLES, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

5.504.4.3 PAINTS AND COATINGS
ARCHITECTURAL PAINTS AND COATINGS SHALL COMPLY WITH VOC LIMITS IN TABLE 1 OF THE ARB ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, AS SHOWN IN ***TABLE 5.504.4.3***, UNLESS MORE STRINGENT LOCAL LIMITS APPLY. THE VOC CONTENT LIMIT FOR COATINGS THAT DO NOT MEET THE DEFINITIONS FOR THE SPECIALTY COATINGS CATEGORIES LISTED IN ***TABLE 5.504.4.3*** SHALL BE DETERMINED BY CLASSIFYING THE COATING AS A FLAT, NONFLAT OR NONFLAT-HIGH GLOSS COATING, BASED ON ITS GLOSS, AS DEFINED IN SUBSECTIONS 4.21, 4.36 AND 4.37 OF THE 2007 CALIFORNIA AIR RESOURCES BOARD SUGGESTED CONTROL MEASURE, AND THE CORRESPONDING FLAT, NONFLAT OR NONFLAT-HIGH GLOSS VOC LIMIT IN ***TABLE 5.504.4.3*** SHALL APPLY.

TABLE 5.504.4.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2, 3]
(GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS)

COATING CATEGORY	CURRENT VOC LIMIT
FLAT COATINGS	50
NONFLAT COATINGS	100
NONFLAT-HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH TEMPERATURE COATINGS	420
IDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS[1]	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, AND UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS AND UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB AND TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER AND INCLUDING EXEMPT COMPOUNDS.
2. THE SPECIFIED LIMITS REMAIN IN EFFECT ENLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE
3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEBUARY 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

5.504.4.3.1 AEROSOL PAINTS AND COATINGS

AEROSOL PAINTS AND COATINGS SHALL MEET THE PWMIR LIMITS FOR ROC IN SECTION 94522(A)(3) AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS AND OZONE DEPLETING SUBSTANCES, IN SECTIONS 94522(C)(2) AND (D)(2) OF *CALIFORNIA CODE OF REGULATIONS*, TITLE 17, COMMENCING WITH SECTION 94520; AND IN AREAS UNDER THE JURISDICTION OF THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT ADDITIONALLY COMPLY WITH THE PERCENT VOC BY WEIGHT OF PRODUCT LIMITS OF REGULATION 8 RULE 49.

5.504.4.3.2 VERIFICATION
VERIFICATION OF COMPLIANCE WITH THIS SECTION SHALL BE PROVIDED AT THE REQUEST OF THE ENFORCING AGENCY. DOCUMENTATION MAY INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:

1. MANUFACTURER'S PRODUCT SPECIFICATION
2. FIELD VERIFICATION OF ON-SITE PRODUCT CONTAINERS

5.504.4.4 CARPET SYSTEMS
ALL CARPET INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS FOR THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.2, JANUARY 2017 (EMISSION TESTING METHOD FOR CALIFORNIA SPECIFICATION 01350).
SEE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH'S WEBSITE FOR CERTIFICATION PROGRAMS AND TESTING LABS.
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.4.1 CARPET CUSHION
ALL CARPET CUSHION INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.2, JANUARY 2017 (EMISSION TESTING METHOD FOR CALIFORNIA SPECIFICATION 01350).
SEE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH'S WEBSITE FOR CERTIFICATION PROGRAMS AND TESTING LABS.
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.4.2 CARPET ADHESIVE
ALL CARPET ADHESIVE SHALL MEET THE REQUIREMENTS OF ***TABLE 5.504.4.1***.

5.504.4.5 COMPOSITE WOOD PRODUCTS
HARDWOOD PLYWOOD, PARTICLEBOARD AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED ON THE INTERIOR OR EXTERIOR OF THE BUILDING SHALL MEET THE REQUIREMENTS FOR FORMALDEHYDE AS SPECIFIED IN ARB'S AIR TOXIC CONTROL MEASURE (ATCM) FOR COMPOSITE WOOD (17 CCR 93120 ET SEQ.) THOSE MATERIALS NOT EXEMPTED UNDER THE ATCM MUST MEET THE SPECIFIED EMISSION LIMITS, AS SHOWN IN ***TABLE 5.504.4.5***.

5.504.4.5.3 DOCUMENTATION
VERIFICATION OF COMPLIANCE WITH THIS SECTION SHALL BE PROVIDED AS REQUESTED BY THE ENFORCING AGENCY. DOCUMENTATION SHALL INCLUDE AT LEAST ONE OF THE FOLLOWING:

1. PRODUCT CERTIFICATIONS AND SPECIFICATIONS.
2. CHAIN OF CUSTODY CERTIFICATIONS.
3. PRODUCT LABELED AND INVOICED AS MEETING THE COMPOSITE WOOD PRODUCTS REGULATION (SEE CCR, TITLE 17, SECTION 93120, *ET SEQ.*).
4. EXTERIOR GRADE PRODUCTS MARKED AS MEETING THE PS-1 OR PS-2 STANDARDS OF THE ENGINEERED WOOD ASSOCIATION, THE AUSTRALIAN AS/NZS 2269 OR EUROPEAN 636 3S STANDARDS.
5. OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY.

TABLE 5.504.4.5 - FORMALDEHYDE LIMITS[1]
(MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION)

PRODUCT	CURRENT LIMIT
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLEBOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E1333. FOR ADDITIONAL INFORMATION, SEE CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.
2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16 INCH (8MM).

5.504.4.6 RESILIENT FLOOR SYSTEMS
WHERE RESILIENT FLOORING IS INSTALLED, AT LEAST 80% OF FLOOR AREA RECEIVING RESILIENT FLOORING SHALL MEET THE REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.2, JANUARY 2017 (EMISSION TESTING METHOD FOR CALIFORNIA SPECIFICATION 01350).
SEE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH'S WEBSITE FOR CERTIFICATION PROGRAMS AND TESTING LABS.
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx#material

5.504.4.6.1 VERIFICATION OF COMPLIANCE
DOCUMENTATION SHALL BE PROVIDED VERIFYING THAT RESILIENT FLOORING MATERIALS MEET THE POLLUTANT EMISSION LIMITS.

5.504.5.3 FILTERS
IN MECHANICALLY VENTILATED BUILDINGS, PROVIDE REGULARLY OCCUPIED AREAS OF THE BUILDING WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8. MERV 8 FILTERS SHALL BE INSTALLED PRIOR TO OCCUPANCY, AND RECOMMENDATIONS FOR MAINTENANCE WITH FILTERS OF THE SAME VALUE SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL.

EXCEPTION: EXISTING MECHANICAL EQUIPMENT.

5.504.5.3.1 LABELING
INSTALLED FILTERS SHALL BE CLEARLY LABELED BY THE MANUFACTURER INDICATING THE MERV RATING.

5.504.7 ENVIRONMENTAL TOBACCO SMOKE (ETS) CONTROL
WHERE OUTDOOR AREAS ARE PROVIDED FOR SMOKING, PROHIBIT SMOKING WITHIN 25 FEET OF BUILDING ENTRIES, OUTDOOR AIR INTAKES AND OPERABLE WINDOWS AND WITHIN THE BUILDING AS ALREADY PROHIBITED BY OTHER LAWS OR REGULATIONS; OR AS ENFORCED BY ORDINANCES, REGULATIONS OR POLICIES OF ANY CITY, COUNTY, CITY AND COUNTY, CALIFORNIA COMMUNITY COLLEGE, CAMPUS OF THE CALIFORNIA STATE UNIVERSITY, OR CAMPUS OF THE UNIVERSITY OF CALIFORNIA, WHICHEVER ARE MORE STRINGENT. WHEN ORDINANCES, REGULATIONS OR POLICIES ARE NOT IN PLACE, POST SIGNAGE TO INFORM BUILDING OCCUPANTS OF THE PROHIBITIONS.

5.505 INDOOR MOISTURE CONTROL

5.505.1 INDOOR MOISTURE CONTROL
BUILDINGS SHALL MEET OR EXCEED THE PROVISIONS OF *CALIFORNIA BUILDING CODE*, CCR, TITLE 24, PART 2, SECTIONS 1202 (VENTILATION) AND CHAPTER 14 (EXTERIOR WALLS). FOR ADDITIONAL MEASURES, SEE ***SECTION 5.407.2*** OF THIS CODE.

5.506 INDOOR AIR QUALITY

5.506.1 OUTSIDE AIR DELIVERY
FOR MECHANICALLY OR NATURALLY VENTILATED SPACES IN BUILDINGS, MEET THE MINIMUM REQUIREMENTS OF ***SECTION 120.1*** (REQUIREMENTS FOR VENTILATION) OF THE *CALIFORNIA ENERGY CODE,* OR THE APPLICABLE LOCAL CODE, WHICHEVER IS MORE STRINGENT, AND DIVISION 1, CHAPTER 4 OF CCR, TITLE 8.

5.506.2 CARBON DIOXIDE (CO2) MONITORING
FOR BUILDINGS OR ADDITIONS EQUIPPED WITH DEMAND CONTROL VENTILATION, CO2 SENSORS AND VENTILATION CONTROLS SHALL BE SPECIFIED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE *CALIFORNIA ENERGY CODE,* SECTION 120(C)(4).

5.507 ENVIRONMENTAL COMFORT

5.507.4 ACOUSTICAL CONTROL
EMPLOY BUILDING ASSEMBLIES AND COMPONENTS WITH SOUND TRANSMISSION CLASS (STC) VALUES DETERMINED IN ACCORDANCE WITH ASTM E90 AND ASTM E413 OR OUTDOOR-INDOOR SOUND TRANSMISSION CLASS (OITC) DETERMINED IN ACCORDANCE WITH ASTM E1332, USING EITHER THE PRESCRIPTIVE OR PERFORMANCE METHOD IN ***SECTION 5.507.4.1*** OR ***5.507.4.2***.

EXCEPTION: BUILDINGS WITH FEW OR NO OCCUPANTS OR WHERE OCCUPANTS ARE NOT LIKELY TO BE AFFECTED BY EXTERIOR NOISE, AS DETERMINED BY THE ENFORCEMENT AUTHORITY, SUCH AS FACTORIES, STADIUMS, STORAGE, ENCLOSED PARKING STRUCTURES AND UTILITY BUILDINGS.

EXCEPTION: [DSA-SS] FOR PUBLIC SCHOOLS AND COMMUNITY COLLEGES, THE REQUIREMENTS OF THIS SECTION AND ALL SUBSECTIONS APPLY ONLY TO NEW CONSTRUCTION.

5.507.4.1 EXTERIOR NOISE TRANSMISSION, PRESCRIPTIVE METHOD
WALL AND ROOF-CEILING ASSEMBLIES EXPOSED TO THE NOISE SOURCE MAKING UP THE BUILDING OR ADDITION ENVELOPE OR ALTERED ENVELOPE SHALL MEET A COMPOSITE STC RATING OF AT LEAST 50 OR A COMPOSITE OITC RATING OF NO LESS THAN 40, WITH EXTERIOR WINDOWS OF A MINIMUM STC OF 40 OR OITC OF 30 IN THE FOLLOWING LOCATIONS:

1. WITHIN THE 65 CNEL NOISE CONTOUR OF AN AIRPORT.

   EXCEPTIONS:
   1. L_{DN} OR CNEL FOR MILITARY AIRPORTS SHALL BE DETERMINED BY THE FACILITY AIR INSTALLATION COMPATIBLE LAND USE ZONE (AICUZ) PLAN.
   2. L_{DN} OR CNEL FOR OTHER AIRPORTS AND HELIPORTS FOR WHICH A LAND USE PLAN HAS NOT BEEN DEVELOPED SHALL BE DETERMINED BY THE LOCAL GENERAL PLAN NOISE ELEMENT.
2. WITHIN THE 65 CNEL OR L_{DN} NOISE CONTOUR OF A FREEWAY OR EXPRESSWAY, RAILROAD, INDUSTRIAL SOURCE OR FIXED-GUIDEWAY SOURCE AS DETERMINED BY THE NOISE ELEMENT OF THE GENERAL PLAN.

5.507.4.1.1 NOISE EXPOSURE WHERE NOISE CONTOURS ARE NOT READILY AVAILABLE
BUILDINGS EXPOSED TO A NOISE LEVEL OF 65 DB L_{EQ}-1-HR DURING ANY HOUR OF OPERATION SHALL HAVE BUILDING, ADDITION OR ALTERATION EXTERIOR WALL AND ROOF-CEILING ASSEMBLIES EXPOSED TO THE NOISE SOURCE MEETING A COMPOSITE STC RATING OF AT LEAST 45 (OR OITC 35), WITH EXTERIOR WINDOWS OF A MINIMUM STC OF 40 (OR OITC 30).

5.507.4.2 PERFORMANCE METHOD
FOR BUILDINGS LOCATED AS DEFINED IN ***SECTION 5.507.4.1*** OR ***5.507.4.1.1***, WALL AND ROOF-CEILING ASSEMBLIES EXPOSED TO THE NOISE SOURCE MAKING UP THE BUILDING OR ADDITION ENVELOPE OR ALTERED ENVELOPE SHALL BE CONSTRUCTED TO PROVIDE AN INTERIOR NOISE ENVIRONMENT ATTRIBUTABLE TO EXTERIOR SOURCES THAT DOES NOT EXCEED AN HOURLY EQUIVALENT NOISE LEVEL (L_{EQ}-1HR) OF 50 DBA IN OCCUPIED AREAS DURING ANY HOUR OF OPERATION.

5.507.4.2.1 SITE FEATURES
EXTERIOR FEATURES SUCH AS SOUND WALLS OR EARTH BERMS MAY BE UTILIZED AS APPROPRIATE TO THE BUILDING, ADDITION OR ALTERATION PROJECT TO MITIGATE SOUND MIGRATION TO THE INTERIOR.

5.507.4.2.2 DOCUMENTATION OF COMPLIANCE
AN ACOUSTICAL ANALYSIS DOCUMENTING COMPLYING INTERIOR SOUND LEVELS SHALL BE PREPARED BY PERSONNEL APPROVED BY THE ARCHITECT OR ENGINEER OF RECORD.

5.507.4.3 INTERIOR SOUND TRANSMISSION
WALL AND FLOOR-CEILING ASSEMBLIES SEPARATING TENANT SPACES AND TENANT SPACES AND PUBLIC PLACES SHALL HAVE AN STC OF AT LEAST 40.

NOTE: EXAMPLES OF ASSEMBLIES AND THEIR VARIOUS STC RATINGS MAY BE FOUND AT THE CALIFORNIA OFFICE OF NOISE CONTROL: www.toolbase.org/PDF/CaseStudies/stc_icc_ratings.pdf.

5.508 OUTDOOR AIR QUALITY

5.508.1 OZONE DEPLETION AND GREENHOUSE GAS REDUCTIONS
INSTALLATIONS OF HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT SHALL COMPLY WITH ***SECTIONS 5.508.1.1*** AND ***5.508.1.2***.

5.508.1.1 CHLOROFLUOROCARBONS (CFCS)
INSTALL HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN CFCS.

5.508.1.2 HALONS
INSTALL HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN HALONS.

5.508.2 SUPERMARKET REFRIGERANT LEAK REDUCTION
NEW COMMERCIAL REFRIGERATION SYSTEMS SHALL COMPLY WITH THE PROVISIONS OF THIS SECTION WHEN INSTALLED IN RETAIL FOOD STORES 8,000 SQUARE FEET OR MORE CONDITIONED AREA, AND THAT UTILIZE EITHER REFRIGERATED DISPLAY CASES, OR WALK-IN COOLERS OR FREEZERS CONNECTED TO REMOTE COMPRESSOR UNITS OR CONDENSING UNITS. THE LEAK REDUCTION MEASURES APPLY TO REFRIGERATION SYSTEMS CONTAINING HIGH-GLOBAL-WARMING POTENTIAL (HIGH-GWP) REFRIGERANTS WITH A GWP OF 150 OR GREATER. NEW REFRIGERATION SYSTEMS INCLUDE BOTH NEW FACILITIES AND THE REPLACEMENT OF EXISTING REFRIGERATION SYSTEMS IN EXISTING FACILITIES.

EXCEPTION: REFRIGERATION SYSTEMS CONTAINING LOW-GLOBAL WARMING POTENTIAL (LOW-GWP) REFRIGERANT WITH A GWP VALUE LESS THAN 150 ARE NOT SUBJECT TO THIS SECTION. LOW-GWP REFRIGERANTS ARE NONOZONE-DEPLETING REFRIGERANTS THAT INCLUDE AMMONIA, CARBON DIOXIDE (CO_2), AND POTENTIALLY OTHER REFRIGERANTS.

5.508.2.1 REFRIGERANT PIPING
PIPING COMPLIANT WITH THE *CALIFORNIA MECHANICAL CODE* SHALL BE INSTALLED TO BE ACCESSIBLE FOR LEAK PROTECTION AND REPAIRS. PIPING RUNS USING THREADED PIPE, COPPER TUBING WITH AN OUTSIDE DIAMETER (OD) LESS THAN 1/4 INCH, FLARED TUBING CONNECTIONS AND SHORT RADIUS ELBOWS SHALL NOT BE USED IN REFRIGERANT SYSTEMS EXCEPT AS NOTED BELOW.

5.508.2.1.1 THREADED PIPE
THREADED CONNECTIONS ARE PERMITTED AT THE COMPRESSOR RACK.

5.508.2.1.2 COPPER PIPE
COPPER TUBING WITH AN OD LESS THAN 1/4 INCH MAY BE USED IN SYSTEMS WITH A REFRIGERANT CHARGE OF 5 POUNDS OR LESS.

5.508.2.1.2.1 ANCHORAGE
ONE-FOURTH-INCH OD TUBING SHALL BE SECURELY CLAMPED TO A RIGID BASE TO KEEP VIBRATION LEVELS BELOW 8 MILS.

5.508.2.1.3 FLARED TUBING CONNECTIONS
DOUBLE-FLARED TUBING CONNECTIONS MAY BE USED FOR PRESSURE CONTROLS, VALVE PILOT LINES AND OIL.

EXCEPTION: SINGLE-FLARED TUBING CONNECTIONS MAY BE USED WITH A MULTIRING SEAL COATED WITH INDUSTRIAL SEALANT SUITABLE FOR USE WITH REFRIGERANTS AND TIGHTENED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

5.508.2.1.4 ELBOWS
SHORT RADIUS ELBOWS ARE ONLY PERMITTED WHERE SPACE LIMITATIONS PROHIBIT USE OF LONG RADIUS ELBOWS.

5.508.2.2 VALVES
VALVES AND FITTINGS SHALL COMPLY WITH THE *CALIFORNIA MECHANICAL CODE* AND AS FOLLOWS.

5.508.2.2.1 PRESSURE RELIEF VALVES
FOR VESSELS CONTAINING HIGH-GWP REFRIGERANT, A RUPTURE DISC SHALL BE INSTALLED BETWEEN THE OUTLET OF THE VESSEL AND THE INLET OF THE PRESSURE RELIEF VALVE.

5.508.2.2.1.1 PRESSURE DETECTION
A PRESSURE GAUGE, PRESSURE TRANSDUCER OR OTHER DEVICE SHALL BE INSTALLED IN THE SPACE BETWEEN THE RUPTURE DISC AND THE RELIEF VALVE INLET TO INDICATE A DISC RUPTURE OR DISCHARGE OF THE RELIEF VALVE.

5.508.2.2.2 ACCESS VALVES
ONLY SCHRADER ACCESS VALVES WITH A BRASS OR STEEL BODY ARE PERMITTED FOR USE.

5.508.2.2.2.1 VALVE CAPS
FOR SYSTEMS WITH A REFRIGERANT CHARGE OF 5 POUNDS OR MORE, VALVE CAPS SHALL BE BRASS OR STEEL AND NOT PLASTIC.

5.508.2.2.2.2 SEAL CAPS
IF DESIGNED FOR IT, THE CAP SHALL HAVE A NEOPRENE O-RING IN PLACE.

5.508.2.2.2.2.1 CHAIN TETHERS
CHAIN TETHERS TO FIT OVER THE STEM ARE REQUIRED FOR VALVES DESIGNED TO HAVE SEAL CAPS.

EXCEPTION: VALVES WITH SEAL CAPS THAT ARE NOT REMOVED FROM THE VALVE DURING STEM OPERATION.

5.508.2.3 REFRIGERATED SERVICE CASES
REFRIGERATED SERVICE CASES HOLDING FOOD PRODUCTS CONTAINING VINEGAR AND SALT SHALL HAVE EVAPORATOR COILS OF CORROSION-RESISTANT MATERIAL, SUCH AS STAINLESS STEEL; OR BE COATED TO PREVENT CORROSION FROM THESE SUBSTANCES.

5.508.2.3.1 COIL COATING
CONSIDERATION SHALL BE GIVEN TO THE HEAT TRANSFER EFFICIENCY OF COIL COATING TO MAXIMIZE ENERGY EFFICIENCY.

5.508.2.4 REFRIGERANT RECEIVERS
REFRIGERANT RECEIVERS WITH CAPACITIES GREATER THAN 200 POUNDS SHALL BE FITTED WITH A DEVICE THAT INDICATES THE LEVEL OF REFRIGERANT IN THE RECEIVER.

5.508.2.5 PRESSURE TESTING
THE SYSTEM SHALL BE PRESSURE TESTED DURING INSTALLATION PRIOR TO EVACUATION AND CHARGING.

5.508.2.5.1 MINIMUM PRESSURE
THE SYSTEM SHALL BE CHARGED WITH REGULATED DRY NITROGEN AND APPROPRIATE TRACER GAS TO BRING SYSTEM PRESSURE UP TO 300 PSIG MINIMUM.

5.508.2.5.2 LEAKS
CHECK THE SYSTEM FOR LEAKS, REPAIR ANY LEAKS, AND RETEST FOR PRESSURE USING THE SAME GAUGE.

5.508.2.5.3 ALLOWABLE PRESSURE CHANGE
THE SYSTEM SHALL STAND, UNALTERED, FOR 24 HOURS WITH NO MORE THAN A +/- ONE POUND PRESSURE CHANGE FROM 300 PSIG, MEASURED WITH THE SAME GAUGE.

5.508.2.6 EVACUATION
THE SYSTEM SHALL BE EVACUATED AFTER PRESSURE TESTING AND PRIOR TO CHARGING.

5.508.2.6.1 FIRST VACUUM
PULL A SYSTEM VACUUM DOWN TO AT LEAST 1000 MICRONS (+/- 50 MICRONS), AND HOLD FOR 30 MINUTES.

5.508.2.6.2 SECOND VACUUM
PULL A SECOND SYSTEM VACUUM TO A MINIMUM OF 500 MICRONS AND HOLD FOR 30 MINUTES.

5.508.2.6.3 THIRD VACUUM
PULL A THIRD VACUUM DOWN TO A MINIMUM OF 300 MICRONS, AND HOLD FOR 24 HOURS WITH A MAXIMUM DRIFT OF 100 MICRONS OVER A 24-HOUR PERIOD.

CHAPTER 7 - INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

702 QUALIFICATIONS

702.1 INSTALLER TRAINING
HVAC SYSTEM INSTALLERS SHALL BE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS INCLUDING DUCTS AND EQUIPMENT BY A NATIONALLY OR REGIONALLY RECOGNIZED TRAINING OR CERTIFICATION PROGRAM. UNCERTIFIED PERSONS MAY PERFORM HVAC INSTALLATIONS WHEN UNDER THE DIRECT SUPERVISION AND RESPONSIBILITY OF A PERSON TRAINED AND CERTIFIED TO INSTALL HVAC SYSTEMS OR CONTRACTOR LICENSED TO INSTALL HVAC SYSTEMS. EXAMPLES OF ACCEPTABLE HVAC TRAINING AND CERTIFICATION PROGRAMS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

1. STATE CERTIFIED APPRENTICESHIP PROGRAMS.
2. PUBLIC UTILITY TRAINING PROGRAMS.
3. TRAINING PROGRAMS SPONSORED BY TRADE, LABOR OR STATEWIDE ENERGY CONSULTING OR VERIFICATION ORGANIZATIONS.
4. PROGRAMS SPONSORED BY MANUFACTURING ORGANIZATIONS.
5. OTHER PROGRAMS ACCEPTABLE TO THE ENFORCING AGENCY.

702.2 SPECIAL INSPECTION [HCD]
WHEN REQUIRED BY THE ENFORCING AGENCY, THE OWNER OR THE RESPONSIBLE ENTITY ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTION OR OTHER DUTIES NECESSARY TO SUBSTANTIATE COMPLIANCE WITH THIS CODE. SPECIAL INSPECTORS SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE ENFORCING AGENCY FOR THE PARTICULAR TYPE OF INSPECTION OR TASK TO BE PERFORMED. IN ADDITION TO OTHER CERTIFICATIONS OR QUALIFICATIONS ACCEPTABLE TO THE ENFORCING AGENCY, THE FOLLOWING CERTIFICATIONS OR EDUCATION MAY BE CONSIDERED BY THE ENFORCING AGENCY WHEN EVALUATING THE QUALIFICATIONS OF A SPECIAL INSPECTOR:

1. CERTIFICATION BY A NATIONAL OR REGIONAL GREEN BUILDING PROGRAM OR STANDARD PUBLISHER.
2. CERTIFICATION BY A STATEWIDE ENERGY CONSULTING OR VERIFICATION ORGANIZATION, SUCH AS HERS RATERS, BUILDING PERFORMANCE CONTRACTORS, AND HOME ENERGY AUDITORS.
3. SUCCESSFUL COMPLETION OF A THIRD PARTY APPRENTICE TRAINING PROGRAM IN THE APPROPRIATE TRADE.
4. OTHER PROGRAMS ACCEPTABLE TO THE ENFORCING AGENCY.

NOTES:
1. SPECIAL INSPECTORS SHALL BE INDEPENDENT ENTITIES WITH NO FINANCIAL INTEREST IN THE MATERIALS OR THE PROJECT THEY ARE INSPECTING FOR COMPLIANCE WITH THIS CODE.
2. HERS RATERS ARE SPECIAL INSPECTORS CERTIFIED BY THE CALIFORNIA ENERGY COMMISSION (CEC) TO RATE HOMES IN CALIFORNIA ACCORDING TO THE HOME ENERGY RATING SYSTEM (HERS).

[BSC-CG] WHEN REQUIRED BY THE ENFORCING AGENCY, THE OWNER OR THE RESPONSIBLE ENTITY ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTION OR OTHER DUTIES NECESSARY TO SUBSTANTIATE COMPLIANCE WITH THIS CODE. SPECIAL INSPECTORS SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE ENFORCING AGENCY FOR THE PARTICULAR TYPE OF INSPECTION OR TASK TO BE PERFORMED. IN ADDITION, THE SPECIAL INSPECTOR SHALL HAVE A CERTIFICATION FROM A RECOGNIZED STATE, NATIONAL OR INTERNATIONAL ASSOCIATION, AS DETERMINED BY THE LOCAL AGENCY. THE AREA OF CERTIFICATION SHALL BE CLOSELY RELATED TO THE PRIMARY JOB FUNCTION, AS DETERMINED BY THE LOCAL AGENCY.

NOTE:
SPECIAL INSPECTORS SHALL BE INDEPENDENT ENTITIES WITH NO FINANCIAL INTEREST IN THE MATERIALS OR THE PROJECT THEY ARE INSPECTING FOR COMPLIANCE WITH THIS CODE.

703 VERIFICATIONS

703.1 DOCUMENTATION.
DOCUMENTATION USED TO SHOW COMPLIANCE WITH THIS CODE SHALL INCLUDE BUT IS NOT LIMITED TO, CONSTRUCTION DOCUMENTS, PLANS, SPECIFICATIONS, BUILDER OR INSTALLER CERTIFICATION, INSPECTION REPORTS, OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY WHICH DEMONSTRATE SUBSTANTIAL CONFORMANCE. WHEN SPECIFIC DOCUMENTATION OR SPECIAL INSPECTION IS NECESSARY TO VERIFY COMPLIANCE, THAT METHOD OF COMPLIANCE WILL BE SPECIFIED IN THE APPROPRIATE SECTION OR IDENTIFIED APPLICABLE CHECKLIST.

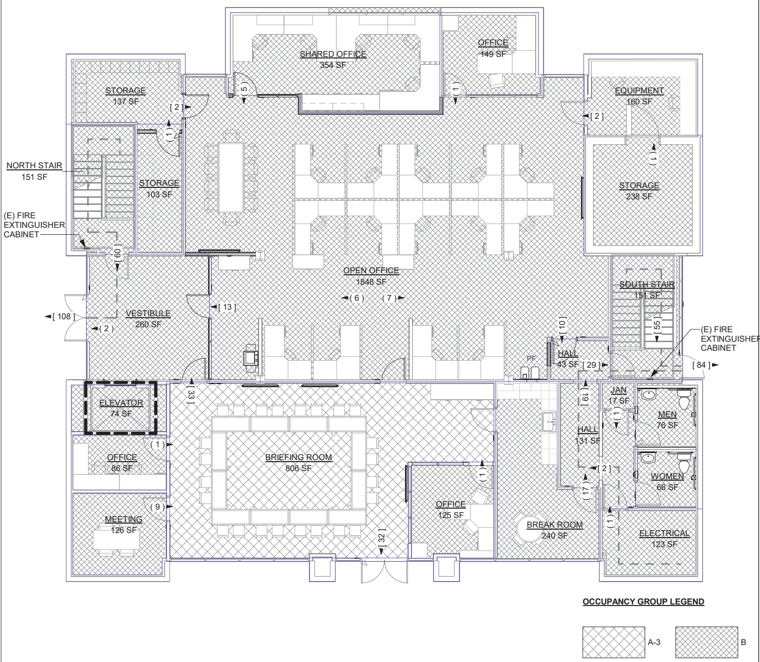
CITY OF SAN LUIS OBISPO

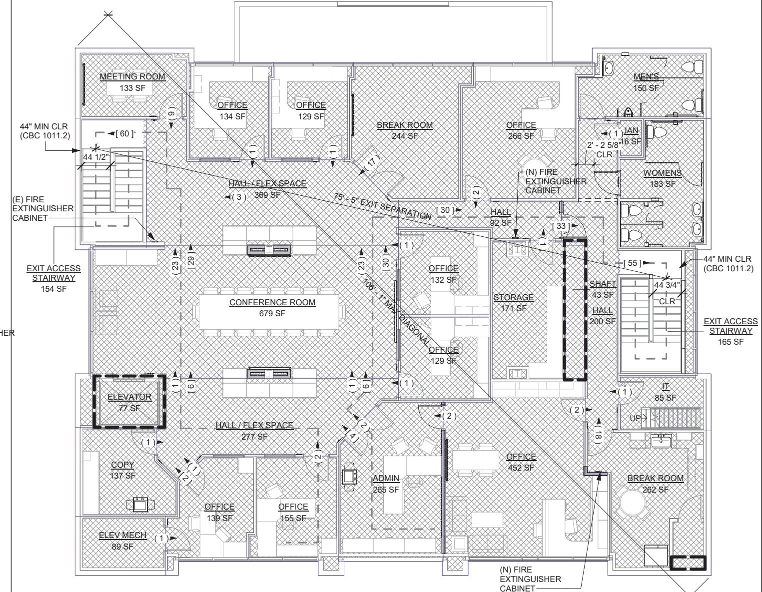
PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: CAL GREEN REQUIREMENTS

LICENSED ARCHITECT
JONATHAN HOUCK
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	G-205





COMMON PATH FIRST FLOOR	51' - 4"
NORTH STAIR - MAX TRAVEL	154' - 4"
SOUTH STAIR - MAX TRAVEL	146' - 5"

FIRST FLOOR OCCUPANCY CALCULATIONS

AREA NAME	AREA	NET / GROSS	TYPE (OCCUPANCY)	FUNCTION OF SPACE (2022 CBC TABLE 1004.5)	LOAD FACTOR	OCC LOAD	PLUMBING FIXTURE CALC LOAD FACTOR	PLUMBING FIXTURE CALC OCC LOAD	MAX. OCC. LOAD FOR ONE EXIT (2022 CBC TABLE 1006.2.1)	EXITS REQ'D
ELEVATOR	74 SF		B	(none)					49	1
HALL	131 SF		B	(none)					49	1
HALL	43 SF		B	(none)					49	
MEN	76 SF		B	(none)					49	1
NORTH STAIR	151 SF		B	(none)					49	1
SOUTH STAIR	151 SF		B	(none)					49	1
WOMEN	66 SF		B	(none)					49	1
(none): 7						0		0		
ELECTRICAL	123 SF	GROSS	B	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300	1	300	1	49	1
EQUIPMENT	160 SF	GROSS	B	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300	1	300	1	49	1
JAN	17 SF	GROSS	B	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300	1	300	1	49	1
STORAGE	137 SF	GROSS	B	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300	1	300	1	49	1
STORAGE	238 SF	GROSS	B	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300	1	300	1	49	1
STORAGE	103 SF	GROSS	B	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300	1	300	1	49	1
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM: 6						6		6		
BREAK ROOM	240 SF	NET	B	ASSEMBLY WITHOUT FIXED SEATS: UNCONCENTRATED (TABLE AND CHAIRS)	15	17	30	9	49	1
BRIEFING ROOM	806 SF	NET	A-3	ASSEMBLY WITHOUT FIXED SEATS: UNCONCENTRATED (TABLE AND CHAIRS)	15	54	30	27	49	2
MEETING	126 SF	NET	B	ASSEMBLY WITHOUT FIXED SEATS: UNCONCENTRATED (TABLE AND CHAIRS)	15	9	30	5	49	1
ASSEMBLY WITHOUT FIXED SEATS: UNCONCENTRATED (TABLE AND CHAIRS): 3						80		41		
OFFICE	86 SF	GROSS	B	BUSINESS AREAS	150	1	150	1	49	1
OFFICE	149 SF	GROSS	B	BUSINESS AREAS	150	1	150	1	49	1
OFFICE	125 SF	GROSS	B	BUSINESS AREAS	150	1	150	1	49	1
OPEN OFFICE	1848 SF	GROSS	B	BUSINESS AREAS	150	13	150	13	49	1
VESTIBULE	260 SF	GROSS	B	BUSINESS AREAS	150	2	150	2	49	1
BUSINESS AREAS: 5						18		18		
SHARED OFFICE	354 SF	SEE SECTION 1004.8	B	CONCENTRATED BUSINESS USE AREAS		5		5	49	1
CONCENTRATED BUSINESS USE AREAS: 1						5		5		
						109		70		

SECOND FLOOR OCCUPANCY CALCULATIONS

AREA NAME	AREA	NET / GROSS	TYPE (OCCUPANCY)	FUNCTION OF SPACE (2022 CBC TABLE 1004.5)	LOAD FACTOR	OCC LOAD	PLUMB FIXT CALC LOAD FACTOR	PLUMB FIXT CALC OCC LOAD	MAX. OCC. LOAD FOR ONE EXIT (2022 CBC TABLE 1006.2.1)	EXITS REQ'D
ELEVATOR	77 SF		B	(none)					49	1
EXIT ACCESS STAIRWAY	165 SF		B	(none)					49	1
EXIT ACCESS STAIRWAY	154 SF		B	(none)					49	1
HALL	200 SF		B	(none)					49	
HALL	92 SF		B	(none)					49	1
MEN'S	150 SF		B	(none)					49	1
SHAFT	43 SF		B	(none)					49	1
WOMENS	183 SF		B	(none)					49	1
(none): 8						0		0		
ELEV MECH	89 SF	GROSS	B	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300	1	300	1	49	1
IT	85 SF	GROSS	B	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300	1	300	1	49	1
JAN	16 SF	GROSS	B	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300	1	300	1	49	1
STORAGE	171 SF	GROSS	B	ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300	1	300	1	49	1
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM: 4						4		4		
BREAK ROOM	244 SF	NET	B	ASSEMBLY WITHOUT FIXED SEATS: UNCONCENTRATED (TABLE AND CHAIRS)	15	17	30	9	49	1
BREAK ROOM	262 SF	NET	B	ASSEMBLY WITHOUT FIXED SEATS: UNCONCENTRATED (TABLE AND CHAIRS)	15	18	30	9	49	1
CONFERENCE ROOM	679 SF	NET	B	ASSEMBLY WITHOUT FIXED SEATS: UNCONCENTRATED (TABLE AND CHAIRS)	15	46	30	23	49	1
MEETING ROOM	133 SF	NET	B	ASSEMBLY WITHOUT FIXED SEATS: UNCONCENTRATED (TABLE AND CHAIRS)	15	9	30	5	49	1
ASSEMBLY WITHOUT FIXED SEATS: UNCONCENTRATED (TABLE AND CHAIRS): 4						90		46		
ADMIN	265 SF	GROSS	B	BUSINESS AREAS	150	2	150	2	49	1
COPY	137 SF	GROSS	B	BUSINESS AREAS	150	1	150	1	49	1
HALL / FLEX SPACE	369 SF	GROSS	B	BUSINESS AREAS	150	3	150	3	49	1
HALL / FLEX SPACE	277 SF	GROSS	B	BUSINESS AREAS	150	2	150	2	49	1
OFFICE	134 SF	GROSS	B	BUSINESS AREAS	150	1	150	1	49	1
OFFICE	129 SF	GROSS	B	BUSINESS AREAS	150	1	150	1	49	1
OFFICE	266 SF	GROSS	B	BUSINESS AREAS	150	2	150	2	49	1
OFFICE	452 SF	GROSS	B	BUSINESS AREAS	150	4	150	4	49	1
OFFICE	155 SF	GROSS	B	BUSINESS AREAS	150	2	150	2	49	1
OFFICE	139 SF	GROSS	B	BUSINESS AREAS	150	1	150	1	49	1
OFFICE	129 SF	GROSS	B	BUSINESS AREAS	150	1	150	1	49	1
OFFICE	132 SF	GROSS	B	BUSINESS AREAS	150	1	150	1	49	1
BUSINESS AREAS: 12						21		21		
						115		71		

CODE ANALYSIS (CBC 2022)

CA EXISTING BUILDING CODE - 503.1
ALTERATIONS TO ANY BUILDING OR STRUCTURE SHALL COMPLY WITH REQUIREMENTS OF CBC AS APPLICABLE, FOR NEW CONSTRUCTION. ALTERATIONS SHALL BE SUCH THAT THE EXISTING BUILDING OR STRUCTURE IS NOT LESS COMPLYING WITH WITH THE PROVISIONS OF THE CBC THAN THE EXISTING BUILDING OR STRUCTURE WAS PRIOR TO THE ALTERATION

USE AND OCCUPANCY CLASSIFICATION (CHAPTER 3)
EXISTING: BUSINESS GROUP B OCCUPANCY
PROPOSED: BUSINESS GROUP B OCCUPANCY
ASSEMBLY GROUP A-3 OCCUPANCY (BRIEFING ROOM ONLY)

GENERAL BUILDING HEIGHTS AND AREAS (CHAPTER 5)
CONSTRUCTION TYPE: VB (NO CHANGE)

EXISTING BUILDING HEIGHT: 35' (NO CHANGE)
ALLOWED BUILDING HEIGHT: 60' (A GOVERNS, WITHOUT AREA INCREASE)

EXISTING NUMBER OF STORIES: 2 (NO CHANGE)
ALLOWED NUMBER OF STORIES 2 (A GOVERNS, WITHOUT AREA INCREASE)

ALLOWABLE AREA OF EACH STORY (MIXED OCCUPANCY 506.2.2)
1ST FLOOR: 5,586 SF EXISTING/PROPOSED (NO CHANGE, B & A-3 OCCUPANCY)
6,000 SF ALLOWABLE (SM, A-3 GOVERNS WITH HEIGHT INCREASE)

2ND FLOOR: 5,335 SF EXISTING/PROPOSED (NO CHANGE, B OCCUPANCY)
6,000 SF ALLOWABLE (SM, A-3 GOVERNS WITH HEIGHT INCREASE)

TYPES OF CONSTRUCTION (CHAPTER 6)
NO FIRE RATINGS REQUIRED IN VB CONSTRUCTION PER TABLE 601

FIRE PROTECTION AND LIFE SAFETY SYSTEMS (CHAPTER 9)
FULLY SPRINKLERED

MEANS OF EGRESS (CHAPTER 10)
OCCUPANT LOAD OF AREA OF WORK (TABLE 1004.5)
SEE SCHEDULE BELOW

MEANS OF EGRESS SIZING
SEE PLAN

NUMBER OF EXITS
EXISTING: 2
REQUIRED: 2

EXIT CONFIGURATION (1007.1.1)
MAX DIAGONAL: SEE PLAN
REQ'D SEPARATION: 1/3 DIAGONAL, 1007.1.1 EXCEPTION 2
PROPOSED SEPARATION: SEE PLAN

EXIT ACCESS TRAVEL DISTANCE:
MAX TRAVEL DISTANCE: 250 FT (TABLE 1017.2, SPRINKLERED A GOVERNS)

COMMON PATH OF TRAVEL
MAXIMUM: 75 FT (TABLE 1006.2.1, SPRINKLERED A GOVERNS)

EXIT DISCHARGE
ACCESS TO PUBLIC WAY: SEE SITE PLAN
AREAS OF ASSISTED RESCUE PROVIDED: SEE SITE PLAN

PLUMBING FIXTURE CALCULATIONS (CPC 422.1)
OCCUPANTS BY OCCUPANCY (PER CPC TABLE 4-1, SEE OCCUPANCY TABLE BLW)
B: 114 OCCUPANTS (57 MALE, 57 FEMALE)
A-3: 27 OCCUPANTS (13 MALE, 14 FEMALE)

WATER CLOSETS REQUIRED
B MALE (2:51-100): 1.14
A-3 MALE (1:1-100): 0.13
MALE TOTAL REQ'D: 1.27 = 2
MALE PROVIDED: 3
B FEMALE (4: 51-100): 3.14
A-3 FEMALE (1:1-25): 0.56
FEMALE TOTAL REQ'D: 3.7 = 4
FEMALE PROVIDED: 4

URINAL REQUIRED
B MALE (1:1-100): 0.57
A-3 MALE (1:1-100): 0.13
MALE TOTAL REQ'D: 0.70 = 1
MALE PROVIDED: 1

LAVATORIES REQUIRED
B MALE (1:1-75): 0.76
A-3 MALE (1:200): 0.07
MALE TOTAL REQ'D: 0.83 = 1
MALE PROVIDED: 2
B FEMALE (2:51-100): 1.14
A-3 FEMALE (1:100): 0.14
FEMALE TOTAL REQ'D: 1.28 = 2
FEMALE PROVIDED: 3

DRINKING FOUNTAINS REQUIRED
B (1:150): 0.76
A-3 (1:250): 0.11
TOTAL REQ'D: 0.87 = 1
TOTAL PROVIDED: 2

SERVICE SINK REQUIRED 1
SERVICE SINK PROVIDED 2

A.L.S. NOTES

FUNCTION OF SPACE	AREA	SF/OCCUPANT	OCCUPANT LOAD
BRIEFING ROOM	806 SF	@ 15 SF/OCC	54 OCC
CONFERENCE ROOM	679 SF	@ 15 SF/OCC	46 OCC
MEETING (1ST FLOOR)	126 SF	@ 15 SF/OCC	9 OCC
MEETING (2ND FLOOR)	133 SF	@ 15 SF/OCC	9 OCC

ASSITIVE LISTENING DEVICES
CBC SECTION 11B-219
1. PROVIDE PERSONAL RECEIVERS FOR 5 PEOPLE (4% OF TOTAL NUMBER OF SEATS) WITH HEARING IMPAIRMENTS
2. 2 SYSTEMS TO BE HEARING AID COMPATIBLE (25% OF SYSTEMS)
3. SYSTEMS TO BE PORTABLE
4. DEVICES TO BE PROVIDED BY OWNER. CONTRACTOR TO PROVIDE ALL SIGNAGE

LEGEND

EXISTING 1 HR SHAFT ENCLOSURE (ASSUMED, VIF)
EGRESS PATH, SEE TABLE FOR CALCULATED DISTANCES
(X) NUMBER OF OCCUPANTS EXITING SPACE
[X] COMBINED OCCUPANT COUNT ALONG P.O.T.

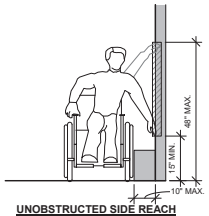
CITY OF SAN LUIS OBISPO

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

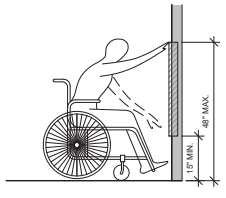
SHEET TITLE: CODE ANALYSIS

LICENSED ARCHITECT JONATHAN HOUCK 9/13/24 C 40884 10-31-25 RENEWAL DATE STATE OF CALIFORNIA

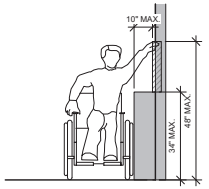
DESIGNED BY: JR
DRAWN BY: JR
CHECKED BY:
APPROVED BY: JH
SCALE: As indicated
DATE: 6/20/24
CITY SPECIFICATION NO. 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO. 1 G-401

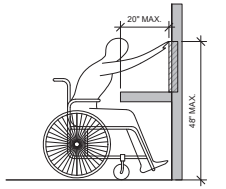


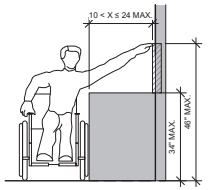
UNOBSTRUCTED SIDE REACH



UNOBSTRUCTED FORWARD REACH

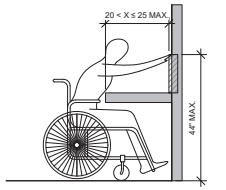






OBSTRUCTED HIGH SIDE REACH

REF: 2019 CBC 11B-308.3

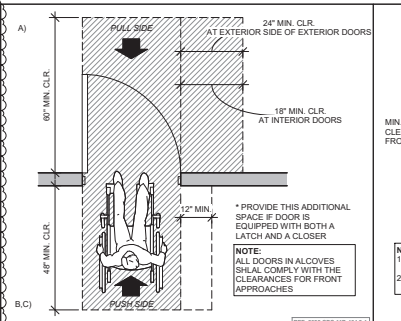


OBSTRUCTED HIGH FORWARD REACH

REF: 2019 CBC 11B-308.2

42 ACC. SIDE REACH
SCALE: 1/2" = 1'-0"

44 ACC. FORWARD REACH
SCALE: 1/2" = 1'-0"

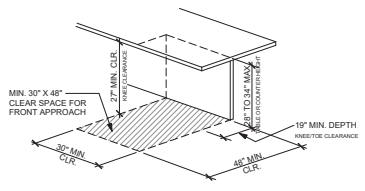


* PROVIDE THIS ADDITIONAL SPACE IF DOOR IS EQUIPPED WITH BOTH A LATCH AND A CLOSER

NOTE:
ALL DOORS IN ALCOVES SHLAL COMPLY WITH THE CLEARANCES FOR FRONT APPROACHES

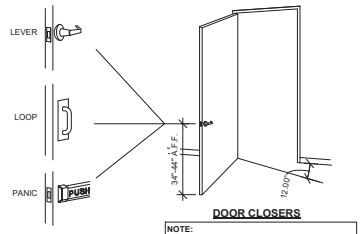
REF: 2022 CBC 11B-404.2.4

31 FRONT APPROACH CLEARANCES
SCALE: 1/2" = 1'-0"



NOTE:
1. THE REQUIRED CLEAR FLOOR SPACE MAY NOT OVERLAP THE REQUIRED KNEE SPACE BY MORE THAN 19".
2. KNEE CLEARANCES AT TABLES, COUNTERS & WORKSURFACES IS AT LEAST 27" HIGH, 30" WIDE AND 19" DEEP.

21 COUNTERTOP CLEARANCES
SCALE: 3" = 1'-0"



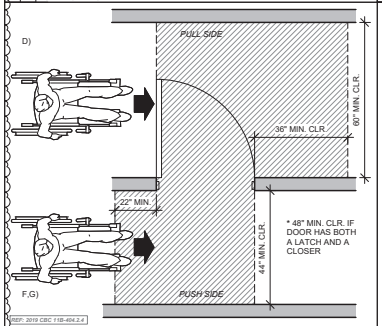
ACCEPTABLE DOOR HARDWARE AND MOUNTING HEIGHTS

DOOR CLOSERS

NOTE:
DOOR CLOSERS IF PRESENT, MUST BE SET SO THAT IT TAKES DOOR AT LEAST 5 SECONDS TO CLOSE FROM AN OPEN POSITION OF 90 DEGREES TO WITHIN 12" OF LATCH. THE FORCE TO OPEN DOOR SHALL NOT EXCEED 5 LBS. TYPICAL.

REF: 2022 CBC 11B-404.2

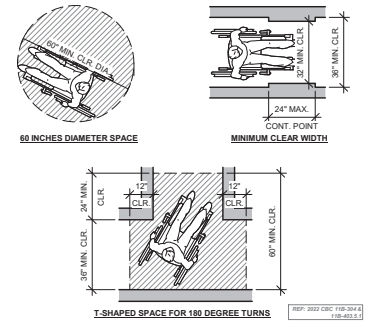
11 ACC. DOOR REQUIREMENTS
SCALE: 1" = 1'-0"



* 48" MIN. CLR. IF DOOR HAS BOTH A LATCH AND A CLOSER

REF: 2019 CBC 11B-404.2.4

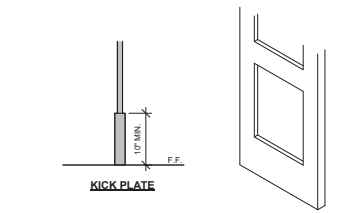
32 HINGE APPROACH CLEARANCES
SCALE: 1/2" = 1'-0"



T-SHAPED SPACE FOR 180 DEGREE TURNS

REF: 2022 CBC 11B-304.9, 11B-403.5.1

22 TURNING SPACE
SCALE: 3/8" = 1'-0"

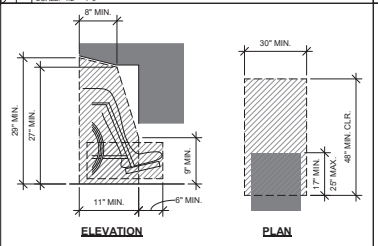


KICK PLATE

NOTE:
SWINGING DOOR & GATE SURFACES WITHIN 10" OF FINISH FLOOR SHALL HAVE A SMOOTH SURFACE OF THE PUSH SIDE EXTENDING THE FULL WIDTH OF DOOR OR GATE. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS SHALL BE WITHIN 1/16" OF SURFACE & SHALL BE FREE OF SHARP OR ABRASIVE EDGES. CAVITIES CREATED BY KICK PLATES SHALL BE CAPPED.

REF: 2022 CBC 11B-404.2.10

12 ACC. DOOR KICK PLATE
SCALE: 1" = 1'-0"

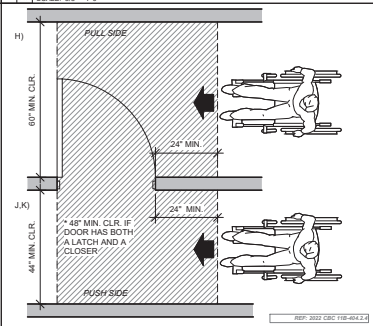


ELEVATION PLAN

NOTE:
1. THE REQUIRED CLEAR FLOOR SPACE MAY NOT OVERLAP THE REQUIRED KNEE SPACE BY MORE THAN 19".
2. KNEE CLEARANCES AT TABLES, COUNTERS & WORKSURFACES IS AT LEAST 27" HIGH, 30" WIDE AND 19" DEEP.

REF: 2022 CBC 11B-306

33 TOE & KNEE CLEARANCES
SCALE: 3" = 1'-0"



REF: 2022 CBC 11B-404.2.4

23 LATCH APPROACH CLEARANCES
SCALE: 1/2" = 1'-0"

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

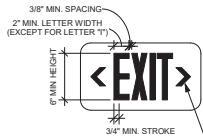
ACCESSIBILITY DETAILS

PROJECT TITLE:

SHEET TITLE:

LICENSED ARCHITECT
JEFFREY HOWE
9/13/24
C 40884
REGISTERED PROFESSIONAL
STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	G-902



CBC 1013.1 WHERE REQUIRED

Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. The path of egress travel to exits and within exits shall be marked by readily visible exit signs to clearly indicate the direction of egress travel in cases where the exit or the path of egress travel is not immediately visible to the occupants. Intervening means of egress doors within exits shall be marked by exit signs. Exit sign placement shall be such that any point in an exit access corridor or exit passageway is within 100 feet (30 480 mm) or the listed viewing distance of the sign, whichever is less, from the nearest visible exit sign.

EXCEPTIONS:

1. Exit signs are not required in rooms or areas that require only one exit or exit access.
2. Main exterior exit doors or gates that are obviously and clearly identifiable as exits need not have exit signs where approved by the building official.
3. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3 or R-3.1.
4. Exit signs are not required where inmates are housed, or held in dayrooms, sleeping rooms or dormitories in occupancies in Group I-3.
5. In occupancies in Groups A-4 and A-5, exit signs are not required on the seating side of vomitories or openings into seating areas where exit signs are provided in the concourse that are readily apparent from the vomitories. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.

CBC 1013.5 INTERNALLY ILLUMINATED SIGNS

Electrically powered, self-luminous and photoluminescent exit signs shall be listed and labeled in accordance with UL 924 and shall be installed in accordance with the manufacturer's instructions and Chapter 27. Exit signs shall be illuminated at all times.

CBC 1013.6 EXTERNALLY ILLUMINATED EXIT SIGNS

Externally illuminated exit signs shall comply with Sections 1013.6.1 through 1013.6.3.

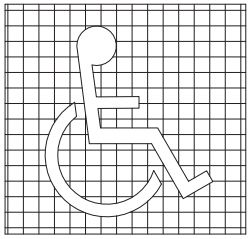
CBC 1013.6.1 GRAPHICS

Every exit sign and directional exit sign shall have plainly legible letters not less than 6 inches (152 mm) high with the principal strokes of the letters not less than 3/4 inch (19.1 mm) wide. The word "EXIT" shall have letters having a width not less than 2 inches (51 mm) wide, except the letter "I," and the minimum spacing between letters shall be not less than 3/8 inch (9.5 mm). Signs larger than the minimum established in this section shall have letter widths, strokes and spacing in proportion to their height.

The word "EXIT" shall be in high contrast with the background and shall be clearly discernible when the means of exit sign illumination is or is not energized. If a chevron directional indicator is provided as part of the exit sign, the construction shall be such that the direction of the chevron directional indicator cannot be readily changed.

14 ACC. ILLUMINATED EXIT SIGN

SCALE: 1" = 1'-0"



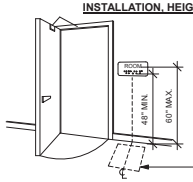
SYMBOL PROPORTIONS

FIGURE 11B-703.7.2.1 INTERNATIONAL SYMBOL

22 INTL SYMBOL OF ACC. REF 11B-703.7.2.1

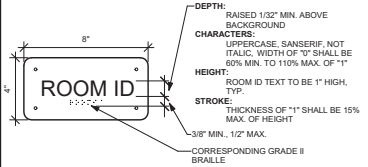
SCALE: 3" = 1'-0"

INSTALLATION, HEIGHT AND LOCATION



NOTE:
PERMANENT SIGNAGE TO BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. MOUNTING LOCATION MUST ALLOW A PERSON TO APPROACH WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING PATH OF THE DOOR.

RAISED CHARACTERS

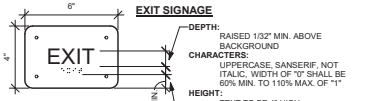


DEPTH: RAISED 1/32" MIN. ABOVE BACKGROUND
CHARACTERS: UPPERCASE, SANSERIF, NOT ITALIC, WIDTH OF "O" SHALL BE 60% MIN. TO 110% MAX. OF "I"
HEIGHT: ROOM ID TEXT TO BE 1" HIGH, TYP.
STROKE: THICKNESS OF "I" SHALL BE 15% MAX. OF HEIGHT

CHARACTER SPACING

RECTANGULAR *NON RECTANGULAR*

EXIT SIGNAGE



DEPTH: RAISED 1/32" MIN. ABOVE BACKGROUND
CHARACTERS: UPPERCASE, SANSERIF, NOT ITALIC, WIDTH OF "O" SHALL BE 60% MIN. TO 110% MAX. OF "I"
HEIGHT: TEXT TO BE 1" HIGH, TYP.
STROKE: THICKNESS OF "I" SHALL BE 15% MAX. OF HEIGHT

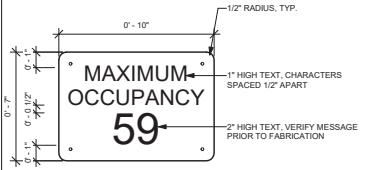
NOTE : REFER TO SHEET A-601 AND DOOR SCHEDULE FOR ROOM SIGN DESIGNATIONS AND LOCATION

REF: 2019 CBC 11B-703

12 ACC. ROOM SIGNAGE

SCALE: 3" = 1'-0"

ALL TEXT/GRAPHICS TO BE A PERMANENT PART OF THE SIGN



FOR ROOM SIGN REQUIREMENTS

PLAN FOR LOCATION

REF: CBC 1004.9

23 MAX. OCCUPANT LOAD

SCALE: 3" = 1'-0"

1106 WALNUT TENANT IMPROVEMENT

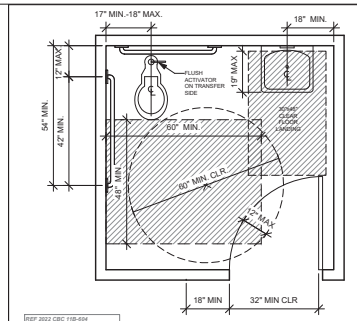
PROJECT TITLE:

ACCESSIBILITY DETAILS

SHEET TITLE:

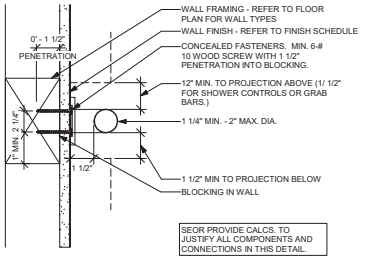
LICENSED ARCHITECT
JOHAN HONK
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	G-903



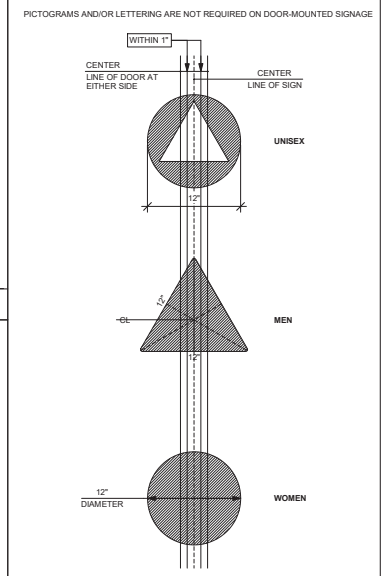
31 ACC. SINGLE ACCOMODATION TOILET

SCALE: 1/2" = 1'-0"



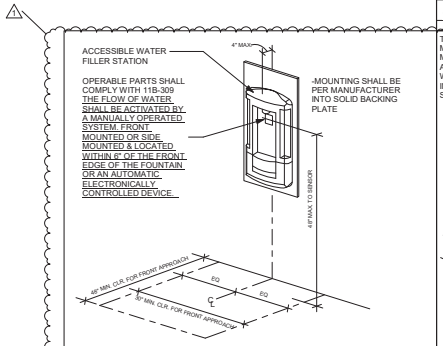
21 ACC. GRAB BAR ATTACHMENT

SCALE: 3" = 1'-0"



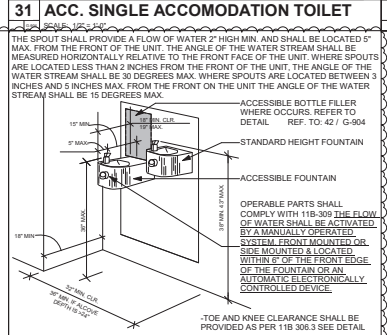
12 RESTROOM GEOMETRIC SYMBOLS

SCALE: 1 1/2" = 1'-0"



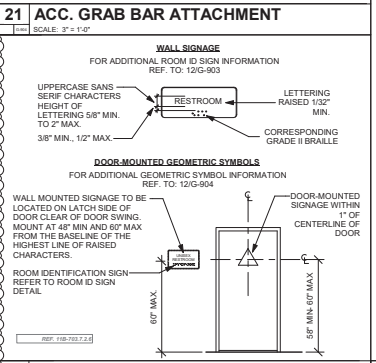
42 WATER BOTTLE FILLER STATION

SCALE: 3" = 1'-0"



32 HI-LO DRINKING FOUNTAIN

SCALE: 3" = 1'-0"

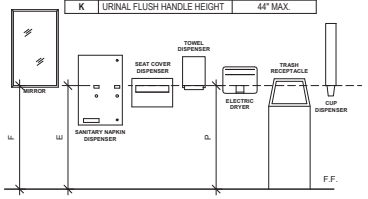


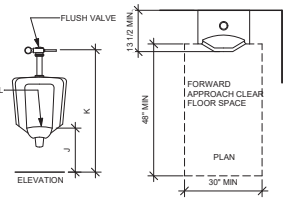
22 RESTROOM SIGNAGE

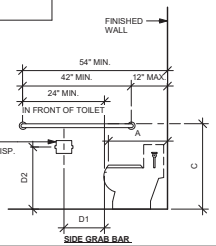
SCALE: 1" = 1'-0"

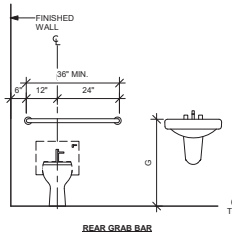
A	TOILET CL FROM WALL	17"-18"
B	TOILET SEAT HEIGHT	17"-19"
C	TOP OF GRAB BAR GRIPPING SURFACE	33"-36"
D1	FURTHEST TOILET PAPER IN FRONT OF TOILET	7"-9" AT CL
D2	DISPENSER HEIGHT	19"-24"
E	SANITARY NAPKIN DISPOSAL (HIGHEST OPERABLE PART A.F.F.)	19" MIN.
F	MIRROR - BOT. OF REFLECTIVE SURFACE A.F.F.	40" MAX. WHEN ABOVE SINK OR COUNTERTOP 35" MAX. NO LAV.
G	LAVATORY/SINK RIM HEIGHT	34" MAX.
H	LAVATORY KNEE CLEARANCE	17" MIN. AT 8" DEPTH 29" MIN. AT APRON
J	URINAL LIP HEIGHT	17" MAX.
K	URINAL FLUSH HANDLE HEIGHT	44" MAX.

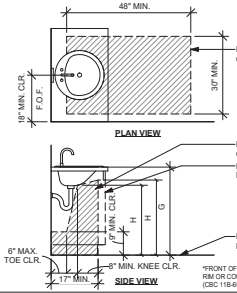
L	LOW DRINKING FOUNTAIN APPROACH	PER 11B-306
	SPOUT HEIGHT AND LOCATION FROM EDGE OF UNIT INCLUDING BUMPERS	36" MAX. A-F-F & 5" MAX. FROM FRONT EDGE OF UNIT
	DRINKING FOUNTAIN OPERABLE PARTS FROM FRONT EDGE OF THE UNIT	6" MAX.
M	DRINKING FOUNTAIN KNEE CLEARANCE	27" MIN. CLR.
P	DISPENSERS/OPERABLE PARTS	40" MAX.
Q	REACH RANGE - FRONT & SIDE APPROACH	48" MAX.
R	BOTTOM OF OPENING/OUTLET	19" MIN.
S	TOE CLEARANCE AT TOILET PARTITION	9" MIN.
T	TOILET FLUSH CONTROL HEIGHT	

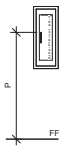


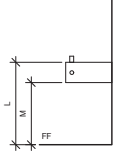












NOTES:

1. HOT WATER AND DRAIN PIPES UNDER ACCESSIBLE LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
2. THE DIP OF THE OVERFLOW SHALL NOT BE CONSIDERED IN DETERMINING KNEE & TOE CLEARANCES.
3. SINK SHALL BE 6-1/2" DEEP MAX.
4. OPERABLE PARTS OF SOAP OR OTHER DISPENSERS LOCATED ON THE BACK WALL OF THE LAVATORY ARE WITHIN REACH RANGE 40FI MAXIMUM AFF AND 17fi-19fi MAXIMUM DEEP DEPENDENT UPON TOE CLEARANCE BELOW PER CBC.
5. DISPENSERS MOUNTED ON THE GRAB BAR SIDE OF ACCESSIBLE TOILET SHALL NOT PROJECT MORE THAN 3-1/2" FROM FACE OF WALL, NOR BE LOCATED CLOSER THAN 1-1/2" CLEAR OF BOTTOM OF GRAB BAR.

FAUCET ACCESSIBILITY NOTES:
(CONTROLS FOR FAUCETS SHALL COMPLY WITH CBC 11B-309)

1. FAUCETS CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.
2. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GRATER THAN 5 POUND FORCE (22.2N). LEVER-OPERATED, PUSH-TYPE AND ELECTRONICALLY CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS. SELF-CLOSINGVALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS.

51 FIXTURE AND ACCESSORIES MOUNTING HEIGHTS AND CLEARANCES

SCALE: 1/2" = 1'-0"

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

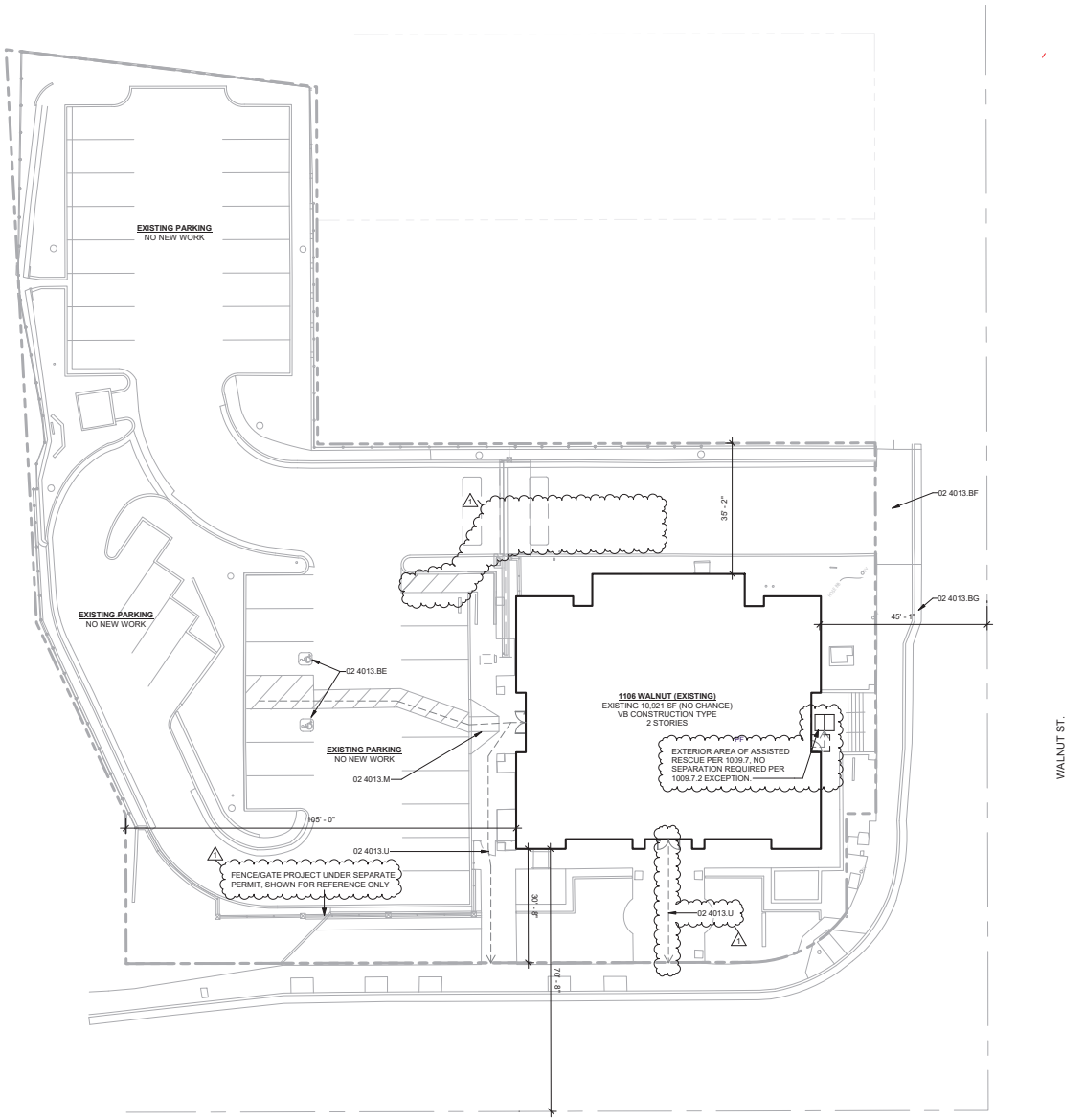
PROJECT TITLE:

ACCESSIBILITY DETAILS

SHEET TITLE:

LICENSED ARCHITECT — JORDAN RAE HOWE — 9/13/24 — C 40884 — 03-31-25 — RENEWAL DATE — STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	G-904



1 SITE PLAN

AS-101 SCALE: 1/16" = 1'-0"

SITE PLAN GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS
2. REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION.
3. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
4. ALL SIDEWALKS, CROSSWALKS, COMMON AREAS AND BUILDING ENTRANCES SHALL BE ACCESSIBLE AND IN COMPLIANCE WITH ***2022 CBC 11B***.
   A. FLOOR AND GROUND SURFACES SHALL BE STABLE, FIRM, AND SLIP RESISTANT.
   B. OPENINGS IN FLOOR OR GROUND SURFACES SHALL NOT ALLOW PASSAGE OF A SPHERE <1/2".
   C. VERTICAL CHANGES IN LEVEL SHALL NOT EXCEED 1/4".
   D. THE CLEAR WIDTH FOR SIDEWALKS AND WALKS SHALL BE 48" MIN.
5. ALL CURBING NOT WITHIN A PARKING SPACE SHALL BE PAINTED RED TO DESIGNATE THE FIRE LANES

KEYNOTES

02 4013.BE	EXISTING ACCESSIBLE PARKING TO REMAIN.
02 4013.BF	EXISTING DRIVE APPROACH TO REMAIN.
02 4013.BG	EXISTING CURB AND GUTTER.
02 4013.M	EXISTING CURB RAMP TO REMAIN.
02 4013.U	EXISTING ACCESSIBLE PATH OF TRAVEL TO REMAIN

REQUIRED PARKING

FUNCTION	AREA	MIN. REQUIRED PER....	TOTAL PARKING REQ'D	TOTAL PARKING PROVIDED
OFFICE	9,633	1 PER 300 S.F.	33	34

SITE PLAN LEGEND

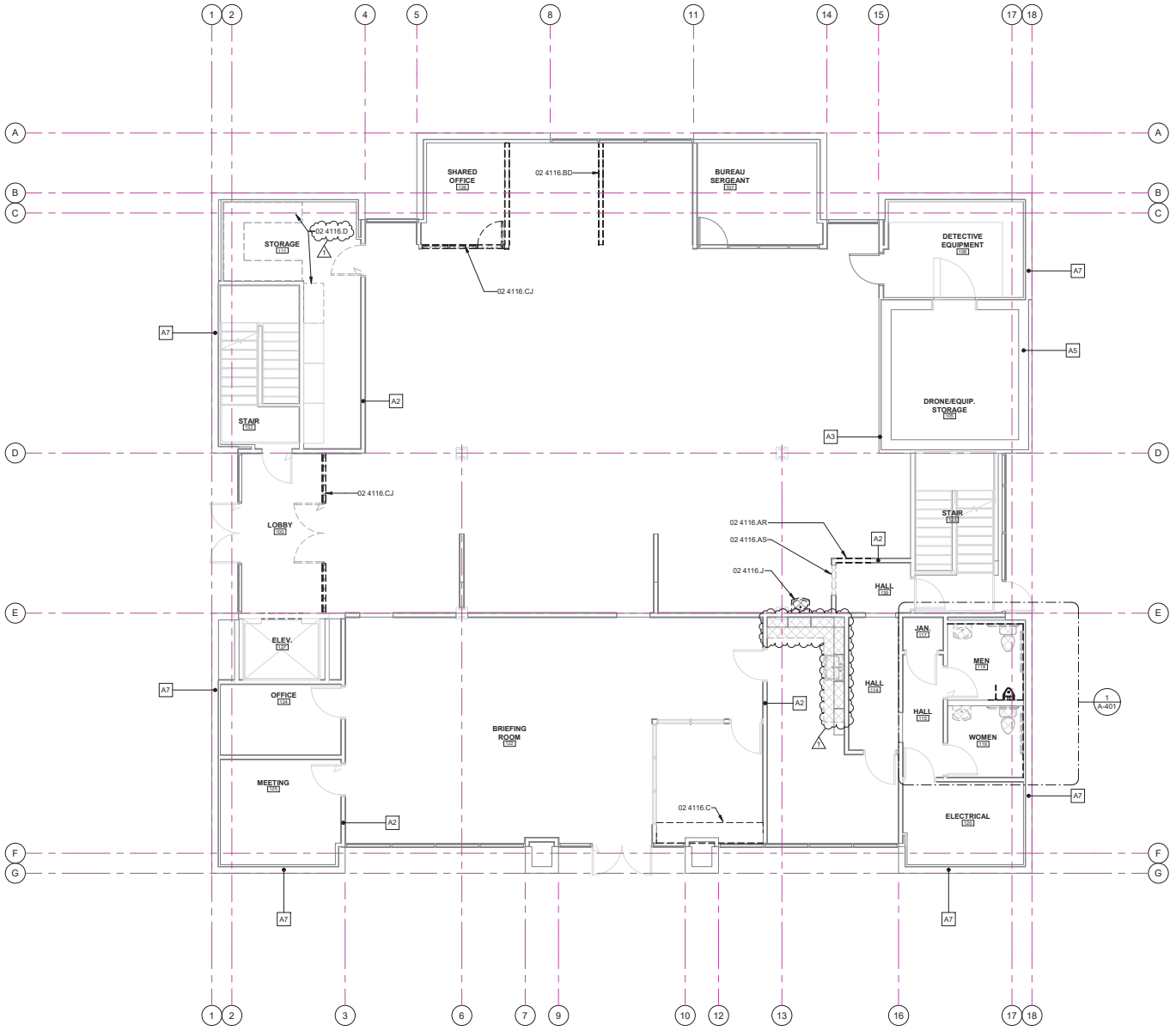
- PROPERTY LINE
- SETBACK
- EASTMENT
- ACCESSIBLE PATH OF TRAVEL (SHALL BE 48" MIN. CBC 11B-403.5)
- BUILDING FOOTPRINT
- EXISTING CONCRETE PAVING
- EXISTING PLANTING AREA
- STANDARD ACCESSIBLE STALL
- VAN — VAN ACCESSIBLE STALL
- EV — ELECTRICAL VEHICLE CHARGING STALL

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: ARCHITECTURAL SITE PLAN

LICENSED ARCHITECT
JONATHAN HOVEK
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY: JR
DRAWN BY: JR
CHECKED BY:
APPROVED BY: JH
SCALE: As indicated
DATE: 6/20/24
CITY SPECIFICATION NO. 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO. AS-101



1 DEMOLITION FIRST FLOOR PLAN

AD-101 SCALE: 3/16" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION IF PROVIDED.
3. REFER TO MECHANICAL PLANS, DRAWINGS OR REPORTS FOR FURTHER INFORMATION.
4. REFER TO PLUMBING PLANS OR DRAWINGS FOR FURTHER INFORMATION IF PROVIDED.
5. NOT USED
6. DIMENSIONS ARE TO FACE OF EXISTING FINISH UNLESS SPECIFICALLY NOTED OTHERWISE.
7. PROVIDE ADEQUATE BLOCKING IN WALLS FOR CABINETS AND OTHER WALL MOUNTED ACCESSORIES INCLUDING BUT NOT LIMITED TO HANDRAILS, SHELVING AND BATHROOM FIXTURES.
8. PROVIDE FIREBLOCKING FOR WALL CAVITIES THAT EXCEED **2022 CBC** HEIGHT LIMITATIONS
9. DOOR AND WINDOW DIMENSIONS ARE CENTERED AT OPENINGS
10. WHERE DOOR IS LOCATED WITHOUT DIMENSION AT THE CORNER OF A ROOM IT SHALL BE 4" FROM FACE OF FRAMING OF ADJACENT WALL TO ROUGH DOOR OPENING
11. SEE CODE ANALYSIS FOR LOCATIONS OF FIRE PARTITIONS AND FIRE BARRIERS
12. WHERE RECESSED FIXTURES OCCUR IN WALLS OR HORIZONTAL ASSEMBLIES, THE FIRE RATING OF THOSE ASSEMBLIES SHALL BE MAINTAINED
13. AT ALL PENETRATIONS AND INTERSECTIONS OF FIRE-RATED PARTITIONS, PROVIDE FIRE SEALANT AND/OR FIRE STOPPING TO MAINTAIN CONTINUITY OF PARTITION RATING

KEYNOTES

02 4116.AR	PORTION OF EXISTING WALL TO BE REMOVED FOR NEW DOOR OPENING.
02 4116.AS	PREPARE EXISTING OPENING FOR NEW STUD WALL INFILL.
02 4116.BD	EXISTING LIGHT GUAGE METAL STUD WALL TO BE REMOVED.
02 4116.C	EXISTING CASEWORK TO BE REMOVED
02 4116.CJ	EXISTING STOREFRONT TO BE REMOVED AND DISCARDED.
02 4116.D	EXISTING COUNTERTOP AND CASEWORK TO BE REMOVED
02 4116.J	EXISTING SINK TO BE REMOVED. PROTECT IN PLACE EXISTING PLUMBING FOR NEW DRINKING FOUNTAIN AND BOTTLE FILLER. REFER TO PLUMBING FOR ADDITIONAL INFORMATION.

FLOOR DEMOLITION LEGEND

NOTE: REFER TO INTERIOR FINISH SCHEDULES ON SHEETS A-501 & A-502 FOR ADDTIONAL INFORMATION.

- INTERIOR - CARPET - TO REMAIN
- DEMO - INTERIOR - CARPET
- DEMO - INTERIOR - LINOLEUM TILE
- DEMO - INTERIOR - TILE
- DEMO EXISTING PARTITION OR WALL FINISH
- DEMO - INTERIOR - LVT

WALL TYPES LEGEND

A1	NEW 3-5/8" STEEL STUD FRAMED INTERIOR PARTITION W/ 5/8" GYP. BOARD EACH SIDE, ACOUSTIC BATT INSULATION, SEE A-902 FOR DETAILS
A2	EXISTING STUD FRAMED WALL, TO REMAIN
A3	EXISTING WALL FURRING, TO REMAIN
A4	EXISTING MASONRY BLOCK WALL, TO REMAIN
A5	EXISTING CONCRETE WALL, TO REMAIN
A6	EXISTING STOREFRONT WALL, TO REMAIN
A7	EXISTING MASONRY BLOCK WALL, TO REMAIN

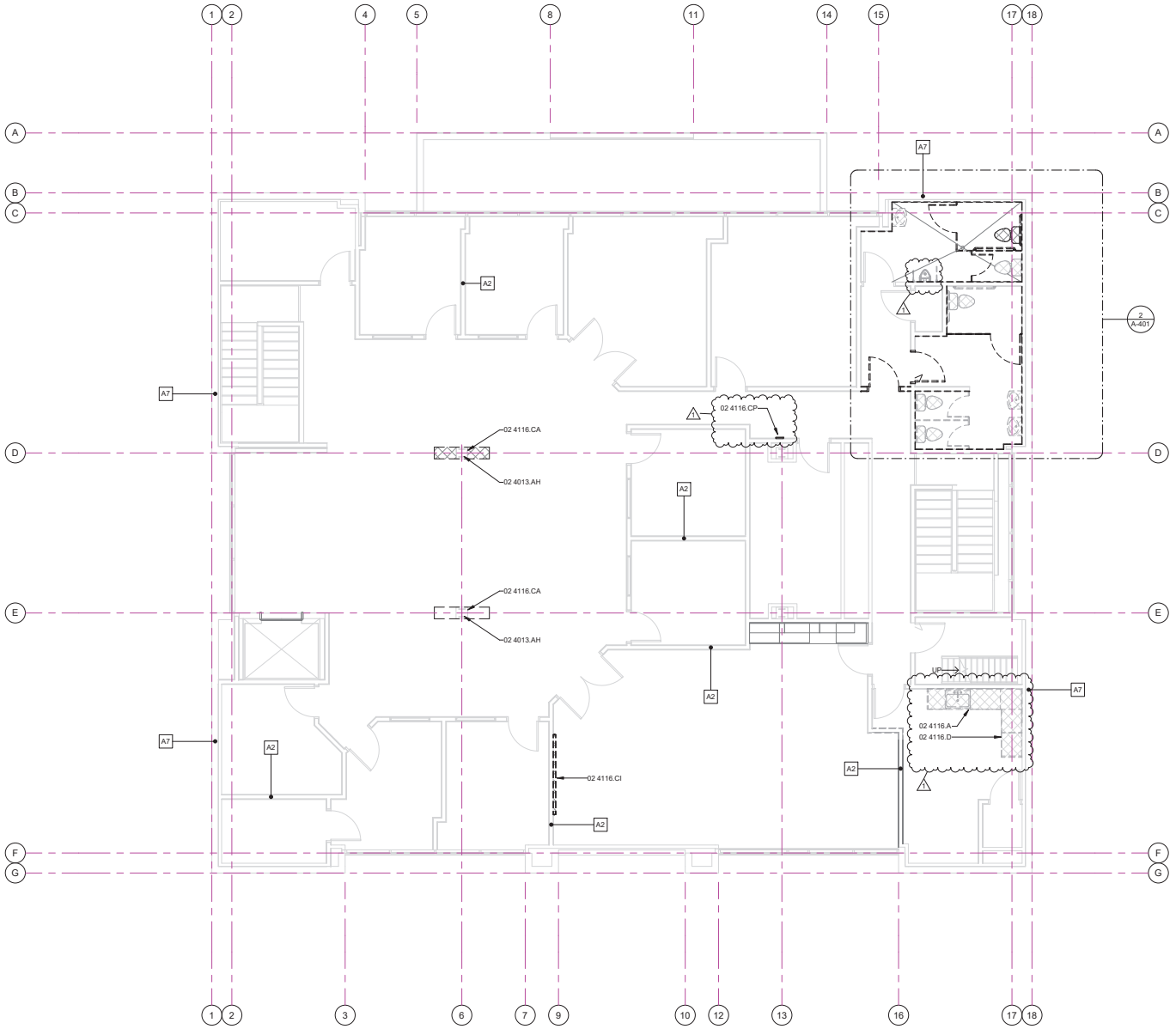
CITY OF SAN LUIS OBISPO

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: DEMOLITION FIRST FLOOR PLAN

LICENSED ARCHITECT JONATHAN HOUCK 9/13/24 C-40884 10-31-25 RENEWAL DATE STATE OF CALIFORNIA

DESIGNED BY: JR
DRAWN BY: JR
CHECKED BY:
APPROVED BY: JH
SCALE: As indicated
DATE: 6/20/24
CITY SPECIFICATION NO. 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO. AD-101



1 DEMOLITION SECOND FLOOR PLAN

AD-102 SCALE: 3/16" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION IF PROVIDED.
3. REFER TO MECHANICAL PLANS, DRAWINGS OR REPORTS FOR FURTHER INFORMATION.
4. REFER TO PLUMBING PLANS OR DRAWINGS FOR FURTHER INFORMATION IF PROVIDED.
5. NOT USED
6. DIMENSIONS ARE TO FACE OF EXISTING FINISH UNLESS SPECIFICALLY NOTED OTHERWISE.
7. PROVIDE ADEQUATE BLOCKING IN WALLS FOR CABINETS AND OTHER WALL MOUNTED ACCESSORIES INCLUDING BUT NOT LIMITED TO HANDRAILS, SHELVING AND BATHROOM FIXTURES.
8. PROVIDE FIREBLOCKING FOR WALL CAVITIES THAT EXCEED **2022 CBC** HEIGHT LIMITATIONS
9. DOOR AND WINDOW DIMENSIONS ARE CENTERED AT OPENINGS
10. WHERE DOOR IS LOCATED WITHOUT DIMENSION AT THE CORNER OF A ROOM IT SHALL BE 4" FROM FACE OF FRAMING OF ADJACENT WALL TO ROUGH DOOR OPENING
11. SEE CODE ANALYSIS FOR LOCATIONS OF FIRE PARTITIONS AND FIRE BARRIERS
12. WHERE RECESSED FIXTURES OCCUR IN WALLS OR HORIZONTAL ASSEMBLIES, THE FIRE RATING OF THOSE ASSEMBLIES SHALL BE MAINTAINED
13. AT ALL PENETRATIONS AND INTERSECTIONS OF FIRE-RATED PARTITIONS, PROVIDE FIRE SEALANT AND/OR FIRE STOPPING TO MAINTAIN CONTINUITY OF PARTITION RATING

KEYNOTES

02 4013.AH	EXISTING COLUMN TO REMAIN. PROTECT IN PLACE.
02 4116.A	EXISTING PLUMBING FIXTURE TO BE REMOVED
02 4116.CA	DEMO EXISTING GYP. BD. COLUMN WRAP TO PREPARE FOR NEW WALLS.
02 4116.CI	EXISTING MOTORIZED PROJECTOR SCREEN TO BE REMOVED, SET ASIDE, AND PROTECTED FOR INSTALLATION IN CONFERENCE ROOM. SEE PROPOSED PLANS.
02 4116.CP	REMOVE EXISTING FIRE EXTINGUISHER CABINET, PREPARE OPENING FOR NEW CABINET
02 4116.D	EXISTING COUNTERTOP AND CASEWORK TO BE REMOVED

FLOOR MATERIALS LEGEND

NOTE: REFER TO INTERIOR FINISH SCHEDULES ON SHEETS A-501 & A-502 FOR ADDTIONAL INFORMATION.

- INTERIOR - CARPET - TO REMAIN
- DEMO - INTERIOR - CARPET
- DEMO - INTERIOR - LINOLEUM TILE
- DEMO - INTERIOR - TILE
- DEMO EXISTING PARTITION OR WALL FINISH
- DEMO - INTERIOR - LVT

WALL TYPES LEGEND

A1	NEW 3-5/8" STEEL STUD FRAMED INTERIOR PARTITION W/ 5/8" GYP. BOARD EACH SIDE, ACOUSTIC BATT INSULATION, SEE A-902 FOR DETAILS
A2	EXISTING STUD FRAMED WALL, TO REMAIN
A3	EXISTING WALL FURRING, TO REMAIN
A4	EXISTING MASONRY BLOCK WALL, TO REMAIN
A5	EXISTING CONCRETE WALL, TO REMAIN
A6	EXISTING STOREFRONT WALL, TO REMAIN
A7	EXISTING MASONRY BLOCK WALL, TO REMAIN

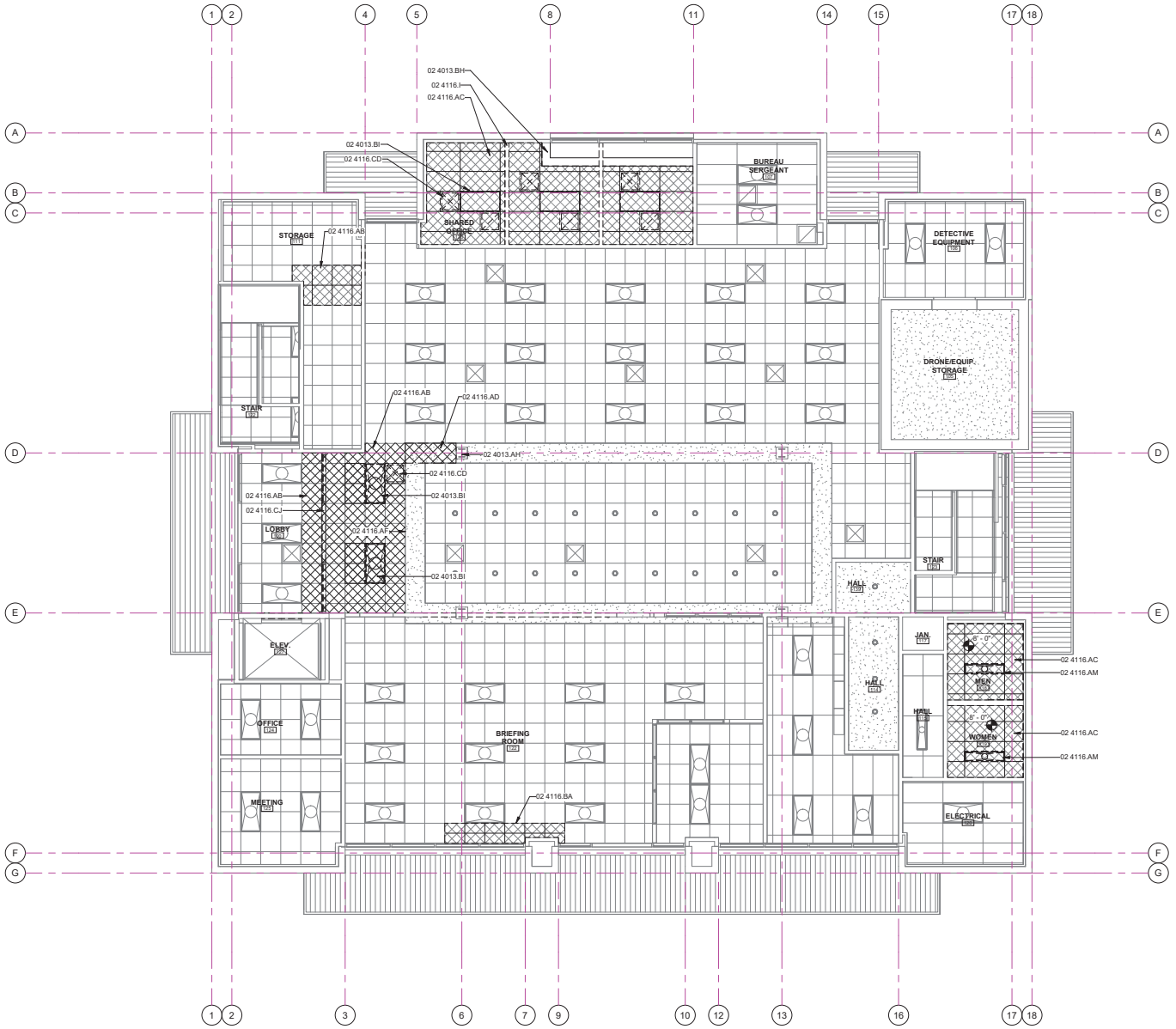
CITY OF SAN LUIS OBISPO

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: DEMOLITION SECOND FLOOR PLAN

LICENSED ARCHITECT
JONATHAN HOUCK
9/13/24
C 40884
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	AD-102



1 DEMOLITION REFLECTED CEILING PLAN - FIRST FLOOR

AD-111 SCALE: 3/16" = 1'-0"

RCP GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-100 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
3. REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION.
4. REFER TO DETAILS FOR FLOOR/CEILING ASSEMBLIES.
5. HEIGHT OF CEILINGS SHALL BE MEASURED FROM TOP OF SLAB TO FINISH FACE OF GWB OR FACE OF CEILING GRID AS INDICATED ON THE REFLECTED CEILING PLAN, UNO.
6. BORDERS AT LAY-IN ACOUSTICAL CEILING PANELS SHALL BE CUT TO MATCH FACTORY EDGE PROFILE. NO EXPOSED FASTENERS SHALL BE PERMITTED INCLUDING POP RIVETS AND TAPPETS.
7. CONTRACTOR TO VERIFY DEPTH OF SOFFITS AND HOLD TIGHT TO PLUMBING, SPRINKLERS, ELECTRICAL AND MECHANICAL DUCTS
8. SEE MECHANICAL DRAWINGS FOR MECH. ACCESS PANELS. PAINT TO MATCH CEILING
9. AT DROPPED GWB SOFFITS/GWB BEAMS, PROVIDE C-STUDS AS VERTICAL SUPPORTS AT EACH SIDE OF THE SOFFIT/BEAM AND DIAGONAL BRACING FOR WRACKING. IF CEILING JOIST SPACING DIFFERS FROM FLOOR THEN BLOCKING BETWEEN THE FLOOR FRAMING MAY BE UTILIZED TO ATTACH THE VERTICAL STRUTS
10. ALL LIGHT FIXTURES ARE TO BE INSTALLED ACCORDING TO THE ARCHITECTURAL REFLECTED CEILING PLAN. ARCHITECT TO REVIEW CEILING LAYOUT INCLUDING BULKHEADS AND GRID PRIOR TO INSTALLATION.
11. PROVIDE NEW ROLLER SHADES AT ALL EXTERIOR WINDOWS EXCLUDING ENTRANCE VESTIBULE AND SOUTH STAIR. SINGLE ROLLER W/ FASCIA. REFER TO SPECS FOR SHADE CLOTH

KEYNOTES

02 4013.AH	EXISTING COLUMN TO REMAIN. PROTECT IN PLACE.
02 4013.BH	EXISTING SOFFIT DROP TO REMAIN.
02 4013.BI	EXISTING LIGHT FIXTURE TO BE RELOCATED. REFER TO ELECTRICAL.
02 4116.AB	PARTIALLY REMOVE GRID AND TILE AS NEEDED FOR NEW WALL INSTALLATION, SET ASIDE GRID AND TILE FOR POTENTIAL REUSE.
02 4116.AC	DEMOLISH GRID, REMOVE AND SET ASIDE TILE FOR POTENTIAL REUSE.
02 4116.AD	PARTIALLY REMOVE SOFFIT AS NEEDED FOR NEW WALL INSTALLATION.
02 4116.AF	MODIFY SOFFIT AS NEEDED FOR PROPOSED SOFFIT EXTENSION.
02 4116.AM	EXISTING LIGHT FIXTURE TO BE REMOVED AND DISCAREDED. REFER TO ELECTRICAL.
02 4116.BA	PARTIALLY REMOVE GRID AND TILE AS NEEDED FOR RECESSED PROJECTION SCREEN INSTALLATION, SET ASIDE GRID AND TILE FOR POTENTIAL REUSE.
02 4116.CD	EXISTING DIFFUSER TO BE REMOVED AND DISCARDED. REFER TO MECHANICAL.
02 4116.CJ	EXISTING STOREFRONT TO BE REMOVED AND DISCARDED.
02 4116.I	EXISTING WALL TO BE REMOVED.

LEGEND

- XX'-X" — CEILING HEIGHT (SEE PLAN FOR ACTUAL HEIGHTS)
- ACT-1 — MATERIAL TAG. REFER TO MATERIAL SCHEDULE FOR MORE INFORMATION
- ACT-1 — INTERIOR - ACOUSTIC CEILING TILE. REUSE OR MATCH EXISTING TILE AND GRID
- GWB-1 — INTERIOR - GYPSUM BOARD CEILING OVER NEW 2X FRAMING
- EXTERIOR - (E) SOFFIT TO REMAIN
- DEMO - INTERIOR - ACOUSTICAL CEILING TILE. SEE KEYNOTE
- DEMO - INTERIOR - GYPSUM BOARD CEILING. SEE KEYNOTE
- MECHANICAL EQUIPMENT, REFER TO MECHANICAL PLANS
- LIGHT FIXTURE, REFER TO ELECTRICAL PLANS
- CEILING ACCESS PANEL
- DEMOLISHED OBJECTS

CITY OF SAN LUIS OBISPO

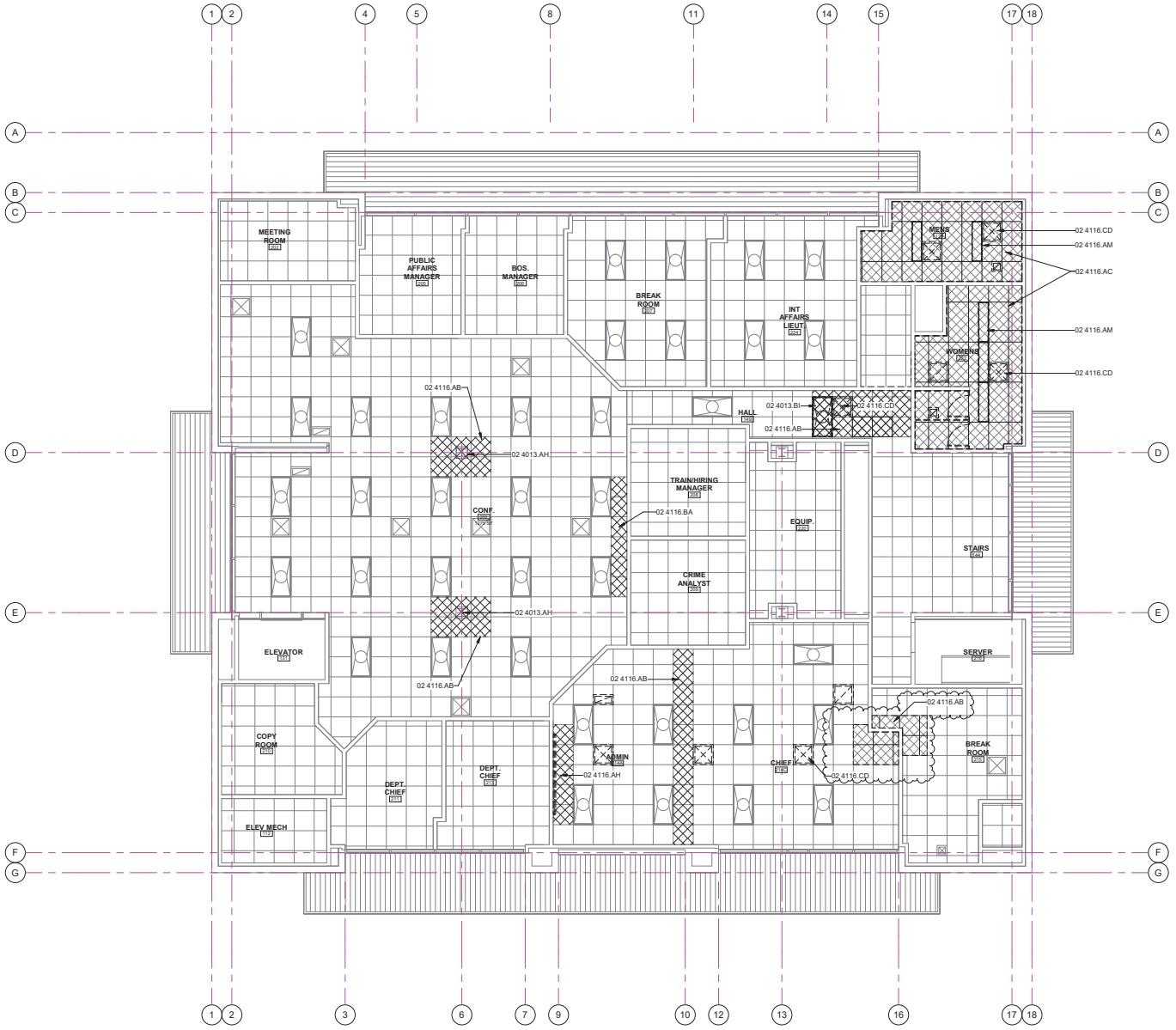
1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

SHEET TITLE: DEMOLITION REFLECTED CEILING PLAN - FIRST FLOOR

LICENSED ARCHITECT — JOHAN HOWE — C 40884 — 10-31-25 — RENEWAL DATE — STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	AD-111



1 DEMOLITION REFLECTED CEILING PLAN - SECOND FLOOR

AD-112 SCALE: 3/16" = 1'-0"

RCP GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-100 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
3. REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION.
4. REFER TO DETAILS FOR FLOOR/CEILING ASSEMBLIES.
5. HEIGHT OF CEILINGS SHALL BE MEASURED FROM TOP OF SLAB TO FINISH FACE OF GWB OR FACE OF CEILING GRID AS INDICATED ON THE REFLECTED CEILING PLAN, UNO.
6. BORDERS AT LAY-IN ACOUSTICAL CEILING PANELS SHALL BE CUT TO MATCH FACTORY EDGE PROFILE. NO EXPOSED FASTENERS SHALL BE PERMITTED INCLUDING POP RIVETS AND TAPPETS.
7. CONTRACTOR TO VERIFY DEPTH OF SOFFITS AND HOLD TIGHT TO PLUMBING, SPRINKLERS, ELECTRICAL AND MECHANICAL DUCTS
8. SEE MECHANICAL DRAWINGS FOR MECH. ACCESS PANELS. PAINT TO MATCH CEILING
9. AT DROPPED GWB SOFFITS/GWB BEAMS, PROVIDE C-STUDS AS VERTICAL SUPPORTS AT EACH SIDE OF THE SOFFIT/BEAM AND DIAGONAL BRACING FOR WRACKING. IF CEILING JOIST SPACING DIFFERS FROM FLOOR THEN BLOCKING BETWEEN THE FLOOR FRAMING MAY BE UTILIZED TO ATTACH THE VERTICAL STRUTS
10. ALL LIGHT FIXTURES ARE TO BE INSTALLED ACCORDING TO THE ARCHITECTURAL REFLECTED CEILING PLAN. ARCHITECT TO REVIEW CEILING LAYOUT INCLUDING BULKHEADS AND GRID PRIOR TO INSTALLATION.
11. PROVIDE NEW ROLLER SHADES AT ALL EXTERIOR WINDOWS EXCLUDING ENTRANCE VESTIBULE AND SOUTH STAIR. SINGLE ROLLER W/ FASCIA. REFER TO SPECS FOR SHADE CLOTH

KEYNOTES

02 4013.AH	EXISTING COLUMN TO REMAIN. PROTECT IN PLACE.
02 4013.BI	EXISTING LIGHT FIXTURE TO BE RELOCATED. REFER TO ELECTRICAL.
02 4116.AB	PARTIALLY REMOVE GRID AND TILE AS NEEDED FOR NEW WALL INSTALLATION, SET ASIDE GRID AND TILE FOR POTENTIAL REUSE.
02 4116.AC	DEMOLISH GRID, REMOVE AND SET ASIDE TILE FOR POTENTIAL RESUSE.
02 4116.AH	MODIFY EXISTING ACT CEILING AS NEEDED FOR REMOVAL OF RECESSED PROJECTOR SCREEN.
02 4116.AM	EXISTING LIGHT FIXTURE TO BE REMOVED AND DISCAREDED. REFER TO ELECTRICAL.
02 4116.BA	PARTIALLY REMOVE GRID AND TILE AS NEEDED FOR RECESSED PROJECTION SCREEN INSTALLATION, SET ASIDE GRID AND TILE FOR POTENTIAL REUSE.
02 4116.CD	EXISTING DIFFUSER TO BE REMOVED AND DISCARDED. REFER TO MECHANICAL.

LEGEND

- XX'-X" — CEILING HEIGHT (SEE PLAN FOR ACTUAL HEIGHTS)
- ACT-1 — MATERIAL TAG REFER TO MATERIAL SCHEDULE FOR MORE INFORMATION
- ACT-1 — INTERIOR - ACOUSTIC CEILING TILE REUSE OR MATCH EXISTING TILE AND GRID
- GWB-1 — INTERIOR - GYPSUM BOARD CEILING OVER NEW 2X FRAMING
- EXTERIOR - (E) SOFFIT TO REMAIN
- DEMO - INTERIOR - ACOUSTICAL CEILING TILE SEE KEYNOTE
- DEMO - INTERIOR - GYPSUM BOARD CEILING SEE KEYNOTE
- MECHANICAL EQUIPMENT, REFER TO MECHANICAL PLANS
- LIGHT FIXTURE, REFER TO ELECTRICAL PLANS
- CEILING ACCESS PANEL
- DEMOLISHED OBJECTS

CITY OF SAN LUIS OBISPO

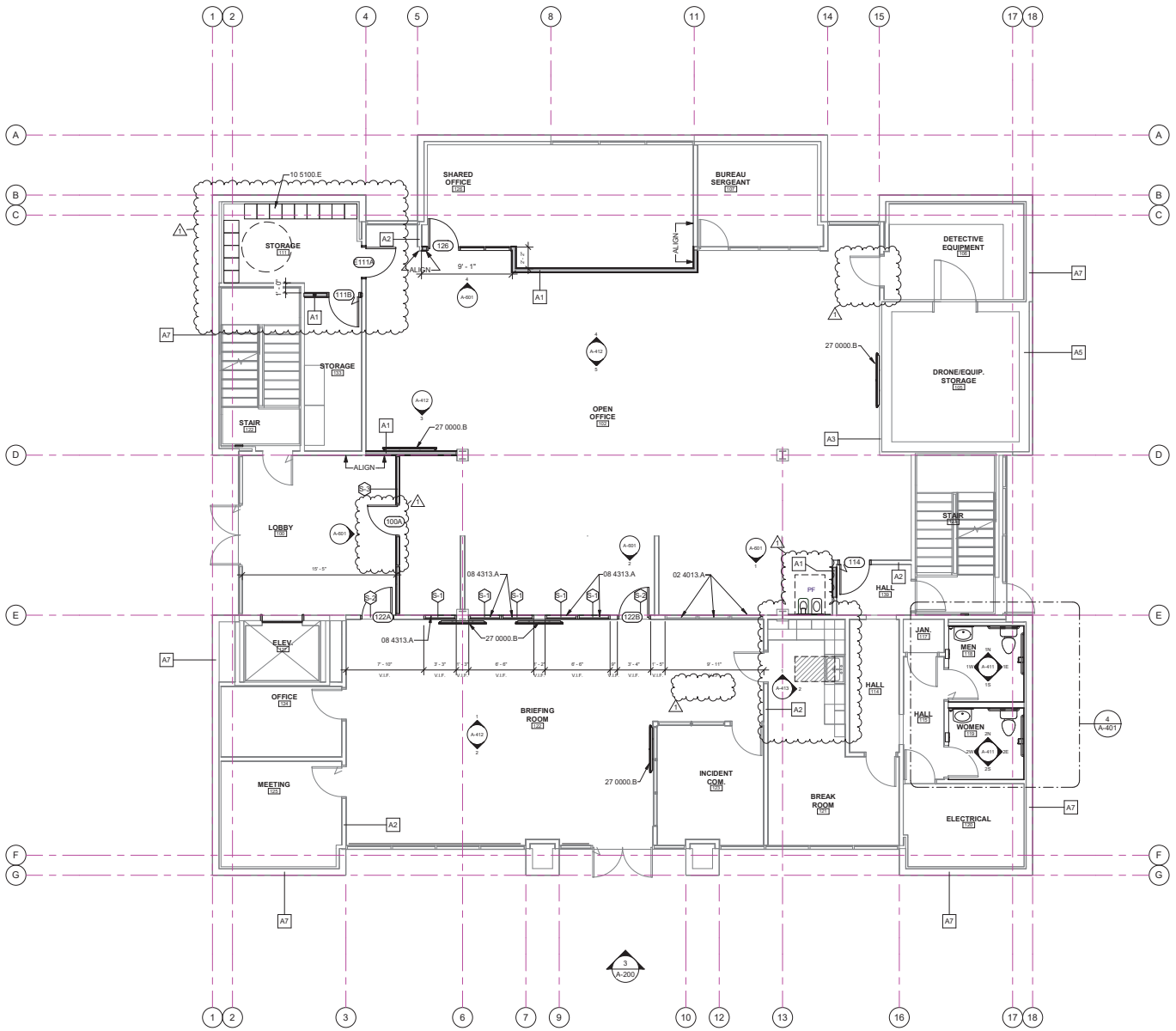
1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

SHEET TITLE: DEMOLITION REFLECTED CEILING PLAN - SECOND FLOOR

LICENSED ARCHITECT — JOHN HOWELL — 9/13/24 — C 40884 — 10-31-25 — RENEWAL DATE — STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	AD-112



1 FIRST FLOOR PLAN

A-101 SCALE: 3/16" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION IF PROVIDED.
3. REFER TO MECHANICAL PLANS, DRAWINGS OR REPORTS FOR FURTHER INFORMATION.
4. REFER TO PLUMBING PLANS OR DRAWINGS FOR FURTHER INFORMATION IF PROVIDED.
5. NOT USED
6. DIMENSIONS ARE TO FACE OF EXISTING FINISH UNLESS SPECIFICALLY NOTED OTHERWISE.
7. PROVIDE ADEQUATE BLOCKING IN WALLS FOR CABINETS AND OTHER WALL MOUNTED ACCESSORIES INCLUDING BUT NOT LIMITED TO HANDRAILS, SHELVING AND BATHROOM FIXTURES.
8. PROVIDE FIREBLOCKING FOR WALL CAVITIES THAT EXCEED **2022 CBC** HEIGHT LIMITATIONS
9. DOOR AND WINDOW DIMENSIONS ARE CENTERED AT OPENINGS
10. WHERE DOOR IS LOCATED WITHOUT DIMENSION AT THE CORNER OF A ROOM IT SHALL BE 4" FROM FACE OF FRAMING OF ADJACENT WALL TO ROUGH DOOR OPENING
11. SEE CODE ANALYSIS FOR LOCATIONS OF FIRE PARTITIONS AND FIRE BARRIERS
12. WHERE RECESSED FIXTURES OCCUR IN WALLS OR HORIZONTAL ASSEMBLIES, THE FIRE RATING OF THOSE ASSEMBLIES SHALL BE MAINTAINED
13. AT ALL PENETRATIONS AND INTERSECTIONS OF FIRE-RATED PARTITIONS, PROVIDE FIRE SEALANT AND/OR FIRE STOPPING TO MAINTAIN CONTINUITY OF PARTITION RATING

KEYNOTES

02 4013.A	EXISTING STOREFRONT TO REMAIN. PROTECT IN PLACE
08 4313.A	ALUMINUM STOREFRONT SYSTEM - REFER TO SCHEDULES.
10 5100.E	15"W X 18" D PERSONAL STORAGE LOCKER
27 0000.B	WALL MOUNTED TV, BY OWNER

WALL TYPES LEGEND

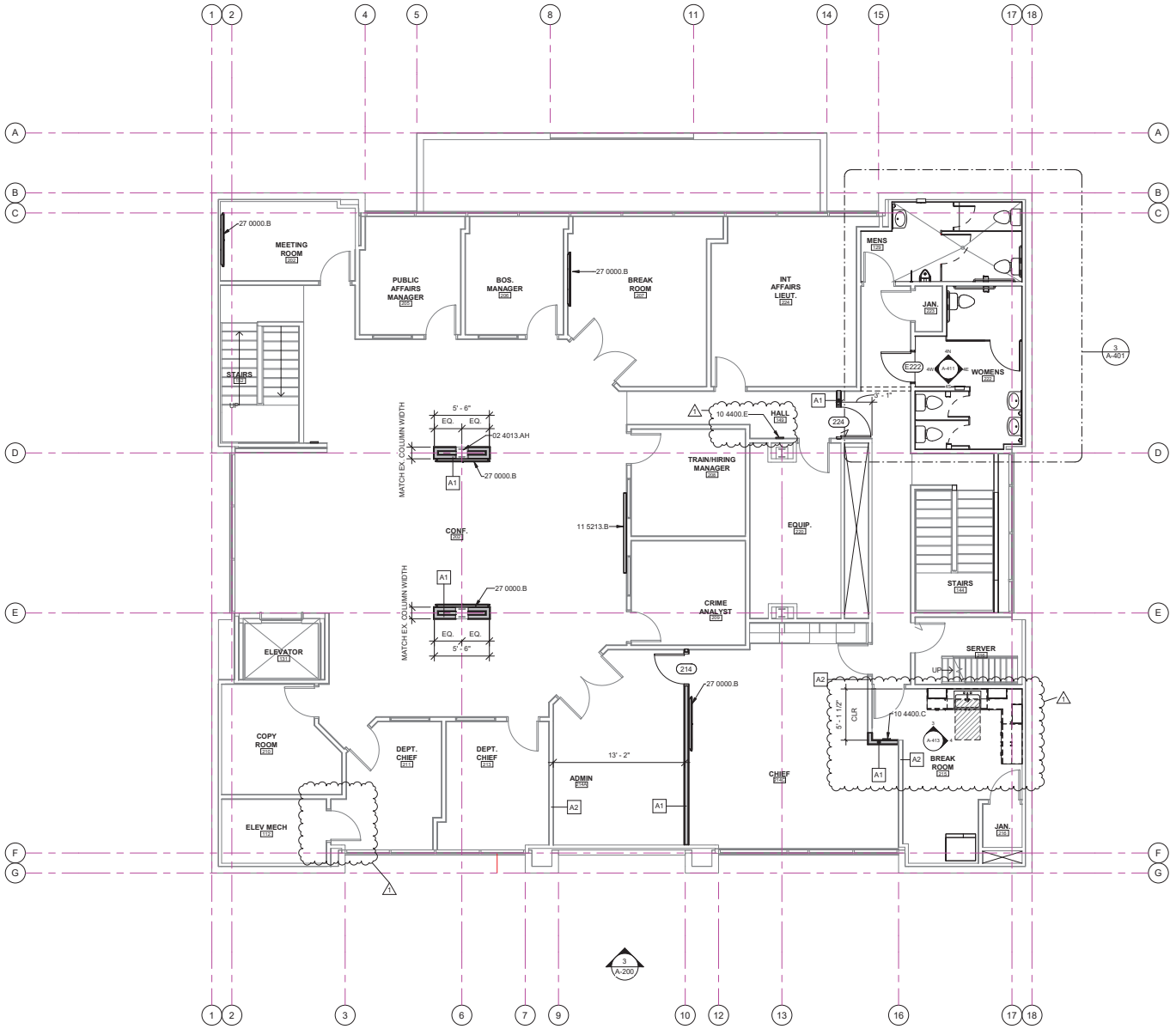
A1	NEW 3-5/8" STEEL STUD FRAMED INTERIOR PARTITION W/ 5/8" GYP. BOARD EACH SIDE, ACOUSTIC BATT INSULATION, SEE A-902 FOR DETAILS
A2	EXISTING STUD FRAMED WALL, TO REMAIN
A3	EXISTING WALL FURRING, TO REMAIN
A4	EXISTING MASONRY BLOCK WALL, TO REMAIN
A5	EXISTING CONCRETE WALL, TO REMAIN
A6	EXISTING STOREFRONT WALL, TO REMAIN
A7	EXISTING MASONRY BLOCK WALL, TO REMAIN

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: PROPOSED FIRST FLOOR PLAN

LICENSED ARCHITECT
JOHNSON HOUSE
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY: JR
DRAWN BY: JR
CHECKED BY:
APPROVED BY: JH
SCALE: As indicated
DATE: 6/20/24
CITY SPECIFICATION NO. 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO. A-101



1 SECOND FLOOR PLAN

A-102 SCALE: 3/16" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION IF PROVIDED.
3. REFER TO MECHANICAL PLANS, DRAWINGS OR REPORTS FOR FURTHER INFORMATION.
4. REFER TO PLUMBING PLANS OR DRAWINGS FOR FURTHER INFORMATION IF PROVIDED.
5. NOT USED
6. DIMENSIONS ARE TO FACE OF EXISTING FINISH UNLESS SPECIFICALLY NOTED OTHERWISE.
7. PROVIDE ADEQUATE BLOCKING IN WALLS FOR CABINETS AND OTHER WALL MOUNTED ACCESSORIES INCLUDING BUT NOT LIMITED TO HANDRAILS, SHELVING AND BATHROOM FIXTURES.
8. PROVIDE FIREBLOCKING FOR WALL CAVITIES THAT EXCEED **2022 CBC** HEIGHT LIMITATIONS
9. DOOR AND WINDOW DIMENSIONS ARE CENTERED AT OPENINGS
10. WHERE DOOR IS LOCATED WITHOUT DIMENSION AT THE CORNER OF A ROOM IT SHALL BE 4" FROM FACE OF FRAMING OF ADJACENT WALL TO ROUGH DOOR OPENING
11. SEE CODE ANALYSIS FOR LOCATIONS OF FIRE PARTITIONS AND FIRE BARRIERS
12. WHERE RECESSED FIXTURES OCCUR IN WALLS OR HORIZONTAL ASSEMBLIES, THE FIRE RATING OF THOSE ASSEMBLIES SHALL BE MAINTAINED
13. AT ALL PENETRATIONS AND INTERSECTIONS OF FIRE-RATED PARTITIONS, PROVIDE FIRE SEALANT AND/OR FIRE STOPPING TO MAINTAIN CONTINUITY OF PARTITION RATING

KEYNOTES

02 4013.AH	EXISTING COLUMN TO REMAIN. PROTECT IN PLACE.
10 4400.C	SEMI-RECESSED FIRE EXTINGUISHER CABINET WITH EXTINGUISHER, 2A:10B:C RATING ; REFER TO 7/A-903
10 4400.E	PROVIDE NEW FIRE EXTINGUISHER CABINET AND FIRE EXTINGUISHER AT EXISTING LOCATION
11 5213.B	POWERED RETRACTABLE PROJECTION SCREEN, BY OWNER, COORDINATE POCKET INSTALLATION WITH CEILING
27 0000.B	WALL MOUNTED TV, BY OWNER

WALL TYPES LEGEND

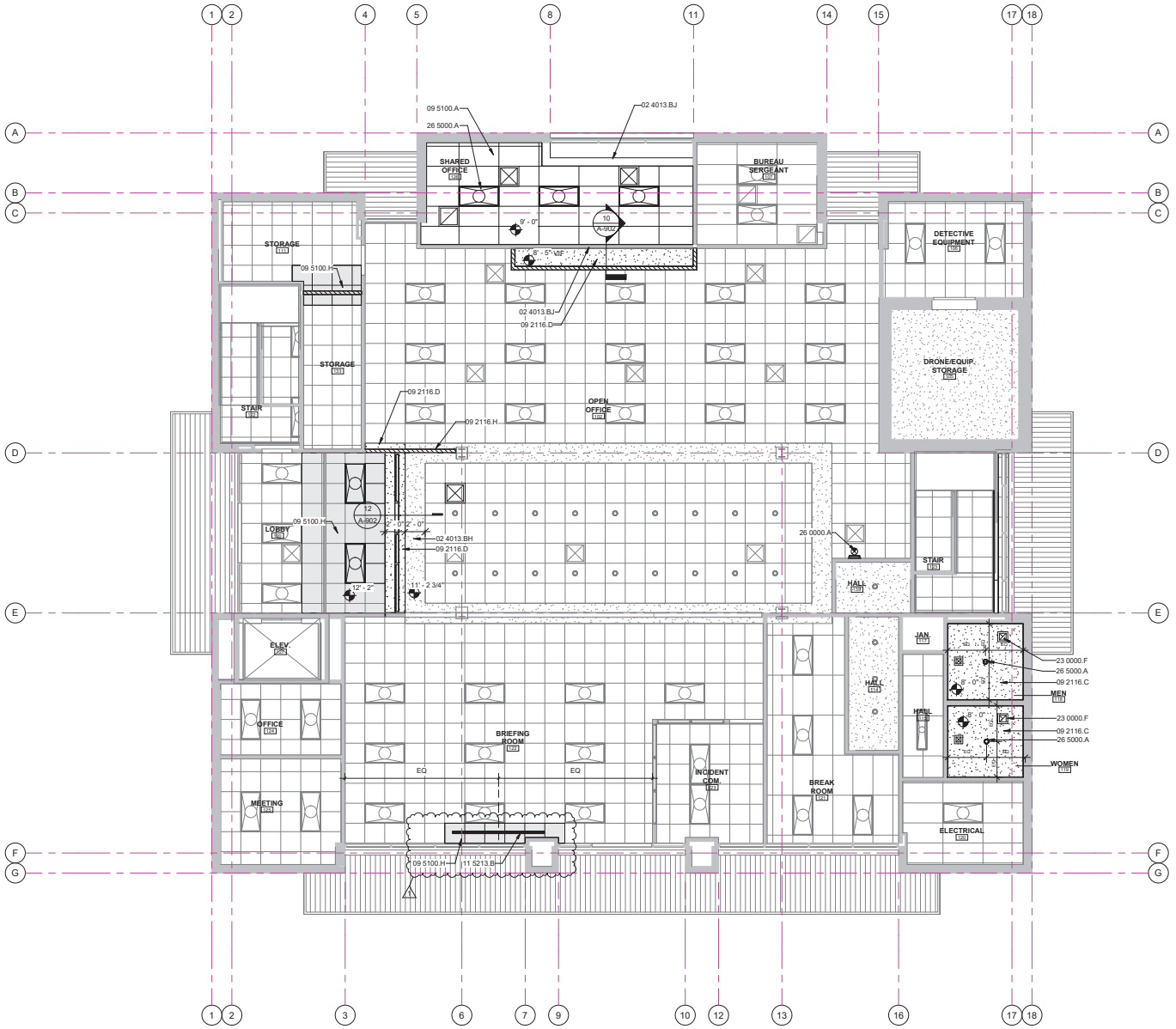
A1	NEW 3-5/8" STEEL STUD FRAMED INTERIOR PARTITION W/ 5/8" GYP. BOARD EACH SIDE, ACOUSTIC BATT INSULATION, SEE A-902 FOR DETAILS
A2	EXISTING STUD FRAMED WALL, TO REMAIN
A3	EXISTING WALL FURRING, TO REMAIN
A4	EXISTING MASONRY BLOCK WALL, TO REMAIN
A5	EXISTING CONCRETE WALL, TO REMAIN
A6	EXISTING STOREFRONT WALL, TO REMAIN
A7	EXISTING MASONRY BLOCK WALL, TO REMAIN

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: PROPOSED SECOND FLOOR PLAN

LICENSED ARCHITECT
JONATHAN HOUCK
9/13/24
C-40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY: JR
DRAWN BY: JR
CHECKED BY:
APPROVED BY: JH
SCALE: As indicated
DATE: 6/20/24
CITY SPECIFICATION NO. 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO. A-102



1 REFLECTED CEILING PLAN - FIRST FLOOR

A-111 SCALE: 3/16" = 1'-0"

RCP GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-100 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
3. REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION.
4. REFER TO DETAILS FOR FLOOR/CEILING ASSEMBLIES.
5. HEIGHT OF CEILINGS SHALL BE MEASURED FROM TOP OF SLAB TO FINISH FACE OF GWB OR FACE OF CEILING GRID AS INDICATED ON THE REFLECTED CEILING PLAN, UNO.
6. BORDERS AT LAY-IN ACOUSTICAL CEILING PANELS SHALL BE CUT TO MATCH FACTORY EDGE PROFILE. NO EXPOSED FASTENERS SHALL BE PERMITTED INCLUDING POP RIVETS AND TAPPETS.
7. CONTRACTOR TO VERIFY DEPTH OF SOFFITS AND HOLD TIGHT TO PLUMBING, SPRINKLERS, ELECTRICAL AND MECHANICAL DUCTS
8. SEE MECHANICAL DRAWINGS FOR MECH. ACCESS PANELS. PAINT TO MATCH CEILING
9. AT DROPPED GWB SOFFITS/GWB BEAMS, PROVIDE C-STUDS AS VERTICAL SUPPORTS AT EACH SIDE OF THE SOFFIT/BEAM AND DIAGONAL BRACING FOR WRACKING. IF CEILING JOIST SPACING DIFFERS FROM FLOOR THEN BLOCKING BETWEEN THE FLOOR FRAMING MAY BE UTILIZED TO ATTACH THE VERTICAL STRUTS
10. ALL LIGHT FIXTURES ARE TO BE INSTALLED ACCORDING TO THE ARCHITECTURAL REFLECTED CEILING PLAN. ARCHITECT TO REVIEW CEILING LAYOUT INCLUDING ALL KNOCK-OUT GRID PRIOR TO INSTALLATION.
11. PROVIDE NEW ROLLER SHADES AT ALL EXTERIOR WINDOWS EXCLUDING ENTRANCE VESTIBULE AND SOUTH STAIR. SINGLE ROLLER W/ FASCIA. REFER TO SPECS FOR SHADE CLOTH

KEYNOTES

02 4013.BH	EXISTING SOFFIT DROP TO REMAIN.
02 4013.BJ	EXISTING BULKHEAD TO REMAIN.
09 2116.C	GYPSUM BOARD CEILING ASSEMBLY
09 2116.D	GYPSUM BOARD SOFFIT & FRAMING
09 2116.H	NEW INTERIOR WALL TO DIE INTO BOTTOM OF SOFFIT. REPAIR SOFFIT AROUND NEW WALL AS REQUIED.
09 5100.A	ACOUSTICAL LAY-IN TILE CEILING
09 5100.H	ACOUSTICAL CEILING TILE & GRID TO MATCH EXISTING OR REUSE GOOD CONDITION SET ASIDE EXISTING TILE AND GRID
11 5213.B	POWERED RETRACTABLE PROJECTION SCREEN, BY OWNER, COORDINATE POCKET INSTALLATION WITH CEILING
23 0000.F	EXHAUST FAN - REFER TO MECHANICAL
26 0000.A	NEW ILLUMINATED EXIT SIGN.
26 5000.A	LIGHT FIXTURE. REFER TO ELECTRICAL

LEGEND

XX'-X" CEILING HEIGHT (SEE PLAN FOR ACTUAL HEIGHTS)

ACT-1 MATERIAL TAG
REFER TO MATERIAL SCHEDULE FOR MORE INFORMATION

ACT-1 INTERIOR - ACOUSTIC CEILING TILE
REUSE OR MATCH EXISTING TILE AND GRID

GWB-1 INTERIOR - GYPSUM BOARD CEILING OVER NEW 2X FRAMING

EXTERIOR - (E) SOFFIT TO REMAIN

DEMO - INTERIOR - ACOUSTICAL CEILING TILE
SEE KEYNOTE

DEMO - INTERIOR - GYPSUM BOARD CEILING
SEE KEYNOTE

MECHANICAL EQUIPMENT, REFER TO MECHANICAL PLANS

LIGHT FIXTURE, REFER TO ELECTRICAL PLANS

CEILING ACCESS PANEL

DEMOLISHED OBJECTS

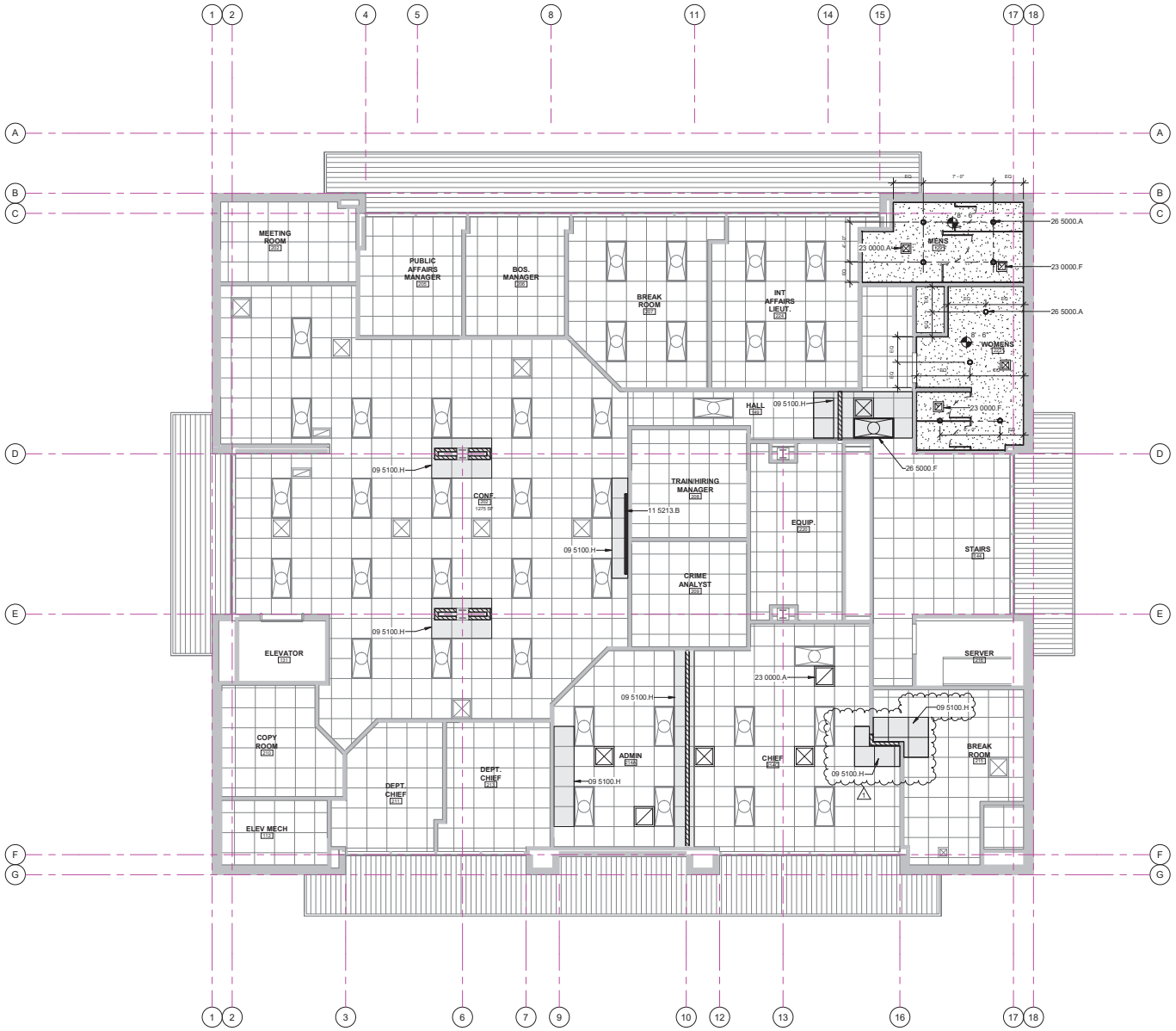
CITY OF SAN LUIS OBISPO

PROJECT TITLE:
1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE:
REFLECTED CEILING PLAN - FIRST FLOOR

LICENSED ARCHITECT JOHN HOWARD RENEWAL DATE 9/13/26 C 40884 10-31-25 OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-111



1 REFLECTED CEILING PLAN - SECOND FLOOR

A-112 SCALE: 3/16" = 1'-0"

RCP GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-100 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
3. REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION.
4. REFER TO DETAILS FOR FLOOR/CEILING ASSEMBLIES.
5. HEIGHT OF CEILINGS SHALL BE MEASURED FROM TOP OF SLAB TO FINISH FACE OF GWB OR FACE OF CEILING GRID AS INDICATED ON THE REFLECTED CEILING PLAN, UNO.
6. BORDERS AT LAY-IN ACOUSTICAL CEILING PANELS SHALL BE CUT TO MATCH FACTORY EDGE PROFILE. NO EXPOSED FASTENERS SHALL BE PERMITTED INCLUDING POP RIVETS AND TAPPETS.
7. CONTRACTOR TO VERIFY DEPTH OF SOFFITS AND HOLD TIGHT TO PLUMBING, SPRINKLERS, ELECTRICAL AND MECHANICAL DUCTS
8. SEE MECHANICAL DRAWINGS FOR MECH. ACCESS PANELS. PAINT TO MATCH CEILING
9. AT DROPPED GWB SOFFITS/GWB BEAMS, PROVIDE C-STUDS AS VERTICAL SUPPORTS AT EACH SIDE OF THE SOFFIT/BEAM AND DIAGONAL BRACING FOR WRACKING. IF CEILING JOIST SPACING DIFFERS FROM FLOOR THEN BLOCKING BETWEEN THE FLOOR FRAMING MAY BE UTILIZED TO ATTACH THE VERTICAL STRUTS
10. ALL LIGHT FIXTURES ARE TO BE INSTALLED ACCORDING TO THE ARCHITECTURAL REFLECTED CEILING PLAN. ARCHITECT TO REVIEW CEILING LAYOUT INCLUDING BULKHEADS AND GRID PRIOR TO INSTALLATION.
11. PROVIDE NEW ROLLER SHADES AT ALL EXTERIOR WINDOWS EXCLUDING ENTRANCE VESTIBULE AND SOUTH STAIR. SINGLE ROLLER W/ FASCIA. REFER TO SPECS FOR SHADE CLOTH

KEYNOTES

09 5100.H	ACOUSTICAL CEILING TILE & GRID TO MATCH EXISTING OR REUSE GOOD CONDITION SET ASIDE EXISTING TILE AND GRID
11 5213.B	POWERED RETRACTABLE PROJECTION SCREEN, BY OWNER, COORDINATE POCKET INSTALLATION WITH CEILING
23 0000.A	MECHANICAL EQUIPMENT. REFER TO MECHANICAL
23 0000.F	EXHAUST FAN - REFER TO MECHANICAL
26 5000.A	LIGHT FIXTURE. REFER TO ELECTRICAL
26 5000.F	NEW LOCATION OF LIGHT FIXTURE. REFER TO ELECTRICAL.

LEGEND

XX'-X" CEILING HEIGHT (SEE PLAN FOR ACTUAL HEIGHTS)

ACT-1 MATERIAL TAG REFER TO MATERIAL SCHEDULE FOR MORE INFORMATION

ACT-1 INTERIOR - ACOUSTIC CEILING TILE REUSE OR MATCH EXISTING TILE AND GRID

GWB-1 INTERIOR - GYPSUM BOARD CEILING OVER NEW 2X FRAMING

EXTERIOR - (E) SOFFIT TO REMAIN

DEMO - INTERIOR - ACOUSTICAL CEILING TILE SEE KEYNOTE

DEMO - INTERIOR - GYPSUM BOARD CEILING SEE KEYNOTE

MECHANICAL EQUIPMENT, REFER TO MECHANICAL PLANS

LIGHT FIXTURE, REFER TO ELECTRICAL PLANS

CEILING ACCESS PANEL

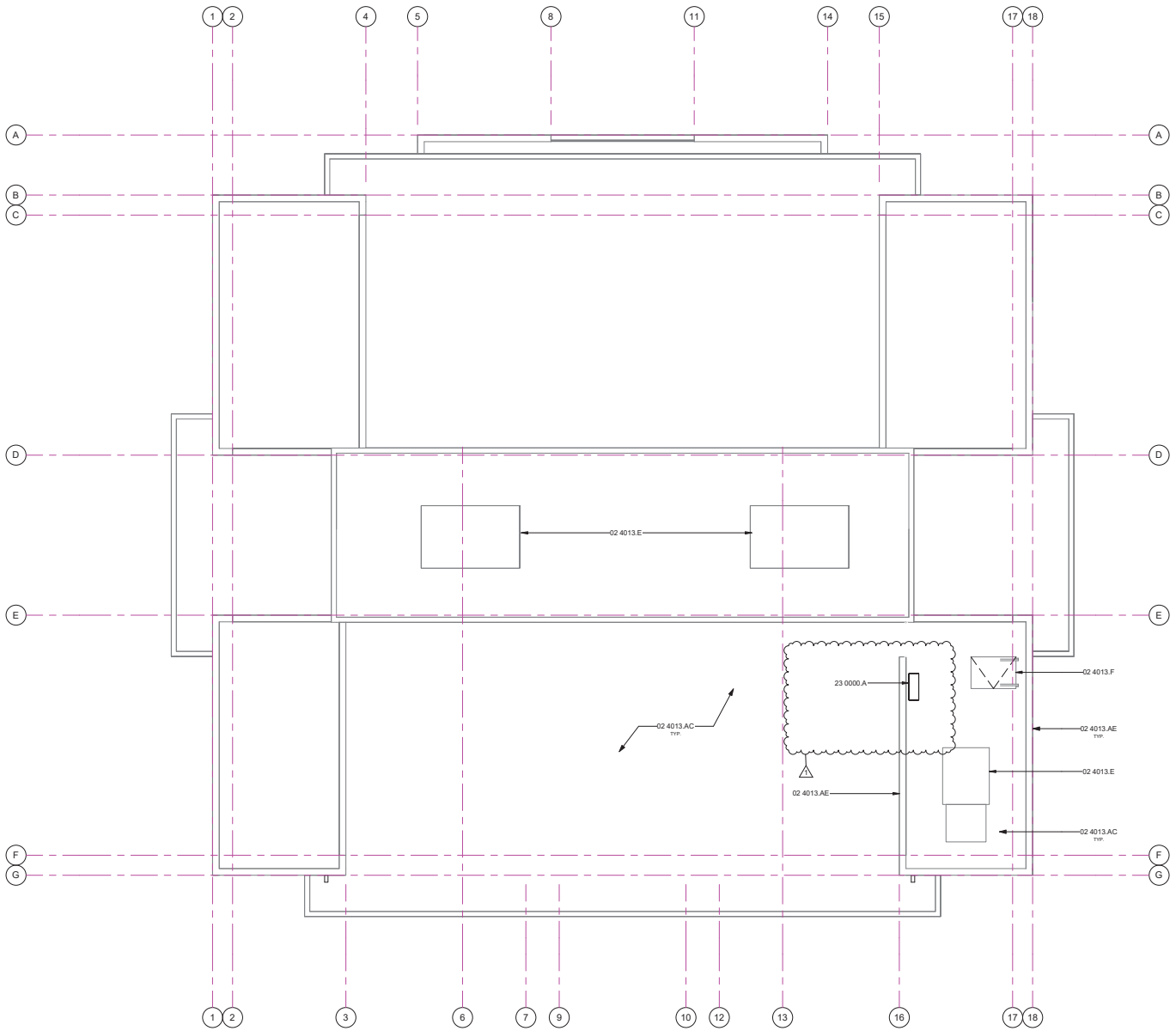
DEMOLISHED OBJECTS

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: REFLECTED CEILING PLAN - SECOND FLOOR

LICENSED ARCHITECT JOHNSON HOVICK 9/13/24 C 40884 10-31-25 RENEWAL DATE STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-112



1 ROOF PLAN

A-120 SCALE: 3/16" = 1'-0"

ROOF PLAN GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS
2. REFER TO MECHANICAL PLANS FOR ROOF MOUNTED EQUIPMENT LOCATIONS AND TYPES.
3. REFER TO ELECTRICAL PLANS FOR POWER DISTRIBUTION TO ROOF MOUNTED EQUIPMENT.
4. ALL ROOFING MATERIALS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

KEYNOTES

02 4013.AC	EXISTING LOW-SLOPE SINGLE-PLY ROOF TO REMAIN.
02 4013.AE	EXISTING PARAPET CAP TO REMAIN.
02 4013.E	EXISTING MECHANICAL UNIT TO REMAIN
02 4013.F	EXISTING ROOF HATCH TO REMAIN
23 0000.A	MECHANICAL EQUIPMENT. REFER TO MECHANICAL

LEGEND

(E) DECK. (E) SINGLE PLY ROOFING SYSTEM

1

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: ROOF PLAN

LICENSED ARCHITECT
JONATHAN HOVEK
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY: JR

DRAWN BY: JR

CHECKED BY:

APPROVED BY: JH

SCALE: As indicated

DATE: 6/20/24

CITY SPECIFICATION NO. 2000577-04

PLAN FILE NO. / LOCATION

SHEET NO. A-120

KEYNOTES

26 0000.L EXISTING ILLUMINATED SIGNAGE CABINET TO REMAIN. NEW ARTWORK PROVIDED BY OWNER UNDER SEPARATE PERMIT.

3 WEST ELEVATION

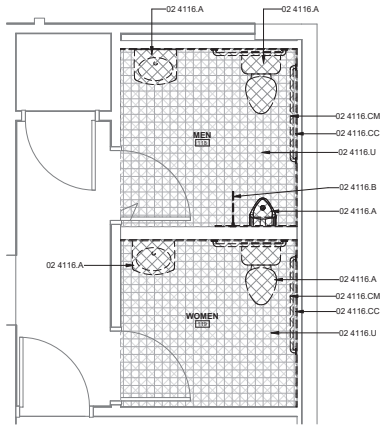
A-101 | A-200 SCALE: 1/8" = 1'-0"

PROJECT TITLE:
1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE:
EXTERIOR ELEVATIONS

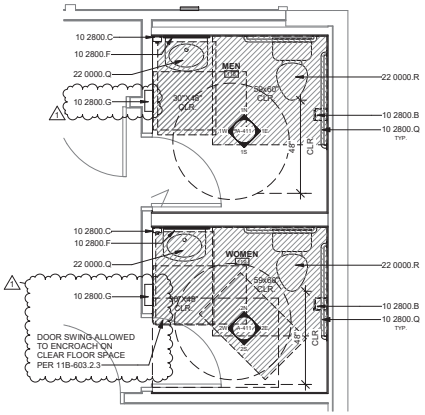
LICENSED ARCHITECT
JOSHUA HOWK
91324
C 40884
10-31-25
RENEWAL DATE
OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	1/8" = 1'-0"
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-200



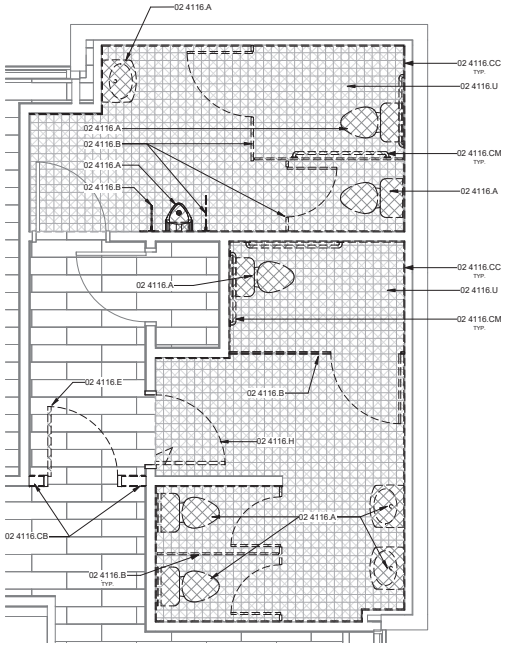
1 FIRST FLOOR RESTROOM - DEMO

AD-101 | A-401 SCALE: 3/8" = 1'-0"



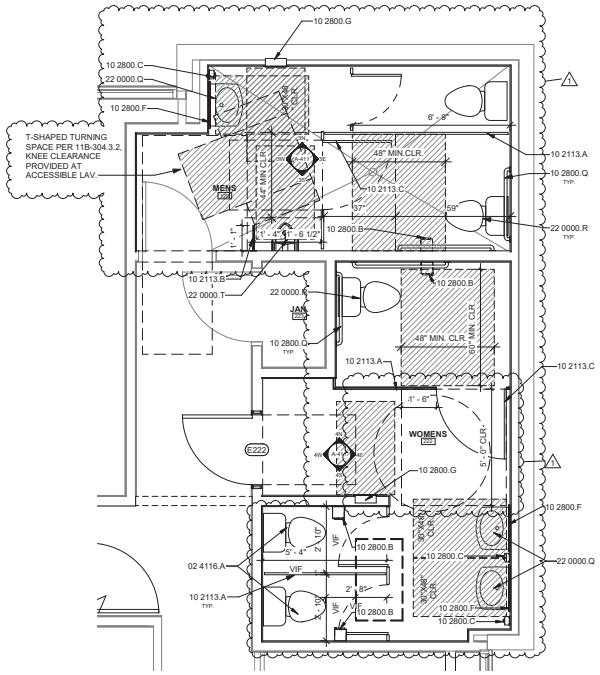
4 FIRST FLOOR RESTROOM - PROPOSED

A-101 | A-401 SCALE: 3/8" = 1'-0"



2 SECOND FLOOR RESTROOM - DEMO

AD-102 | A-401 SCALE: 3/8" = 1'-0"



3 2ND FLOOR RESTROOM - PROPOSED

A-102 | A-401 SCALE: 3/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION IF PROVIDED.
3. REFER TO MECHANICAL PLANS, DRAWINGS OR REPORTS FOR FURTHER INFORMATION.
4. REFER TO PLUMBING PLANS OR DRAWINGS FOR FURTHER INFORMATION IF PROVIDED.
5. NOT USED.
6. DIMENSIONS ARE TO FACE OF EXISTING FINISH UNLESS SPECIFICALLY NOTED OTHERWISE.
7. PROVIDE ADEQUATE BLOCKING IN WALLS FOR CABINETS AND OTHER WALL MOUNTED ACCESSORIES INCLUDING BUT NOT LIMITED TO HANDRAILS, SHELVING AND BATHROOM FIXTURES.
8. PROVIDE FIREBLOCKING FOR WALL CAVITIES THAT EXCEED **2022 CBC** HEIGHT LIMITATIONS
9. DOOR AND WINDOW DIMENSIONS ARE CENTERED AT OPENINGS
10. WHERE DOOR IS LOCATED WITHOUT DIMENSION AT THE CORNER OF A ROOM IT SHALL BE 4" FROM FACE OF FRAMING OF ADJACENT WALL TO ROUGH DOOR OPENING
11. SEE CODE ANALYSIS FOR LOCATIONS OF FIRE PARTITIONS AND FIRE BARRIERS
12. WHERE RECESSED FIXTURES OCCUR IN WALLS OR HORIZONTAL ASSEMBLIES, THE FIRE RATING OF THOSE ASSEMBLIES SHALL BE MAINTAINED
13. AT ALL PENETRATIONS AND INTERSECTIONS OF FIRE-RATED PARTITIONS, PROVIDE FIRE SEALANT AND/OR FIRE STOPPING TO MAINTAIN CONTINUITY OF PARTITION RATING

KEYNOTES

02 4116.A	EXISTING PLUMBING FIXTURE TO BE REMOVED
02 4116.B	EXISTING TOILET PARTITION TO BE REMOVED
02 4116.CB	EXISTING INTERIOR WALL TO BE REMOVED. PROTECT IN PLACE EXISTING ADJACENT WALL. PATCH WALL GAP AFTER DEMOLITION OF EXISITNG WALL.
02 4116.CC	EXISTING WALL TILE TO BE REMOVED. PREPARE WALL SURFACE FOR NEW TILE FINISH TYP. OF ALL RESTROOM WALLS.
02 4116.CM	EXISTING GRAB BAR TO BE REMOVED
02 4116.E	EXISTING DOOR AND FRAME TO BE REMOVED
02 4116.H	EXISTING DOOR TO BE REMOVED. FLIP DOOR SWING DIRECTION AND REINSTALL.
02 4116.U	EXISTING TILE FLOOR TO BE REMOVED. PREPARE (E) SLAB FOR NEW TILE FINISHES
10 2113.A	TOILET COMPARTMENT
10 2113.B	URINAL SCREEN
10 2113.C	SELF CLOSING DOOR AT ACCESSIBLE TOILET STALL
10 2800.B	SURFACE MOUNTED TOILET PAPER DISPENSER
10 2800.C	SOAP DISPENSER
10 2800.F	MIRROR
10 2800.G	SEMI-RECESSED PAPER TOWEL DISPENSER
10 2800.Q	GRAB BAR.
22 0000.Q	SINK OR LAVATORY.REFER TO PLUMBING.
22 0000.R	TOILET. REFER TO PLUMBING.
22 0000.T	URINAL. REFER TO PLUMBING.

FLOOR MATERIALS LEGEND

NOTE: REFER TO INTERIOR FINISH SCHEDULES ON SHEETS A-501 & A-502 FOR ADDTIONAL INFORMATION.

DEMO - INTERIOR - TILE

DEMO EXISTING PARTITION OR WALL FINISH

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

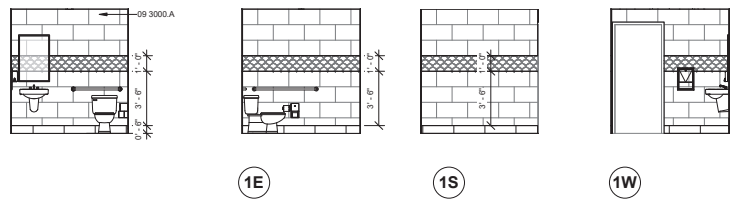
ENLARGED FLOOR PLANS

PROJECT TITLE:

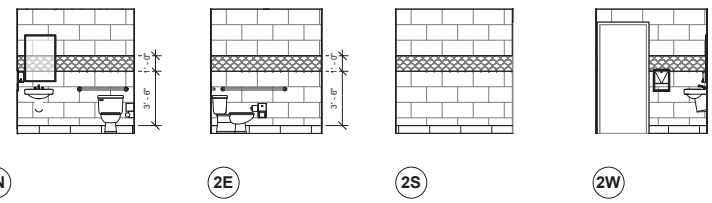
SHEET TITLE:

LICENSED ARCHITECT JOHN HOWARD 9132 C 40884 12-31-25 RENEWAL DATE STATE OF CALIFORNIA

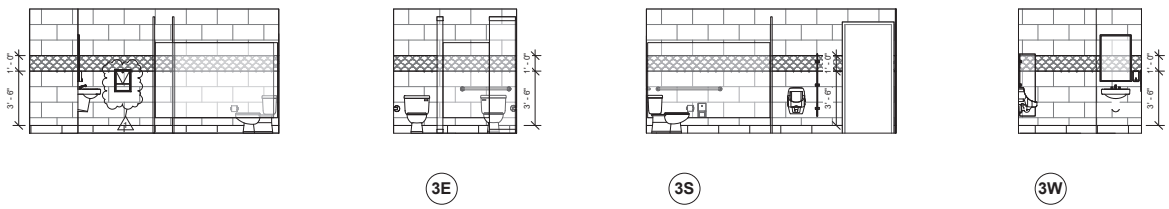
DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-401



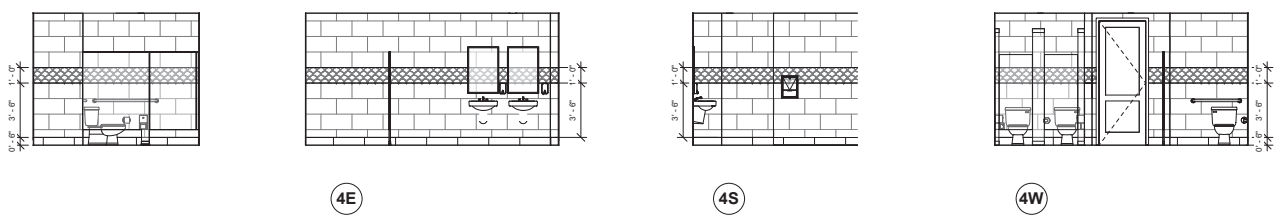
1/4" = 1'-0" **118 - MENS RESTROOM - FIRST FLOOR**



1/4" = 1'-0" **119 - WOMENS RESTROOM - FIRST FLOOR**



1/4" = 1'-0" **129 - MENS RESTROOM - SECOND FLOOR**



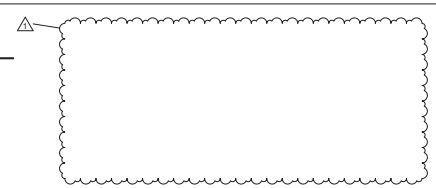
1/4" = 1'-0" **222 - WOMENS RESTROOM - SECOND FLOOR**

INT. ELEVS. GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION ON ELECTRICAL EQUIPMENT.
3. REFER TO RCP'S FOR SOFFIT DIMENSIONS AND FURTHER INFORMATION.
4. PROVIDE BLOCKING FOR ALL WALLS WHERE WALL HUNG EQUIPMENT AND FIXTURES OCCUR.
5. ALL DIMENSIONS SHOWN IN A ROOM TO BE CONSIDERED TYPICAL FOR EACH ELEVATION OF THE ROOM, UNLESS NOTED OTHERWISE.
6. VERIFY MOUNTING HEIGHTS OF ACCESSORIES AND PLUMBING FIXTURES MEET ACCESSIBILITY REQUIREMENTS WHERE APPLICABLE.
7. ALL WALL AND CEILING FINISHES SHALL COMPLY WITH ***2022 CBC TABLE 803.13*** FOR MAXIMUM FLAME SPREAD AND SMOKE DENSITY.

KEYNOTES

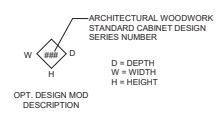
09 3000.A CERAMIC TILE, WALL APPLICATION.



LEGEND

LVT-1 MATERIAL TAG
REFER TO MATERIAL SCHEDULE FOR MORE INFORMATION

NOTE: REFER TO INTERIOR FINISH SCHEDULES ON SHEETS A-501 & A-502 FOR ADDTIONAL INFORMATION.

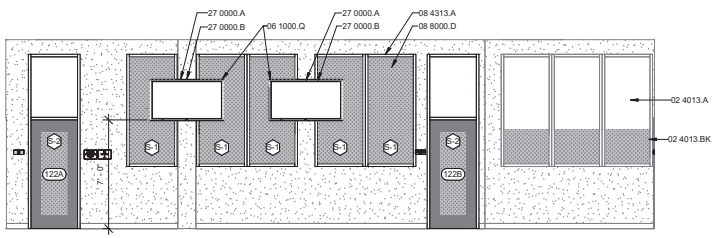


PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: INTERIOR ELEVATIONS

LICENSED ARCHITECT
JONATHAN HOUCK
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	1/4" = 1'-0"
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-411



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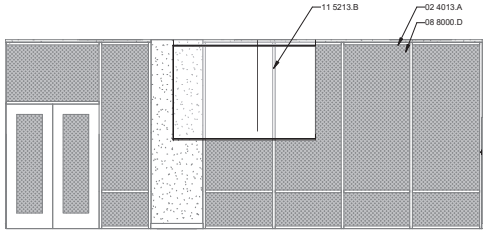
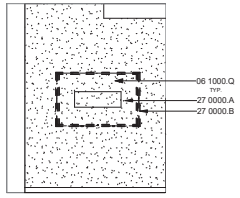


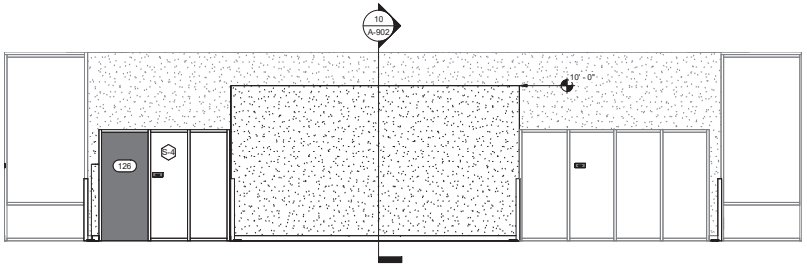
2

1/4" = 1'-0" **122 - BRIEFING ROOM**



3

1/4" = 1'-0" **102 - MEETING AREA**



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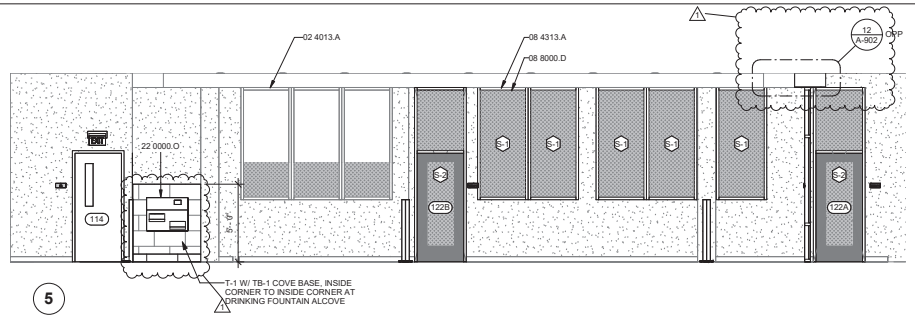


5

1/4" = 1'-0" **102 - OPEN OFFICE - PROPOSED**

INT. ELEVS. GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-002 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION ON ELECTRICAL EQUIPMENT.
3. REFER TO RCP'S FOR SOFFIT DIMENSIONS AND FURTHER INFORMATION.
4. PROVIDE BLOCKING FOR ALL WALLS WHERE WALL HUNG EQUIPMENT AND FIXTURES OCCUR.
5. ALL DIMENSIONS SHOWN IN A ROOM TO BE CONSIDERED TYPICAL FOR EACH ELEVATION OF THE ROOM, UNLESS NOTED OTHERWISE.
6. VERIFY MOUNTING HEIGHTS OF ACCESSORIES AND PLUMBING FIXTURES MEET ACCESSIBILITY REQUIREMENTS WHERE APPLICABLE.
7. ALL WALL AND CEILING FINISHES SHALL COMPLY WITH ***2022 CBC TABLE 803.13*** FOR MAXIMUM FLAME SPREAD AND SMOKE DENSITY.
8. REFER TO FINISH SCHEDULE ON A-501 FOR WALL FINISH MATERIALS AND COLOR SELECTIONS.
9. TILE SHOULD STOP AT TOP OF DOOR JAMB.

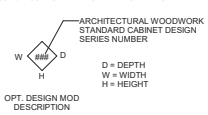
KEYNOTES

02 4013.A	EXISTING STOREFRONT TO REMAIN. PROTECT IN PLACE
02 4013.BK	EXISTING PRIVACY FILM TO REMAIN.
06 1000.Q	PROVIDE BLOCKING FOR FUTURE OWNER PROVIDED WALL-MOUNTED TV BRACKET
08 4313.A	ALUMINUM STOREFRONT SYSTEM - REFER TO SCHEDULES.
08 8000.D	FROSTED GLASS PRIVACY SCREEN
11 5213.B	POWERED RETRACTABLE PROJECTION SCREEN, BY OWNER, COORDINATE POCKET INSTALLATION WITH CEILING
22 0000.O	HI LOW DRINKING FOUNTAIN, REFER TO PLUMBING.
27 0000.A	CABLE/DATA/POWER CONNECTION, RE ELEC
27 0000.B	WALL MOUNTED TV, BY OWNER

LEGEND

LVT-1 MATERIAL TAG
REFER TO MATERIAL SCHEDULE FOR MORE INFORMATION

NOTE: REFER TO INTERIOR FINISH SCHEDULES ON SHEETS A-501 & A-502 FOR ADDTIONAL INFORMATION.

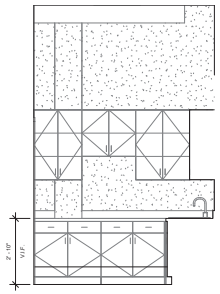


PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: INTERIOR ELEVATIONS

LICENSED ARCHITECT
JONATHAN HOVEK
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	1/4" = 1'-0"
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-412



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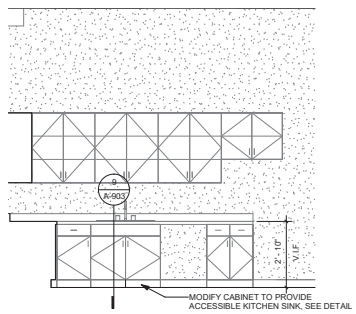
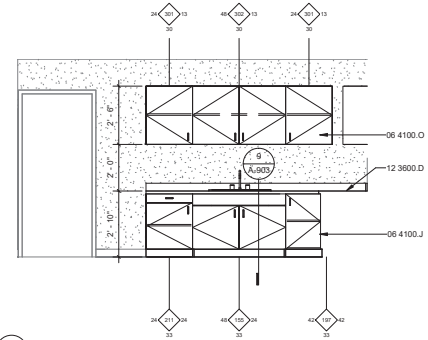


2

3/8" = 1'-0" **BREAK RM 121**



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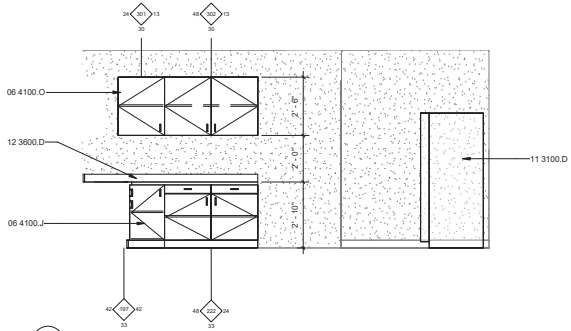


4

3/8" = 1'-0" **BREAK RM 215**

INT. ELEVS. GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-002 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION ON ELECTRICAL EQUIPMENT.
3. REFER TO RCP'S FOR SOFFIT DIMENSIONS AND FURTHER INFORMATION.
4. PROVIDE BLOCKING FOR ALL WALLS WHERE WALL HUNG EQUIPMENT AND FIXTURES OCCUR.
5. ALL DIMENSIONS SHOWN IN A ROOM TO BE CONSIDERED TYPICAL FOR EACH ELEVATION OF THE ROOM, UNLESS NOTED OTHERWISE.
6. VERIFY MOUNTING HEIGHTS OF ACCESSORIES AND PLUMBING FIXTURES MEET ACCESSIBILITY REQUIREMENTS WHERE APPLICABLE.
7. ALL WALL AND CEILING FINISHES SHALL COMPLY WITH ***2022 CBC TABLE 803.13*** FOR MAXIMUM FLAME SPREAD AND SMOKE DENSITY.
8. REFER TO FINISH SCHEDULE ON A-501 FOR WALL FINISH MATERIALS AND COLOR SELECTIONS.
9. TILE SHOULD STOP AT TOP OF DOOR JAMB.

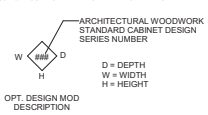
KEYNOTES

06 4100.J	BASE CABINETS W/ DRAWERS, DOORS & ADJUSTABLE SHELVING
06 4100.O	UPPER CABINET W/ DOORS & ADJUSTABLE SHELVING.
11 3100.D	REFRIGERATOR W/ ICE MAKER; OWNER FURNISHED AND INSTALLED. COORDINATE INSTALLATION WITH OWNER.
12 3600.D	PLASTIC LAMINATE COUNTERTOP & BACKSPLASH

LEGEND

LVT-1 MATERIAL TAG
REFER TO MATERIAL SCHEDULE FOR MORE INFORMATION

NOTE: REFER TO INTERIOR FINISH SCHEDULES ON SHEETS A-501 & A-502 FOR ADDTIONAL INFORMATION.

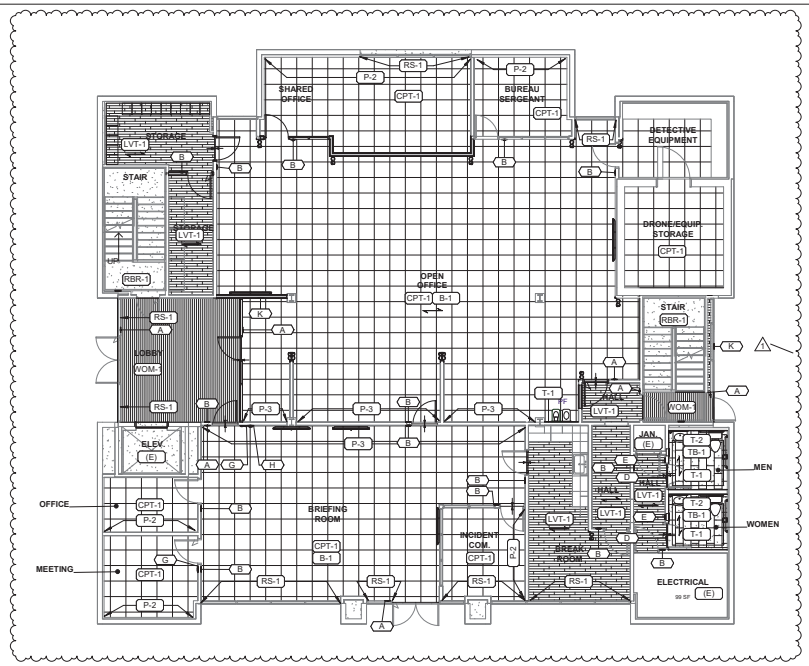


PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: INTERIOR ELEVATIONS

LICENSED ARCHITECT
JOHNATHAN HOLLER
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY: JR
DRAWN BY: JR
CHECKED BY:
APPROVED BY: JH
SCALE: As indicated
DATE: 6/20/24
CITY SPECIFICATION NO. 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO. A-413



1 01-FIRST FLOOR FINISH PLAN

A-501 SCALE: 1/8" = 1'-0"

INTERIOR FINISH SCHEDULE

CSI Spec Section	TAG	DESCRIPTION	LOCATION	MANUFACTURER	PRODUCT SPEC	SIZE	FINISH / COLOR	NOTES
	(E)	EXISTING FINISH TO REMAIN	SEE PLANS					
06 4000- ARCHITECTURAL WOODWORK								
06 4000- ARCHITECTURAL WOODWORK	PL-2	PLASTIC LAMINATE - CABINETS	BREAK ROOM	NEVAMAR			NAVY MATRIX (MR3005T)	
09 3000 - TILING								
09 3000 - TILING	T-1	CERAMIC FLOOR & WALL TILE	RESTROOMS	DALTILE	DIGNITARY	12" X 24"	SUPERIOR TAUPE	
09 3000 - TILING	T-2	ACCENT CERAMIC WALL TILE	RESTROOMS	DALTILE	REVALIA REMIX		RADIANT BLUE FAN	12" ACCENT STRIP STARTING AT 48"
09 3000 - TILING	TB-1	CERAMIC TILE COVE BASE	RESTROOMS	DALTILE	DIGNITARY	6" X 12"	SUPERIOR TAUPE	
09 6500 - RESILIENT FLOORING								
09 6500 - RESILIENT FLOORING	B-1	GENERAL BASE	GENERAL U.O.N.	ROPPE	PINNACLE	4" H (ROLL)	BLACK (100)	
09 6500 - RESILIENT FLOORING	LVT-1	LUXURY VINYL TILE	BREAK ROOM, EQUIP., STORAGE	MILLIKEN	METRO PARK | PIKE	7" x 48"	ANTLER	ASHLAR INSTALLATION
09 6500 - RESILIENT FLOORING	RBR-1	RUBBER STAIR TREADS	STAIRS	ROPPE	RAISED CIRCULAR VANTAGE DESIGN WITH RISER #96		CHARCOAL (123)	
09 6813 - TILE CARPETING								
09 6813 - TILE CARPETING	CPT-1	CARPET TILE	GENERAL CARPET TILE U.O.N.	SHAW CONTRACT	DIFFUSE + DISPERSE | DIFFUSE ECOWORX	24" x 24"	MAGNETIC FIELD	QUARTER TURN INSTALLATION
09 6813 - TILE CARPETING	WOM-1	CARPET TILE	EXITS	SHAW CONTRACT	ALL ACCESS | PACE TILE	24" x 24"	STEP	MONOLITHIC INSTALLATION
09 9123 - INTERIOR PAINTING								
09 9123 - INTERIOR PAINTING	P-1	GENERAL DINING PAINT	GENERAL U.O.N.	SHERMIN WILLIAMS			PASSIVE (SW 7064)	EGGSHELL FINISH
09 9123 - INTERIOR PAINTING	P-2	ACCENT PAINT	PRIVATE OFFICES, PAINTED DOORS AND HM DOOR TRIM	SHERMIN WILLIAMS			STAMPED CONCRETE (SW 7655)	EGGSHELL FINISH
09 9123 - INTERIOR PAINTING	P-3	ACCENT PAINT	SEE PLANS	SHERMIN WILLIAMS			DISTANCE (SW 6243)	EGGSHELL FINISH
09 9123 - INTERIOR PAINTING	P-4	ACCENT PAINT	SEE PLANS	SHERMIN WILLIAMS			IN THE NAVY (SW 9178)	EGGSHELL FINISH
10 2113.19 - PLASTIC TOILET COMPARTMENTS								
10 2113.19 - PLASTIC TOILET COMPARTMENTS	TP-1	CARPET TILE	SECOND LEVEL RESTROOMS	ASI	SOLID PLASTIC (HDPE) PARTITIONS		CHARCOAL (9237)	FLOOR ANCHORED / OVERHEAD BRACED
12 2400 - WINDOW SHADES								
12 2400 - WINDOW SHADES	RS-1	ROLLER SHADE	SEE PLANS	MECHO SHADES	MANUAL ROLLER SHADES WITH ECOVEIL SCREENS (1% OPEN)		SILVER BIRCH	ADD ALT TO REPLACE ALL WINDOW SHADES PER PLAN
12 3600 - COUNTERTOPS								
12 3600 - COUNTERTOPS	PL-1	PLASTIC LAMINATE - COUNTER	BREAK ROOM	FORMICA			SEA SEALT (9529-43)	

FINISH PLAN GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
3. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
4. REFER TO DETAILS FOR FLOOR/CEILING ASSEMBLIES AND INTERIOR FINISH DETAILS.
5. ALL HARD SURFACE FLOORING SHALL BE SLIP RESISTANT AND MEET THE ***ANSI A326.3*** STANDARD FOR MEASURING THE DYNAMIC COEFFICIENT OF FRICTION (DCOF).
6. ALL FLOORING MATERIALS SHALL COMPLY WITH ***2022 CBC SEC. 804.1.***
7. ALL WALL AND CEILING FINISHES SHALL COMPLY WITH ***2022 CBC TABLE 803.13*** FOR MAXIMUM FLAME SPREAD AND SMOKE DENSITY.
8. PROVIDE ROLLER SHADES AT ALL EXTERIOR WINDOWS AND STOREFRONT EXCEPT AT DOORS. SEE SPECS

FINISH REQUIREMENTS

PER ***2022 CBC 803.13*** INTERIOR WALL AND CEILING FINISH SHALL HAVE A FLAME SPREAD INDEX NOT GREATER THAN THAT SPECIFIED IN TABLE 803.13 FOR THE GROUP AND LOCATION DESIGNATED. REFER TO ***2022 CBC SEC. 803*** FOR ADDITIONAL INFORMATION.

INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY
(CBC 2022 TABLE 803.13)

DEGREE OF FIRE PROTECTION: SPRINKLERED

GROUP	INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS	CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS	ROOMS AND ENCLOSED SPACES
A-1 & A-2	B	B	C
A-3,A-4,A-5	B	B	C
B,E,M,R-1	B	C	C
R-2	C	C	C
R-2.1	B	C	C
R-2.2	C	C	C
R-3, R-3.1	C	C	C
S	C	C	C

CLASSIFICATIONS
- CLASS A:
  - FLAME SPREAD INDEX = 0-25
  - SMOKE DEVELOPED INDEX = 0-450
- CLASS B:
  - FLAME SPREAD INDEX = 26-75
  - SMOKE DEVELOPED INDEX = 0-450
- CLASS C:
  - FLAME SPREAD INDEX = 76-200
  - SMOKE DEVELOPED INDEX = 0-450

SIGNAGE LEGEND

- (A) TACTILE EXIT SIGN READING "EXIT". WHERE MOUNTED ON GLASS, SIZE EXIT SIGN TO MATCH EXTERIOR GLASS MOUNTED ROOM IDENTIFICATION SIGNAGE. ALIGN EXIT SIGN WITH ROOM SINGAGE WHEN MOUNTING.
- (B) ROOM IDENTIFICATION SIGN. WHERE MOUNTED ON GLASS PROVIDE SIZE MATCHED BLANK SIGNAGE PLATE ON BACK SIDE OF GLASS IF NO OTHER SINGAGE IS PROVIDED. CONTENT TBD BY OWNER.
- (D) GEOMETRIC SYMBOL MOUNTED ON DOOR.
- (E) ROOM IDENTIFICATION WITH PICTOGRAM AND INTERNATIONAL SYMBOL OF ACCESSIBILITY.
- (G) INTERNATIONAL SYMBOL OF ACCESS FOR HEARING IMPAIRED, INCLUDE WORDING THAT STATES, "ASSISTIVE LISTENING SYSTEM AVAILABLE."
- (H) OCCUPANT LOAD SIGN THAT STATES "MAXIMUM OCCUPANCY 54 PERSONS"
- (J) SIGN TO READ "EXTERIOR AREA FOR ASSISTED RESCUE". SIGNAGE TO COMPLY WITH CBC 1009.9.
- (K) SIGN TO READ "PLEASE BE AWARE, VIDEO MONITORING IN PROGRESS"

FINISH LEGEND

- EXISTING FLOORING TO REMAIN
- NEW PORCELAIN TILE FLOOR
- NEW LVT FLOOR
- NEW CARPET TILE FLOOR
- NEW WALK OFF MAT CARPET TILE
- STAINLESS STEEL CORNER GUARD
- FLOORING INSTALL DIRECTION

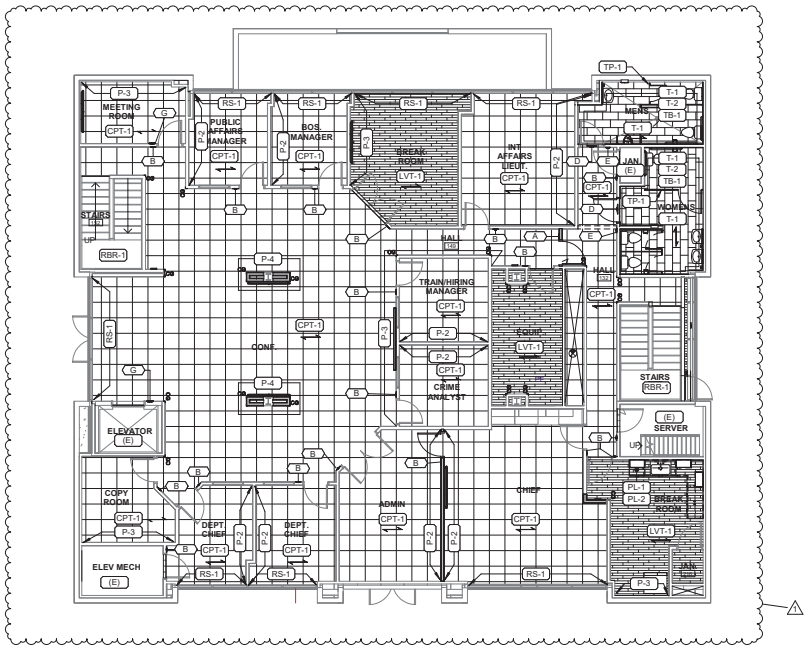
CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE: FIRST FLOOR FINISH PLAN

LICENSED ARCHITECT JOHN RYAN HOWK 91324 C 40884 12-31-25 RENEWAL DATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	1/8" = 1'-0"
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-501



1 SECOND FLOOR FINISH PLAN

A-502 SCALE: 1/8" = 1'-0"

ROOM FINISH SCHEDULE

CSI Spec Section	TAG	DESCRIPTION	LOCATION	MANUFACTURER	PRODUCT SPEC	SIZE	FINISH / COLOR	NOTES
	(E)	EXISTING FINISH TO REMAIN	SEE PLANS					
06 4000- ARCHITECTURAL WOODWORK								
06 4000- ARCHITECTURAL WOODWORK	PL-2	PLASTIC LAMINATE - CABINETS	BREAK ROOM	NEVAMAR			NAVY MATRIX (MR3005T)	
09 3000 - TILING								
09 3000 - TILING	T-1	CERAMIC FLOOR & WALL TILE	RESTROOMS	DALTILE	DIGNITARY	12" X 24"	SUPERIOR TAUPE	
09 3000 - TILING	T-2	ACCENT CERAMIC WALL TILE	RESTROOMS	DALTILE	REVALIA REMIX		RADIANT BLUE FAN	12" ACCENT STRIP STARTING AT 48"
09 3000 - TILING	TB-1	CERAMIC TILE COVE BASE	RESTROOMS	DALTILE	DIGNITARY	6" X 12"	SUPERIOR TAUPE	
09 6500 - RESILIENT FLOORING								
09 6500 - RESILIENT FLOORING	B-1	GENERAL BASE	GENERAL U.O.N.	ROPPE	PINNACLE	4" H (ROLL)	BLACK (100)	
09 6500 - RESILIENT FLOORING	LVT-1	LUXURY VINYL TILE	BREAK ROOM, EQUIP., STORAGE	MILLIKEN	METRO PARK | PIKE	7" x 48"	ANTLER	ASHLAR INSTALLATION
09 6500 - RESILIENT FLOORING	RBR-1	RUBBER STAIR TREADS	STAIRS	ROPPE	RAISED CIRCULAR VANTAGE DESIGN WITH RISER #96		CHARCOAL (123)	
09 6813 - TILE CARPETING								
09 6813 - TILE CARPETING	CPT-1	CARPET TILE	GENERAL CARPET TILE U.O.N.	SHAW CONTRACT	DIFFUSE + DISPERSE | DIFFUSE ECOWORX	24" x 24"	MAGNETIC FIELD	QUARTER TURN INSTALLATION
09 6813 - TILE CARPETING	WOM-1	CARPET TILE	EXITS	SHAW CONTRACT	ALL ACCESS | PACE TILE	24" x 24"	STEP	MONOLITHIC INSTALLATION
09 9123 - INTERIOR PAINTING								
09 9123 - INTERIOR PAINTING	P-1	GENERAL DINING PAINT	GENERAL U.O.N.	SHERMIN WILLIAMS			PASSIVE (SW 7064)	EGGSHELL FINISH
09 9123 - INTERIOR PAINTING	P-2	ACCENT PAINT	PRIVATE OFFICES, PAINTED DOORS AND HM DOOR TRIM	SHERMIN WILLIAMS			STAMPED CONCRETE (SW 7655)	EGGSHELL FINISH
09 9123 - INTERIOR PAINTING	P-3	ACCENT PAINT	SEE PLANS	SHERMIN WILLIAMS			DISTANCE (SW 6243)	EGGSHELL FINISH
09 9123 - INTERIOR PAINTING	P-4	ACCENT PAINT	SEE PLANS	SHERMIN WILLIAMS			IN THE NAVY (SW 9178)	EGGSHELL FINISH
10 2113.19 - PLASTIC TOILET COMPARTMENTS								
10 2113.19 - PLASTIC TOILET COMPARTMENTS	TP-1	CARPET TILE	SECOND LEVEL RESTROOMS	ASI	SOLID PLASTIC (HDPE) PARTITIONS		CHARCOAL (9237)	FLOOR ANCHORED / OVERHEAD BRACED
12 2400 - WINDOW SHADES								
12 2400 - WINDOW SHADES	RS-1	ROLLER SHADE	SEE PLANS	MECHO SHADES	MANUAL ROLLER SHADES WITH ECOVEIL SCREENS (1% OPEN)		SILVER BIRCH	ADD ALT TO REPLACE ALL WINDOW SHADES PER PLAN
12 3600 - COUNTERTOPS								
12 3600 - COUNTERTOPS	PL-1	PLASTIC LAMINATE - COUNTER	BREAK ROOM	FORMICA			SEA SEALT (9529-43)	

FINISH PLAN GENERAL NOTES

1. REFER TO GENERAL NOTES SHEET G-101 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
3. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
4. REFER TO DETAILS FOR FLOOR/CEILING ASSEMBLIES AND INTERIOR FINISH DETAILS.
5. ALL HARD SURFACE FLOORING SHALL BE SLIP RESISTANT AND MEET THE ***ANSI A326.3*** STANDARD FOR MEASURING THE DYNAMIC COEFFICIENT OF FRICTION (DCOF).
6. ALL FLOORING MATERIALS SHALL COMPLY WITH ***2022 CBC SEC. 804.1.***
7. ALL WALL AND CEILING FINISHES SHALL COMPLY WITH ***2022 CBC TABLE 803.13*** FOR MAXIMUM FLAME SPREAD AND SMOKE DENSITY.
8. PROVIDE ROLLER SHADES AT ALL EXTERIOR WINDOWS AND STOREFRONT EXCEPT AT DOORS. SEE SPECS

FINISH REQUIREMENTS

PER ***2022 CBC 803.13*** INTERIOR WALL AND CEILING FINISH SHALL HAVE A FLAME SPREAD INDEX NOT GREATER THAN THAT SPECIFIED IN TABLE 803.13 FOR THE GROUP AND LOCATION DESIGNATED. REFER TO ***2022 CBC SEC. 803*** FOR ADDITIONAL INFORMATION.

INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY
(CBC 2022 TABLE 803.13)

DEGREE OF FIRE PROTECTION: SPRINKLERED

GROUP	INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS	CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS	ROOMS AND ENCLOSED SPACES
A-1 & A-2	B	B	C
A-3,A-4,A-5	B	B	C
B,E,M,R-1	B	C	C
R-2	C	C	C
R-2.1	B	C	C
R-2.2	C	C	C
R-3, R-3.1	C	C	C
S	C	C	C

CLASSIFICATIONS

CLASS A:
- FLAME SPREAD INDEX = 0-25
- SMOKE DEVELOPED INDEX = 0-450

CLASS B:
- FLAME SPREAD INDEX = 26-75
- SMOKE DEVELOPED INDEX = 0-450

CLASS C:
- FLAME SPREAD INDEX = 76-200
- SMOKE DEVELOPED INDEX = 0-450

SIGNAGE LEGEND

A — TACTILE EXIT SIGN READING "EXIT". WHERE MOUNTED ON GLASS, SIZE EXIT SIGN TO MATCH EXTERIOR GLASS MOUNTED ROOM IDENTIFICATION SIGNAGE. ALIGN EXIT SIGN WITH ROOM SINGAGE WHEN MOUNTING.

B — ROOM IDENTIFICATION SIGN. WHERE MOUNTED ON GLASS PROVIDE SIZE MATCHED BLANK SIGNAGE PLATE ON BACK SIDE OF GLASS IF NO OTHER SINGAGE IS PROVIDED. CONTENT TBD BY OWNER.

D — GEOMETRIC SYMBOL MOUNTED ON DOOR.

E — ROOM IDENTIFICATION WITH PICTOGRAM AND INTERNATIONAL SYMBOL OF ACCESSIBILITY.

G — INTERNATIONAL SYMBOL OF ACCESS FOR HEARING IMPAIRED, INCLUDE WORDING THAT STATES, "ASSISTIVE LISTENING SYSTEM AVAILABLE."

H — OCCUPANT LOAD SIGN THAT STATES "MAXIMUM OCCUPANCY 54 PERSONS"

J — SIGN TO READ "EXTERIOR AREA FOR ASSISTED RESCUE". SIGNAGE TO COMPLY WITH CBC 1009.9.

K — SIGN TO READ "PLEASE BE AWARE, VIDEO MONITORING IN PROGRESS"

FINISH LEGEND

- EXISTING FLOORING TO REMAIN
- NEW PORCELAIN TILE FLOOR
- NEW LVT FLOOR
- NEW CARPET TILE FLOOR
- NEW WALK OFF MAT CARPET TILE
- STAINLESS STEEL CORNER GUARD
- FLOORING INSTALL DIRECTION

CITY OF SAN LUIS OBISPO

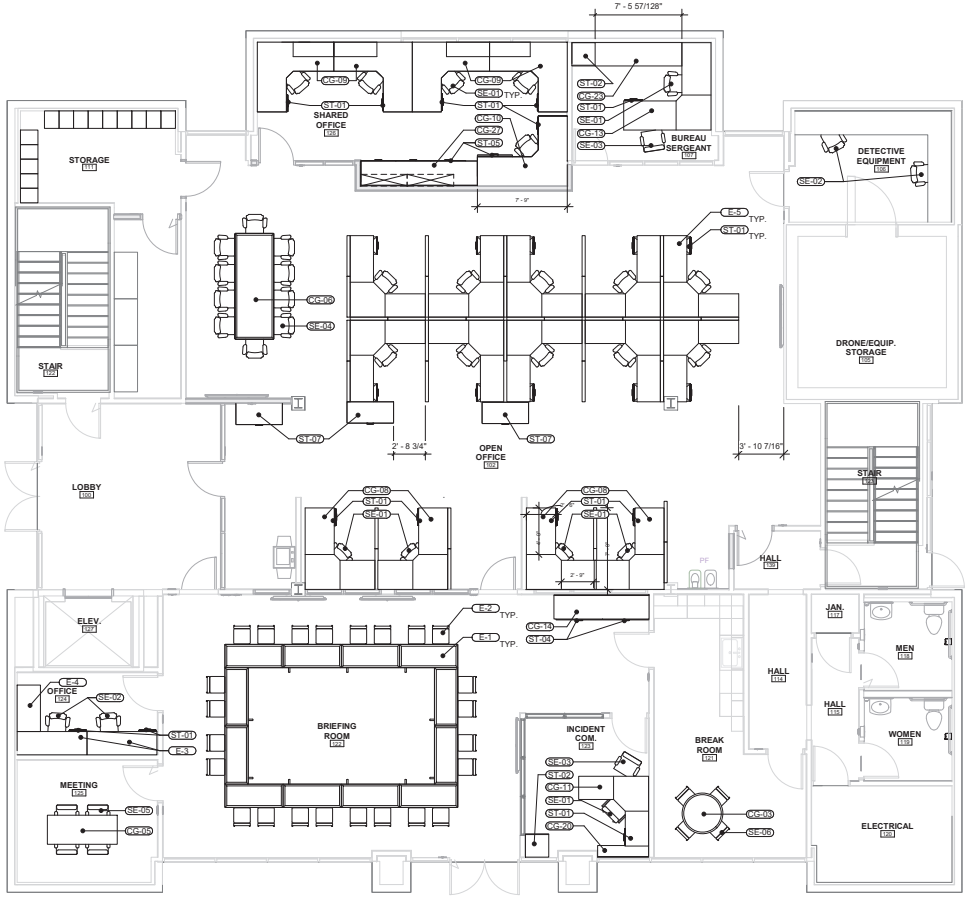
PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: SECOND FLOOR FINISH PLAN

LICENSED ARCHITECT — JOHN HOWK — 9132/L — C 40884 — 10-31-25 — RENEWAL DATE — OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	1/8" = 1'-0"
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-502

SEE SUPPORTING DOCUMENTS FOR FURNITURE SCHEDULE



1 FIRST FLOOR FURNITURE PLAN
A-503 SCALE: 3/16" = 1'-0"

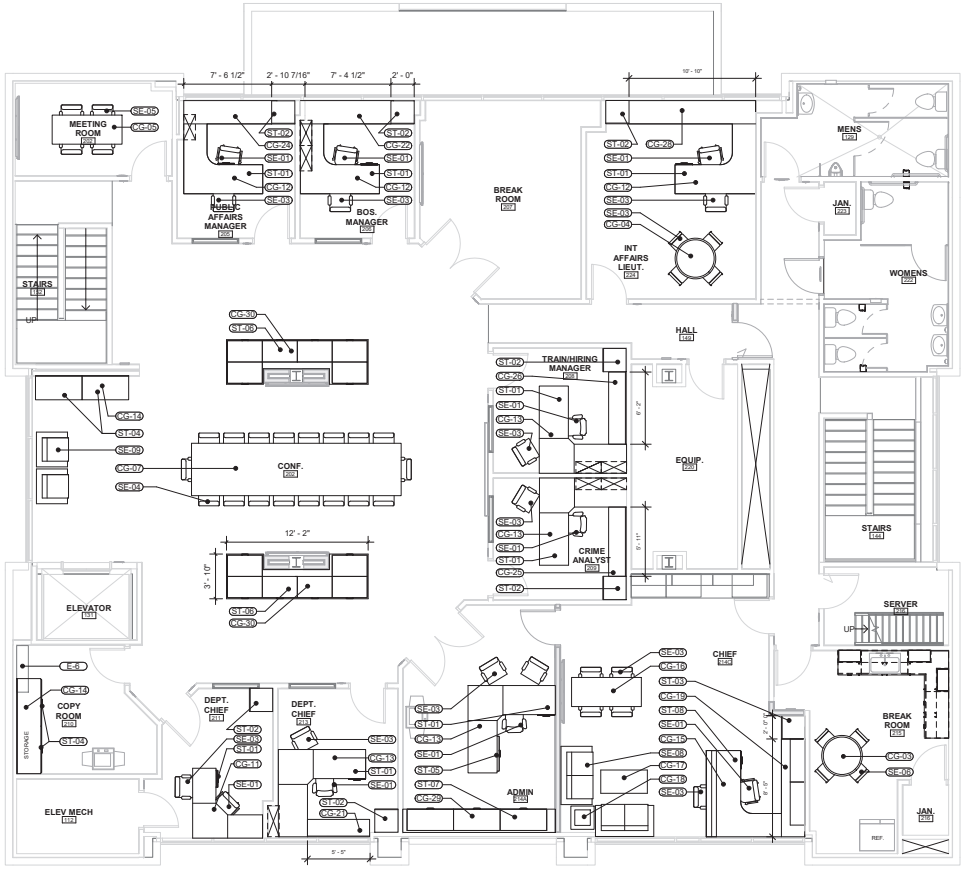
PROJECT TITLE: 1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE: FIRST FLOOR FURNITURE PLAN

LICENSED ARCHITECT
JONATHAN HOVEY
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY: JR
DRAWN BY: JR
CHECKED BY:
APPROVED BY: JH
SCALE: 3/16" = 1'-0"
DATE: 6/20/24
CITY SPECIFICATION NO. 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO. A-503

SEE SUPPORTING DOCUMENTS FOR FURNITURE SCHEDULE



1 SECOND FLOOR FURNITURE PLAN
A-504 SCALE: 3/16" = 1'-0"

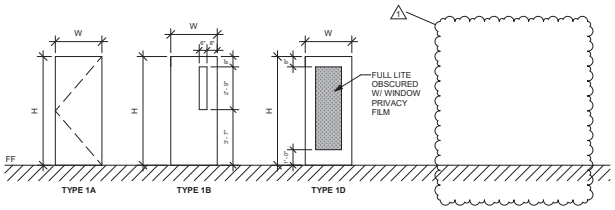
PROJECT TITLE: 1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE: SECOND FLOOR FURNITURE PLAN

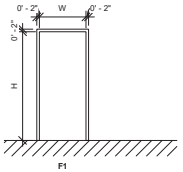
LICENSED ARCHITECT JOHN HOWK C 40884 10-31-25 RENEWAL DATE STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	3/16" = 1'-0"
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-504

DOOR TYPES LEGEND



DOOR TYPES



FRAME TYPES

DOOR SCHEDULE

NO.	SIZE			DOOR		FRAME		HARDWARE GROUP	DETAIL			REMARKS
	WIDTH	HEIGHT	THICKNESS	TYPE	MAT'L	TYPE	MAT'L		SILL	JAMB	HEAD	
100A	3' - 0"	8' - 0"	1 3/4"	1D	ALUM	F1	ALUM	01	1/A-901	6/A-901	6/A-901	1,2,3
111B	3' - 0"	7' - 0"	1 3/4"	1B	WD	F1	HM	02		2/A-901	2/A-901	3
114	3' - 0"	7' - 0"	1 3/4"	1B	WD	F1	HM	03		2/A-901	2/A-901	1,2,3
122A	3' - 0"	7' - 0"	1 3/4"	1D	ALUM	F1	ALUM	04	1/A-901	6/A-901	6/A-901	1,2,3
122B	3' - 0"	7' - 0"	1 3/4"	1D	ALUM	F1	ALUM	05	1/A-901	6/A-901	6/A-901	2,3
126	3' - 0"	7' - 0"	1 3/4"	1A	ALUM	F1	ALUM	06	1/A-901	6/A-901	6/A-901	
214	3' - 0"	7' - 0"	1 3/4"	1B	WD	F1	HM	07				3
224	3' - 0"	7' - 0"	1 3/4"	1B	WD	F1	HM	03		2/A-901	2/A-901	1,2,3
E111A	3' - 0"	8' - 0"	1 3/4"	EXIST	EXIST	EXIST	EXIST					6,8
E222	3' - 0"	8' - 0"	1 3/4"	EXIST	EXIST	EXIST	EXIST					6,7

DOOR GENERAL NOTES

1. REFER TO GENERAL NOTES ON SHEET G-101 FOR ADDITIONAL REQUIREMENTS
2. REFER TO FLOOR PLANS FOR DOOR LOCATIONS.
3. CONTRACTOR TO VERIFY EXACT ROUGH OPENING SIZES WITH DOOR MANUFACTURER SPECIFICATIONS PRIOR TO FABRICATION OF ROUGH OPENINGS.
4. CONTRACTOR TO VERIFY ACTUAL DOOR SIZES TO FIT FINISH OPENING PRIOR TO FABRICATION OF DOOR AND FINISH OPENING.
5. REFER TO DOOR TYPES LEGEND FOR GLAZING.
6. REFER TO T24 REPORT FOR GLAZING ENERGY REQUIREMENTS
7. INSTALL PER MANUFACTURERS WRITTEN INSTRUCTIONS
8. REFER TO FINISH SCHEDULE ON A-501 AND A-502 FOR DOOR AND FRAME PAINT COLORS.

DOOR REMARKS

1. EGRESS DOOR.
2. EQUIPPED W/PANIC HARDWARE.
3. INCLUDES SAFETY GLAZING.
4. FIRE-RATED DOOR ASSEMBLY. VISION PANELS OR LITES TO RECEIVE WIRE GLASS.
5. LOUVERED DOOR.
6. EXISTING DOOR TO CHANGE SWING DIRECTION FROM IN TO OUT, ADJUST AND REINSTALL HARDWARE AS NEEDED.
7. CLOSER BUT NO LATCH, PUSH PLATE PROVIDED.
8. PROVIDE PRIVACY LOCKSET TO MATCH EXISTING.

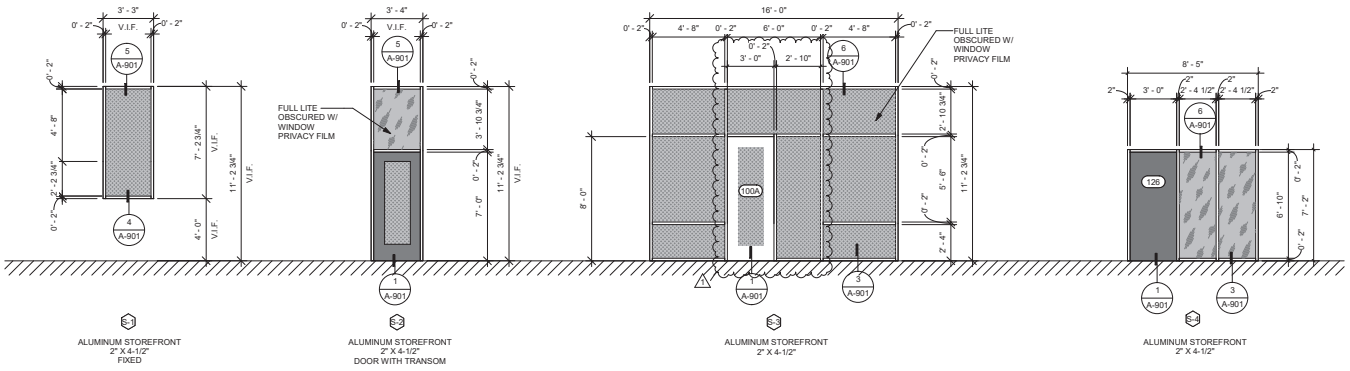
DOOR MATERIAL LEGEND

1.	CL	CHAIN LINK
2.	HM	HOLLOW METAL
3.	MP	METAL PICKET
4.	STL	STEEL
5.	WD	WOOD
6.	T	SAFETY GLAZING

WINDOW GENERAL NOTES

1. REFER TO GENERAL NOTES ON SHEET G-101 FOR ADDITIONAL REQUIREMENTS
2. REFER TO FLOOR PLANS FOR WINDOW LOCATIONS.
3. CONTRACTOR TO VERIFY EXACT ROUGH OPENING SIZES WITH WINDOW MANUFACTURER SPECIFICATIONS PRIOR TO FABRICATION OF ROUGH OPENINGS.
4. CONTRACTOR TO VERIFY ACTUAL WINDOW SIZES TO FIT FINISH OPENING PRIOR TO FABRICATION OF WINDOW AND FINISH OPENING.
5. HEAD HEIGHT MEASURED FROM FF UNLESS NOTED OTHERWISE.
6. REFER TO ENERGY COMPLIANCE REPORTS FOR U-FACTOR, SHGC AND ADDITIONAL WINDOW REQUIREMENTS.
7. ALL EXTERIOR GLAZING IS DOUBLE PANE UNLESS OTHERWISE NOTED.
8. REFER TO STOREFRONT AND WINDOW TYPES LEGEND FOR GLAZING.
9. ALL GLAZING IS TO BE SAFTEY GLAZING (TEMPERED).
10. ALL OPERABLE WINDOWS ARE TO BE PROVIDED WITH LIMITERS RESTRICTING WINDOW PROJECTIONS TO 4".
11. ALL OPERABLE WINDOWS ARE TO BE PROVIDED WITH WINDOW SCREENS.

WINDOW AND STOREFRONT TYPES



GLAZING LEGEND

FLOAT GLASS, TEMPERED

OBSCURED GLASS, TEMPERED INSTALL WINDOW PRIVACY FILM

TYPICAL DETAILS

6 / A-901 TYPICAL JAMB AT ADJACENT STOREFRONT

CITY OF SAN LUIS OBISPO

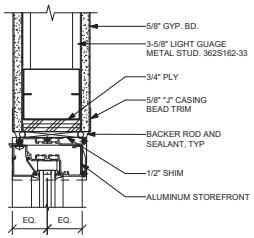
1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

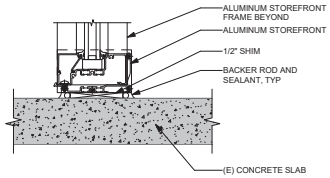
SHEET TITLE: DOOR AND WINDOW SCHEDULES

LICENSED ARCHITECT JOHN RAMIREZ 9/30/24 C 40884 10-31-25 RENEWAL DATE STATE OF CALIFORNIA

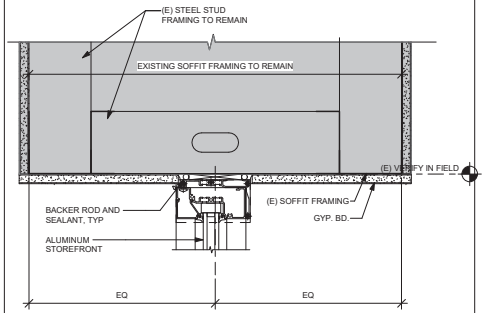
DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-601



6 ALUM. STOREFRONT JAMB/HEAD
A-901 A-901 SCALE: 3" = 1'-0"



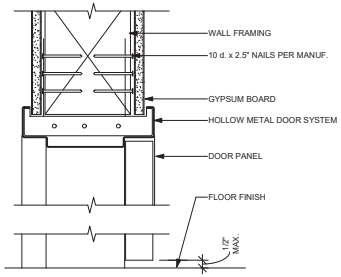
3 ALUM. STOREFRONT SILL @FLOOR
A-901 A-901 SCALE: 3" = 1'-0"



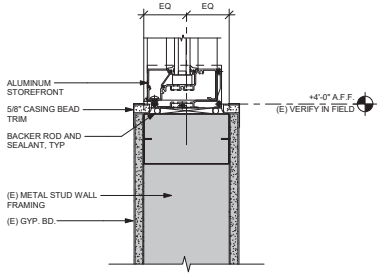
NOTE: SHADED ELEMENTS SHOWN ARE EXISTING TO REMAIN.

5 STOREFRONT HEAD @ (E) SOFFIT
A-901 A-901 SCALE: 3" = 1'-0"

HEAD/JAMB SIMILAR

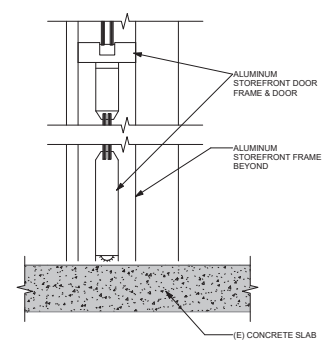


2 INT. DOOR - HEAD/JAMB
A-901 SCALE: 3" = 1'-0"



NOTE: SHADED ELEMENTS SHOWN ARE EXISTING TO REMAIN.

4 STOREFRONT SILL @(E) WALL
A-901 A-901 SCALE: 3" = 1'-0"



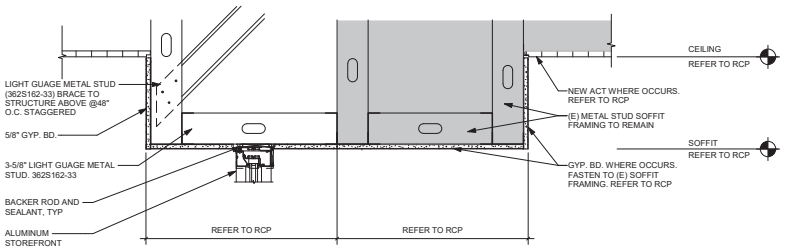
1 INT. STOREFRONT DOOR
A-901 A-901 SCALE: 3" = 1'-0"

PROJECT TITLE:
1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE:
DOOR & WINDOW DETAILS

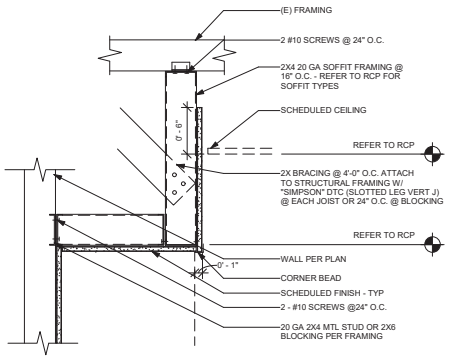
LICENSED ARCHITECT
JOHNSON HOVICK
9/13/24
C 40884
10-31-25
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	3" = 1'-0"
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-901

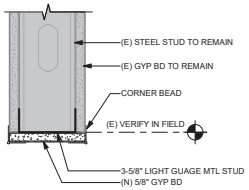


NOTE: SHADED ELEMENTS SHOWN ARE EXISTING TO REMAIN.

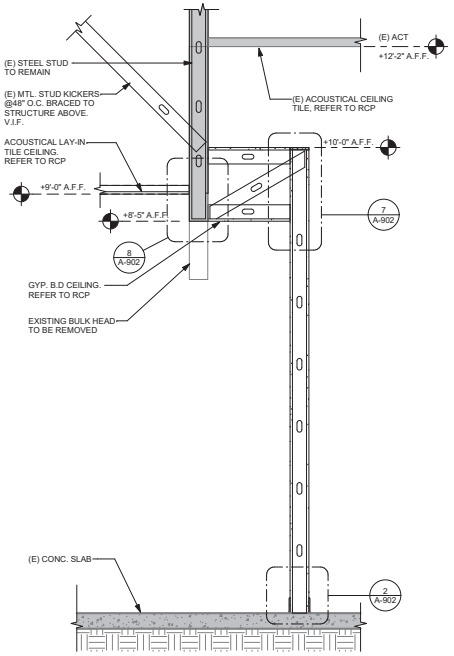
12 SOFFIT DETAIL
SCALE: 1 1/2" = 1'-0"



6 TYP. SOFFIT FRAMING
SCALE: 1 1/2" = 1'-0"

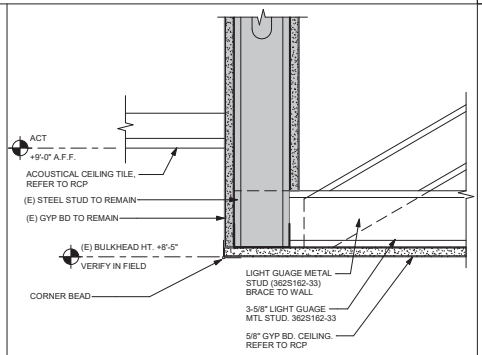


3 TYP. BULKHEAD
SCALE: 3" = 1'-0"



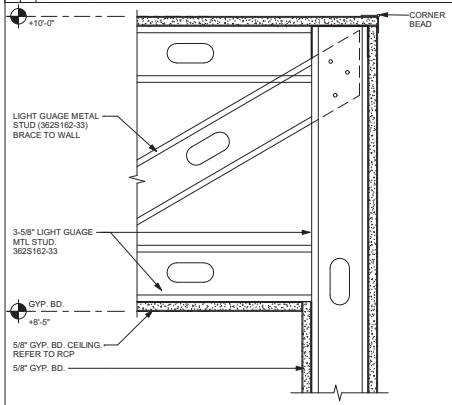
NOTE: SHADED ELEMENTS SHOWN ARE EXISTING TO REMAIN.

10 WALL SECTION - SHARED OFFICE
SCALE: 3/4" = 1'-0"

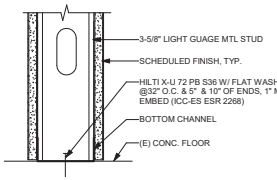


NOTE: SHADED ELEMENTS SHOWN ARE EXISTING TO REMAIN.

8 CEILING FRAMING 2
SCALE: 3" = 1'-0"

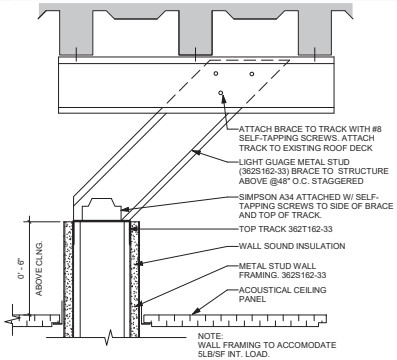


7 CEILING FRAMING 1
SCALE: 3" = 1'-0"



NOTE:
1. WALL FRAMING TO ACCOMODATE 5LB/SF INT. LOAD.
2. LINE CAULK BETWEEN WALL AND RUNNER (TYP)

2 TYP. PARTITION TO FLOOR
SCALE: 3" = 1'-0"



NOTE: SHADED ELEMENTS SHOWN ARE EXISTING TO REMAIN.

1 PARTITION BRACING PARTIAL HT.
SCALE: 3" = 1'-0"

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

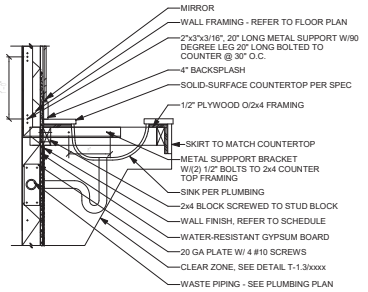
DETAILS

PROJECT TITLE:

SHEET TITLE:

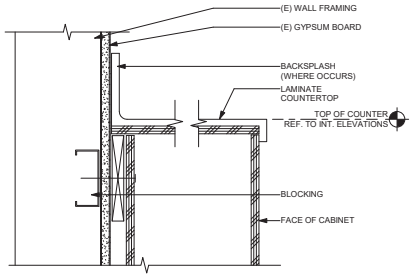
LICENSED ARCHITECT JOHN RAMIREZ 9/30/24 C 40884 10-31-25 RENEWAL DATE STATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-902



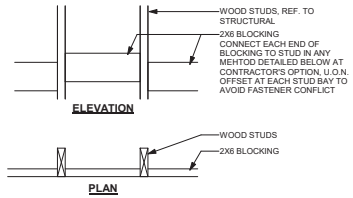
8 LAVATORY COUNTER

A-903 SCALE: 1" = 1'-0"



5 LAMINATE COUNTERTOP

A-903 SCALE: 3" = 1'-0"



USE: #10 WOOD SCREW MIN. TO ATTACH ACCESSORIES TO BLOCKING, U.O.N.
FOR: MIRRORS, FLAT SIGNS, TACKBOARDS, CHALKBOARDS, MARKER BOARDS, BULLETIN BOARDS, FRAMED ARTWORK.

NOTES:
1. DO NOT CUT OR NOTCH STUDS TO INSTALL BLOCKING.
2. VERIFY LENGTH, HEIGHT, QUANTITY, AND LOCATION FOR BLOCKING WITH ARCHITECTURAL DETAILS AND ACCESSORY MANUFACTURER
3. EXTEND BLOCKING TO FIRST STUD PAST END OF ACCESSORY
4. REFER TO STRUCTURAL DETAILS FOR MINIMUM LOAD LIMITS ON BLOCKING

2 TYP. 2X BLOCKING

A-903 SCALE: 1" = 1'-0"

***Kitchen Accessibility Notes**

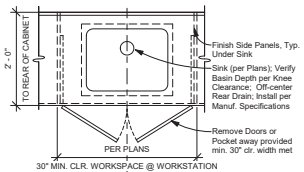
1. The sink and work surface to be separate (30") components.

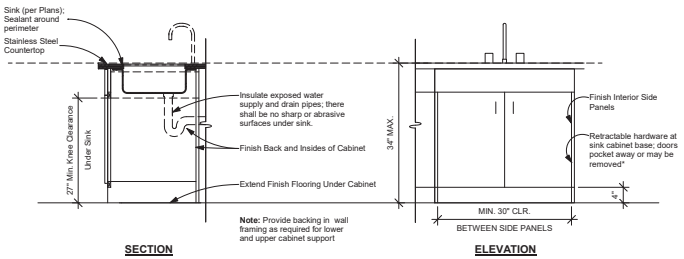
2. Base cabinet doors directly under the counter area, shall be removable without the use of specialized tools or specialized knowledge, or shall pocket away in order to provide clearance for a wheelchair. The finish floor beneath the counter area shall be extended to the rear panel.

3. With doors removed or pocketed away, toe and knee clearance to comply with detail:

4. Faucet controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist.

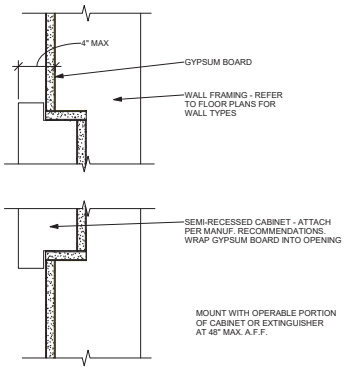
5. The force required to activate controls shall be no greater than 5 pound force (22.2N). Lever-operated, push-type and electronically controlled mechanisms are examples of acceptable designs. Self-closing valves are allowed if the faucet remains open for at least 10 seconds.





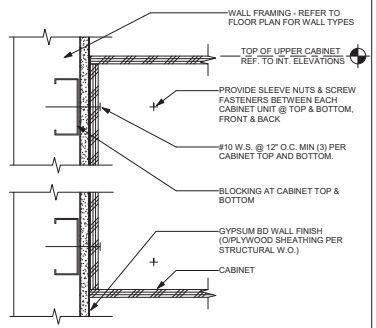
9 ACC. KITCHEN WORKSTATION AND SINK

A-413 A-903 SCALE: 3/4" = 1'-0"



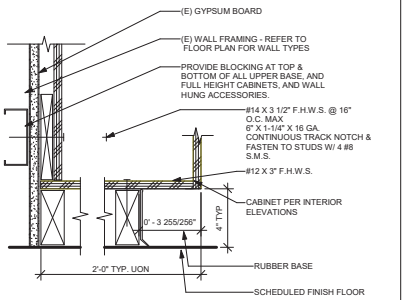
7 FIRE EXTINGUISHER

A-903 SCALE: 3" = 1'-0"



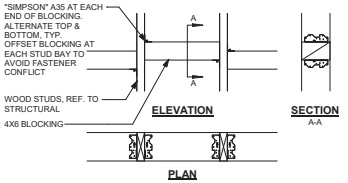
4 BASE CABINET

A-903 SCALE: 3" = 1'-0"



3 BASE CABINET ANCHORAGE

A-903 SCALE: 3" = 1'-0"



USE: #12 WOOD SCREW MIN. TO ATTACH ACCESSORIES TO BLOCKING, U.O.N.
FOR: TOILET & BATH ACCESSORIES, DOOR STOPS, DOOR HOLDERS, CABINETS, DISPLAY CABINETS, TOILET PARTITIONS

USE: # 14 WOOD SCREW MIN. OR 1/4" DIAMETER WOOD SCREW MIN. TO ATTACH ACCESSORIES TO BLOCKING, U.O.N.
FOR: HANDRAILS, GRAB BARS, SHOWER SEATS, SHELF BRACKETS, COUNTERTOP BRACKETS, URINAL SCREENS, WATER HEATER STRAPS, SINK BRACKETS, ETC.

NOTES:
1. DO NOT CUT OR NOTCH STUDS TO INSTALL BLOCKING
2. VERIFY LENGTH, HEIGHT, QUANTITY, AND LOCATION FOR BLOCKING WITH ARCHITECTURAL DETAILS AND ACCESSORY MANUFACTURER
3. EXTEND BLOCKING TO FIRST STUD PAST END OF ACCESSORY
4. REFER TO STRUCTURAL DETAILS FOR MINIMUM LOAD LIMITS ON BLOCKING

1 TYP. 4X BLOCKING

A-903 SCALE: 1" = 1'-0"

CITY OF SAN LUIS OBISPO

11106 WALNUT TENANT IMPROVEMENT

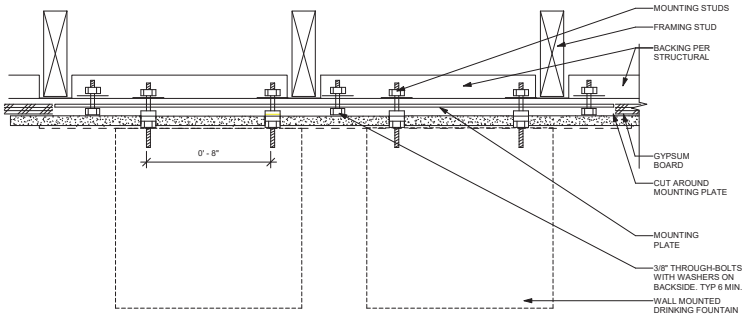
DETAILS

PROJECT TITLE:

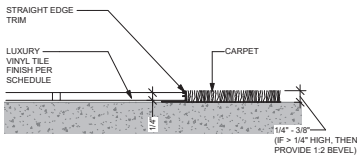
SHEET TITLE:

LICENSED ARCHITECT JOHN RICKEY C 40884 9/30/25 RENEWAL DATE STATE OF CALIFORNIA

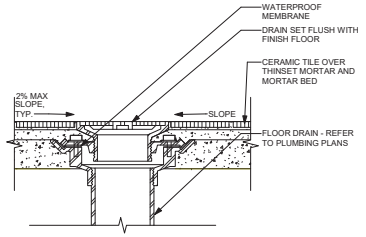
DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-903



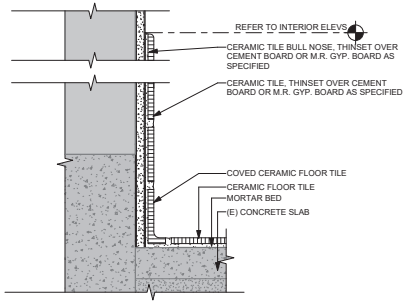
6 DUAL WALL MOUNT FOUNTAIN
A-904 SCALE: 3" = 1'-0"



5 CARPET TO LVT TRANSITION
A-904 SCALE: 6" = 1'-0"

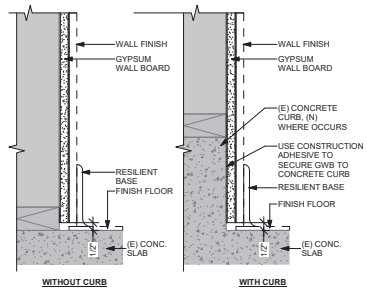


2 FLOOR DRAIN
A-904 SCALE: 3" = 1'-0"



NOTE: SHADED ELEMENTS SHOWN ARE EXISTING TO REMAIN.

4 BASE - INTERIOR - CT
A-904 SCALE: 3" = 1'-0"



1 GWB TERMINATION AND BASE
A-904 SCALE: 3" = 1'-0"

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

DETAILS

SHEET TITLE:

LICENSED ARCHITECT JOHN HOWK 9/13/24 C 40884 10-31-25 RENEWAL DATE OF CALIFORNIA

DESIGNED BY:	JR
DRAWN BY:	JR
CHECKED BY:	
APPROVED BY:	JH
SCALE:	As indicated
DATE:	6/20/24
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	A-904

PLUMBING ABBREVIATIONS

ABV	ABOVE	HD	HEAD
ADA	AMERICANS WITH DISABILITIES ACT	HP	HORSE POWER
AFF	ABOVE FINISHED FLOOR	HZ	HERTZ
AG	ABOVE GRADE	IE	INVERT ELEVATION
AHJ	AUTHORITY HAVING JURISDICTION	IWC	INCHES OF WATER COLUMN
ALUM	ALUMINUM	KW	KILOWATTS
AMB	AMBIENT	LAV	LAVATORY
AMP	AMPERAGE	LBS	POUNDS
ARCH	ARCHITECT, ARCHITECTURAL	LWT	LEAVING WATER TEMPERATURE
BEL	BELOW	MAX	MAXIMUM
BF	BELOW FLOOR	MBH	1000 BRITISH THERMAL UNITS PER HOUR
BG	BELOW GRADE	MCA	MINIMUM CIRCUIT AMPS
BFP	BACKFLOW PREVENTOR	MECH	MECHANICAL
BLDG	BUILDING	MFGR	MANUFACTURE OR MANUFACTURER
BOD	BASIS OF DESIGN	MIN	MINIMUM
BTUH	BRITISH THERMAL UNIT PER HOUR	MU	MAKE-UP
CA	COMBUSTION AIR	(N)	NEW
CD	CONDENSATE DRAIN	NOM	NOMINAL
CFH	CUBIC FEET PER HOUR	NPS	NOMINAL PIPE SIZE
CONN	CONNECTION	NTS	NOT TO SCALE
CONT	CONTINUATION	OPT	OPERATING
CI	CAST IRON	OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
CP	CHROME PLATED	PD	PRESSURE DROP
DFU	DRAINAGE FIXTURE UNITS	PH	PHASE
DN	DOWN	PSI	POUNDS PER SQUARE INCH
DSA	DIVISION OF THE STATE ARCHITECT	PW	PROCESS WASTE
(E)	EXISTING	RM	ROOM
EC	EVAPORATIVE COOLER	RPM	REVOLUTIONS PER MINUTE
EFF	EFFICIENCY	SDL	STORM DRAIN LEADER
ELEC	ELECTRICAL	SDO	STORM DRAIN OVERFLOW
EQPT	EQUIPMENT	SHT	SHEET
EWT	ENTERING WATER TEMPERATURE	SOV	SHUT OFF VALVE
FA	FROM ABOVE	SS	STAINLESS STEEL
FC	FLEXIBLE CONNECTION	TEMP	TEMPORARY, TEMPERATURE
FLA	FULL LOAD AMPS	TYP	TYPICAL
FLR	FLOOR	UON	UNLESS OTHERWISE NOTED
FPS	FEET PER SECOND	UTR	UP TO OR UP THROUGH ROOF
FR	FROM	V	VENT
FT	FLUSH TANK	VAC	VACUUM
FV	FLUSH VALVE	VTR	VENT THROUGH ROOF
GA	GAGE OR GAUGE	WC	WATER CLOSET
GALV	GALVANIZED	W	WASTE
GPC	GALLONS PER CYCLE	W/	WITH
GPF	GALLONS PER FLUSH	W/O	WITHOUT
GPM	GALLONS PER MINUTE	WSFU	WATER SUPPLY FIXTURE UNIT
GYP	GYPSUM	WT	WEIGHT EXPRESSED IN POUNDS
GW	GREASE WASTE		

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
		BALL VALVE
	BFV	BUTTERFLY VALVE
		CAP
		CHECKVALVE
	COTG	CLEAN OUT THROUGH GRADE
	DIA	DIAMETER
		ELECTRICAL PHASE
	FCO	FLOOR CLEAN OUT
		SHUT OFF VALVE IN PIPE DROP OR PIPE RISER
	YB	SHUT OFF VALVE IN YARD BOX
		STRAINER
	TPV	TRAP PRIMER VALVE
		UNION
		PIPE DOWN
		PIPE UP
		PIPE TEE DOWN
		PIPE INTERSECTION
		PLUG VALVE ELEVATION VIEW
	PV	PLUG VALVE PLAN VIEW
	POC OR POD	POINT OF CONNECTION OR POINT OF DISCONNECT
	PRV	PRESSURE REDUCING OR REGULATOR VALVE
WCO	WCO	WALL CLEANOUT
CW	CW	COLD WATER
CD	CD	CONDENSATE DRAIN
HW	HW	HOT WATER
V	V	SANITARY VENT
TP TP	TP	TRAP PRIMER
	S/W	WASTE (ABOVE GRADE)
	S/W	WASTE (BELOW GRADE)
	S/W	EXISTING WASTE

MECHANICAL ABBREVIATIONS

AC	AIR CONDITION, AIR CONDITIONING, AIR CONDITIONED	HP	HORSE POWER
ABV	ABOVE	HVI	HOME VENTILATING INSTITUTE
AFF	ABOVE FINISHED FLOOR	HZ	HERTZ
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	IDU	INDOOR UNIT
AHJ	AUTHORITY HAVING JURISDICTION	IWC	INCHES OF WATER COLUMN
AHU	AIR HANDLING UNIT	KW	KILOWATT
ALUM	ALUMINUM	LBS	POUNDS
AMCA	AIR MOVEMENT AND CONTROL ASSOCIATION	LWT	LEAVING WATER TEMPERATURE
AMB	AMBIENT	MBH	1000 BRITISH THERMAL UNITS PER HOUR
AP	ACCESS PANEL	MCA	MINIMUM CIRCUIT AMPS
ARCH	ARCHITECT, ARCHITECTURAL	MFGR	MANUFACTURE OR MANUFACTURER
ARI	AMERICAN REFRIGERATION INSTITUTE	MIN	MINIMUM
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS	MUA	MAKE-UP AIR
BDD	BACK DRAFT DAMPER	(N)	NEW
BOD	BASIS OF DESIGN	NL	NOT LISTED
BEL	BELOW	NOM	NOMINAL
BHP	BREAK HORSE POWER	NTS	NOT TO SCALE
BLDG	BUILDING	OA	OUTSIDE AIR
BTUH	BRITISH THERMAL UNIT PER HOUR	OAI	OUTSIDE AIR INTAKE
CA	COMBUSTION AIR	OBD	OPPOSED BLADE DAMPER
CD	CONDENSATE DRAIN	ODU	OUTDOOR UNIT
CFD	CEILING FIRE DAMPER	OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
CFM	CUBIC FEET PER MINUTE	PD	PRESSURE DROP
CONT	CONTINUATION	PSI	POUNDS PER SQUARE INCH
CSD	CEILING SMOKE DAMPER	RA	RETURN AIR
DB	DRY BULB TEMPERATURE	REFRIG	REFRIGERANT, REFRIGERATION
DN	DOWN	RM	ROOM
DSA	DIVISION OF THE STATE ARCHITECT	RPM	REVOLUTIONS PER MINUTE
DTR	DOWN THROUGH ROOF	SA	SUPPLY AIR
(E)	EXISTING	SEER	SEASONAL ENERGY EFFICIENCY RATION
EA	EXHAUST AIR	SHT	SHEET
EC	EVAPORATIVE COOLER	SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
EDB	ENTERING DRY BULB TEMPERATURE	SOV	SHUT OFF VALVE
EER	ENERGY EFFICIENCY RATIO	SP	STATIC PRESSURE
EFF	EFFICIENCY	SS	STAINLESS STEEL
ELEC	ELECTRICAL	SSE	STEADY STATE EFFICIENCY
ESP	EXTERNAL STATIC PRESSURE	SST	SATURATED SUCTION TEMPERATURE
EWB	ENTERING WET BULB	TEMP	TEMPORARY, TEMPERATURE
EWT	ENTERING WATER TEMPERATURE	TSP	TOTAL STATIC PRESSURE
FA	FROM ABOVE	TYP	TYPICAL
FC	FLEXIBLE CONNECTION	TXV	THERMAL EXPANSION VALVE
FD	FIRE DAMPER	UON	UNLESS OTHERWISE NOTED
FLA	FULL LOAD AMPS	UTR	UP TO OR UP THROUGH ROOF
FPM	FEET PER MINUTE	VD	VOLUME DAMPER
FSC	FAN SPEED CONTROLLER	VEX	VEHICLE EXHAUST SYSTEM
FSD	FIRE/SMOKE DAMPER	VRF	VARIABLE REFRIGERANT VOLUME
GA	GAGE, GAUGE	WB	WET BULB TEMPERATURE
GALV	GALVANIZED	WC	WATER COLUMN
GPM	GALLONS PER MINUTE	WG	WATER GAUGE
GYP	GYPSUM	WT	WEIGHT EXPRESSED IN POUNDS
HD	HEAD		

MECHANICAL LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
Ø	DIA	DIAMETER
		ELECTRICAL PHASE
		CEILING MOUNTED SUPPLY OR OUTSIDE AIR DIFFUSER
		CEILING MOUNTED RETURN AIR GRILLE
		CEILING MOUNTED EXHAUST AIR GRILLE
		SIDEWALL MOUNTED SUPPLY AIR DIFFUSER, RETURN AIR GRILLE, LOUVER
	24X12, 24X12 FO	RECTANGULAR, FLAT OVAL DUCT
	24X12L, 12ØL	LINED DUCT
		RECTANGULAR SUPPLY / OA, RETURN, EXHAUST / RELIEF DUCT PASSING THROUGH PLAIN OF VIEW
		RECTANGULAR SUPPLY / OA, RETURN, EXHAUST / RELIEF DUCT TURNING DOWN
	12Ø	ROUND DUCT
		ROUND DUCT TURNING DOWN, ROUND DUCT TURNING UP
		90° ELBOW WITH TURNING VAINS
		FLEXIBLE DUCT 60" MAX LENGTH
	FC	FLEXIBLE CONNECTION
	VD	MANUAL VOLUME DAMPER
	CVD	CABLE OPERATED VOLUME DAMPER
		ACCESS CLEARANCE
	POC OR POD	POINT OF CONNECTION, POINT OF DISCONNECTION
		ITEMS RELATED TO THE MECHANICAL SYSTEM TO BE REMOVED

SHEET INDEX

SHEET NUMBER	SHEET TITLE
MP-000	MECHANICAL & PLUMBING GENERAL
MP-001	MECHANICAL & PLUMBING SCHEDULES
MP-002	MECHANICAL & PLUMBING DETAILS
EC-000	ENERGY COMPLIANCE DOCUMENTATION
MPD-101	MECHANICAL & PLUMBING DEMOLITION FIRST FLOOR PLAN
MPD-102	MECHANICAL & PLUMBING DEMOLITION SECOND FLOOR PLAN
MP-200	MECHANICAL & PLUMBING FIRST FLOOR PLAN
MP-300	MECHANICAL & PLUMBING SECOND FLOOR PLAN

PROJECT TEAM LIST

TITLE	NAME	DESK NUMBER	EMAIL ADDRESS
PROJECT MANAGER	DENVER STANGER	805.540.5388	DSTANGER@3CENG.COM
MECHANICAL DESIGNER	DENVER STANGER	805.540.5388	DSTANGER@3CENG.COM
PLUMBING DESIGNER	RANDY CARMINATI	805.540.3363 EXT 319	RCARMINATI@3CENG.COM

MECHANICAL GENERAL NOTES

1 COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING CODES:

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC): PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
2022 CALIFORNIA BUILDING CODE (CBC): PART 2, TITLE 24 CCR
2022 CALIFORNIA ELECTRICAL CODE (CEC): PART 3, TITLE 24 CCR
2022 CALIFORNIA MECHANICAL CODE (CMC): PART 4, TITLE 24 CCR
2022 CALIFORNIA PLUMBING CODE (CPC): PART 5, TITLE 24 CCR
2022 CALIFORNIA ENERGY CODE (CENC): PART 6, TITLE 24 CCR
2022 CALIFORNIA FIRE CODE (CFC): PART 9, TITLE 24 CCR
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CAL GREEN): PART 11, TITLE 24 CCR

REPORT DEFICIENCIES WITHIN THIRTY (30) DAYS UPON AUTHORIZATION TO PROCEED.

2 THESE DRAWINGS ARE A GENERAL GRAPHIC PRESENTATION OF THE WORK. DUCTWORK, PIPING, AND EQUIPMENT, AS SHOWN, ARE SCHEMATIC. FABRICATE AND INSTALL BASED ON ACTUAL FIELD MEASUREMENT. COORDINATE WITH OTHER TRADES. ADHERE TO LOCATIONS AS CLOSELY AS POSSIBLE. VARY RUNS OR SHAPE OF DUCTWORK AS REQUIRED TO MEET STRUCTURAL AND OTHER INTERFERENCES AS REQUIRED BY THE ARCHITECT. PROVIDE A COMPLETE SET OF SHOP DRAWINGS REFLECTING ACTUAL DIMENSIONS, ACCESS REQUIREMENTS, AND DETAILS BASED UPON THE ACTUAL EQUIPMENT PROCURED. MAINTAIN AN UP TO DATE SET OF AS-BUILT DRAWINGS AT THE JOB SITE.

3 THE MECHANICAL CONTRACTOR SHALL COORDINATE ALL ITEMS RELATED TO MECHANICAL SYSTEMS WITH THE WORK OF OTHER TRADES BEFORE PROCEEDING WITH PROCURING OR FABRICATION OF EQUIPMENT, DUCTWORK, PIPING ETC. ITEMS TO BE COORDINATED SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

GRILLES, REGISTERS AND DIFFUSERS SHALL BE COORDINATED WITH THE REFLECTED CEILING PLAN.

DUCTWORK LOCATIONS AND POTENTIAL INTERFERENCES WITH STRUCTURAL MEMBERS, FRAMING, FIRE SPRINKLER LINES, PLUMBING WASTE LINES, CABLE TRAYS AND CONDUIT.

ACCESS TO VOLUME DAMPERS FOR BALANCING. ACCESS TO ALL EQUIPMENT, AS WELL AS PLATFORM AND CURB LOCATIONS.

4 REVIEW ALL DRAWINGS AND SPECIFICATIONS INCLUDING ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL. ANY QUESTIONS SHALL BE BROUGHT UP, IN WRITING, TO THE ATTENTION OF THE ENGINEER BEFORE THE START OF CONSTRUCTION.

5 REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF DIFFUSERS, REGISTERS, GRILLES, AND ACCESS PANELS.

6 ALL DUCT DIMENSIONS, AS SHOWN ON MECHANICAL DRAWINGS ARE CLEAR INSIDE DIMENSIONS. INCREASE OUTER DUCT DIMENSION AS REQUIRED TO ACCOUNT FOR THE THICKNESS OF INTERNAL LINING WHERE APPLICABLE.

7 INSULATION AND FLEXIBLE DUCT SHALL COMPLY WITH STATE FIRE MARSHALL CRITERIA AND SHALL NOT EXCEED FLAME SPREAD OF 25 AND SMOKE DEVELOPED OF 50 PER ASTM-84, NFPA-223, AND UL 723.

8 INSULATE PIPING AND DUCTWORK IN ACCORDANCE TO THE GOVERNING CODES.

9 ALL SQUARE ELBOWS IN SUPPLY DUCTWORK SHALL HAVE TURNING VANES. PROVIDE MANUAL VOLUME DAMPER AT EACH BRANCH DUCT TAKE-OFF SERVING EACH AIR TERMINAL DEVICE. PROVIDE BALANCING DAMPERS FOR EACH MAIN DUCT TAKE-OFF IN ACCORDANCE TO SMACNA IN ORDER TO ASSURE A COMPLETELY BALANCED SYSTEM.

10 MATERIALS EXPOSED WITHIN ANY SPACE BEING USED AS AN AIR PLENUM SHALL BE NON COMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX NOT GREATER THAN 25 AND A SMOKE DEVELOPED INDEX NOT GREATER THAN 50, WHEN TESTED AS A COMPOSITE PRODUCT IN ACCORDANCE WITH ONE OF THE FOLLOWING TEST METHODS: NFPA 255, METHOD OF TEST OF SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS, ASTM E84, SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS, OR UL 723, TEST FOR SURFACE BURNING CHARACTERISTIC OF BUILDING MATERIALS.

PLUMBING GENERAL NOTES

1 COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING CODES:

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC): PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
2022 CALIFORNIA BUILDING CODE (CBC): PART 2, TITLE 24 CCR
2022 CALIFORNIA ELECTRICAL CODE (CEC): PART 3, TITLE 24 CCR
2022 CALIFORNIA MECHANICAL CODE (CMC): PART 4, TITLE 24 CCR
2022 CALIFORNIA PLUMBING CODE (CPC): PART 5, TITLE 24 CCR
2022 CALIFORNIA ENERGY CODE (CENC): PART 6, TITLE 24 CCR
2022 CALIFORNIA FIRE CODE (CFC): PART 9, TITLE 24 CCR
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CAL GREEN): PART 11, TITLE 24 CCR

REPORT DEFICIENCIES WITHIN THIRTY (30) DAYS UPON AUTHORIZATION TO PROCEED.

2 NO PLUMBING SHALL BE INSTALLED UNTIL ALL REQUIRED PLUMBING PLAN CHECK PERMITS AND APPROVALS HAVE BEEN OBTAINED FROM ALL REQUIRED AGENCIES.

3 LAVATORY FAUCETS, SINK FAUCETS (NOT INCLUDING SERVICE SINK FAUCETS OR FAUCETS DESIGNATED AS INSTITUTIONAL) SHALL MEET THE FLOW REQUIREMENTS OUTLINED IN THE APPLIANCE EFFICIENCY STANDARDS.

4 COORDINATE WITH THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF PLUMBING FIXTURES AND DRAINS.

5 PROVIDE ALL TAILPIECES, TRAPS, STOPS, AND SUPPLY PIPES TO LAVATORIES DESIGNED AS ACCESSIBLE, WITH PREFORMED INSULATION JACKET.

6 CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF WALLS, ROOFS, FOOTINGS, FLOORS, INCLUDING ALL SAW CUTTING AND CORE DRILLING. COORDINATE ALL SAW CUTTING AND CORE DRILLING WITH STRUCTURAL DRAWINGS. ANY CUTTING AND DRILLING REQUIRED OF STRUCTURAL ELEMENTS THAT IS NOT SPECIFICALLY SHOWN ON THE PLANS SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION PRIOR TO CUTTING AND DRILLING. CONTRACTOR SHALL SUBMIT PROPOSED LOCATION AND SIZES OF SUCH CUTTING AND DRILLING FOR THE ARCHITECTS AND STRUCTURAL ENGINEERS APPROVAL.

7 COORDINATE INSTALLATION OF ALL EQUIPMENT AND PIPING WITH OTHER TRADES PRIOR TO INSULATION. ENSURE THAT ALL CONTROL DEVICES, SHUT-OFF VALVES, ETC. ARE ACCESSIBLE FOR MAINTENANCE. WHERE ACCESS PANELS IN FINISHED SPACES, OTHER THAN THAT SHOWN, CONTRACTOR SHALL PROVIDE AND COORDINATE EXACT LOCATION OF PANELS WITH ARCHITECT PRIOR TO INSTALLATION.

8 ANY STRUCTURAL FIREPROOFING DAMAGED DURING INSTALLATION OF PLUMBING EQUIPMENT, PIPING, ETC. SHALL BE REPAIRED AT NO COST TO THE OWNER. REPAIRS SHALL BE AS DIRECTED BY THE ARCHITECT.

9 NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE PER 2022 CPC 609.10. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY OR, IN CASE NO METHOD IS PRESCRIBED BY IT, THE FOLLOWING:

A) THE PIPE SYSTEM SHALL BE FLUSHED WITH CLEAN, POTABLE WATER UNTIL POTABLE WATER APPEARS AT THE POINTS OF OUTLET.

B) THE SYSTEM OR PARTS THEREOF SHALL BE FILLED WITH A WATER-CHLORINE SOLUTION CONTAINING NOT LESS THAN 50 PARTS PER MILLION OF CHLORINE, AND THE SYSTEM OR PART THEREOF SHALL BE VALVED-OFF AND ALLOWED TO STAND FOR 24 HOURS; OR, THE SYSTEM OF PART THEREOF SHALL BE FILLED WITH A WATER-CHLORINE SOLUTION CONTAINING NOT LESS THAN 200 PARTS PER MILLION OF CHLORINE AND ALLOWED TO STAND FOR 3 HOURS.

C) FOLLOWING THE ALLOWED STANDING TIME, THE SYSTEM SHALL BE FLUSHED WITH CLEAN, POTABLE WATER UNTIL THE CHLORINE RESIDUAL IN THE WATER COMING FROM THE SYSTEM DOES NOT EXCEED THE CHLORINE RESIDUAL IN THE FLUSHING WATER.

D) THE PROCEDURE SHALL BE REPEATED WHERE IT IS SHOWN BY BACTERIOLOGICAL EXAMINATION MADE BY AN APPROVED AGENCY THAT CONTAMINATION PERSISTS IN THE SYSTEM.

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CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE: MECHANICAL & PLUMBING GENERAL

M 34088
EXP. 6/30/26
MECHANICAL
STATE OF CALIFORNIA

DESIGNED BY: DS
DRAWN BY: KH
CHECKED BY: BS
APPROVED BY:
SCALE: AS INDICATED
DATE: 05/14/2024
CITY SPECIFICATION NO.: 2000577-04
PLAN FILE NO. / LOCATION:
SHEET NO.: MP-000

S:\Shared\Jobs\ENG Projects\SLO PD North Building TI\Engineering\SLO PD North Building TI Mechanical and Plumbing Lead Sheets.dwg kharjiev Sep 13,2024-9:57am

VENTILATION CALCULATION

System Tag	Room Name	Room Area (SQFT)	Table 120.1-A Occupancy Category	Table 120.1-A Area Outdoor Air Rate (cfm/sqft)	CFM Requirement: 120.1(c)3
(E)AC Unit That Serves the First Floor	Bureau Sargeant 107	149	Office Buildings - Office space	0.15	23
	Shared Office 126	354	Office Buildings - Office space	0.15	54
	Open Office 102	1848	Office Buildings - Office space	0.15	278
	North Stair 1F	151	General - Corridors	0.15	23
	South Stair 1F	151	General - Corridors	0.15	23
	Hall (Adjacent to Stairs)	43	General - Corridors	0.15	7
	Lobby 100	260	General - Corridors	0.15	39
	Hall 114/115	131	General - Corridors	0.15	20
	Break Room 121	240	Office Buildings - Breakrooms	0.5	120
	Briefing Room 122	806	General - Conference/meeting	0.5	403
	Incident Com. 123	125	Office Buildings - Office space	0.15	19
	Dispatch 124	86	Office Buildings - Office space	0.15	13
	Meeting 125	126	General - Conference/meeting	0.5	63
				TOTAL	**1085**
(E)AC Unit That Serves the Second floor	Int Affairs Lieut. 224	266	Office Buildings - Office space	0.15	40
	Break Room 207	244	Office Buildings - Breakrooms	0.5	122
	BOS. Manager 208	129	Office Buildings - Office space	0.15	20
	Public Affairs Manager 205	134	Office Buildings - Office space	0.15	21
	Meeting Room 202	133	General - Conference/meeting	0.5	67
	North Stair 2F	154	General - Corridors	0.15	24
	South Stairs and Hallway 2F	457	General - Corridors	0.15	69
	Train/Hiring Manager 208	132	Office Buildings - Office space	0.15	20
	Crime Analyst 209	129	Office Buildings - Office space	0.15	20
	Conf. 202	679	General - Conference/meeting	0.5	340
	Conf. 202 Hall/Flex Spaces	646	General - Corridors	0.15	97
	Break Room 215	262	Office Buildings - Breakrooms	0.5	131
	Chief 214C	452	Office Buildings - Office space	0.15	68
	Admin 214A	265	Office Buildings - Office space	0.15	40
	Dept. Chief 213	155	Office Buildings - Office space	0.15	24
	Dept. Chief 211	139	Office Buildings - Office space	0.15	21
				TOTAL	**1124**

NOTES: AFTER COMPLETION OF CONSTRUCTION AND PRIOR TO OCCUPANCY THE OUTSIDE AIR INTAKE AT THE (E) AC UNITS SHALL BE BALANCED AS FOLLOWS:

FIRST FLOOR AC UNIT: BALANCE OUTSIDE AIR INTAKE TO 1100 CFM

SECOND FLOOR AC UNIT: BALANCE OUTSIDE AIR INTAKE TO 1125 CFM

DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE

TAG	MAKE	NOM TONS	SENSIBLE COOLING	REFRIGERANT	AHRI PERFORMANCE						INDOOR UNIT									OUTDOOR UNIT						REMARKS SEE BELOW
					COOLING			HEATING																			
					BTUH	SEER2	EER2	BTUH AT 47°F	BTUH AT 17°F	HSPF2	MODEL	INSTALLATION TYPE	POWER V/ϕ/HZ	MCA	MOCP	CFM	WATTS [HP]	OPERATING WEIGHT LBS	INSTALLATION DETAIL	MODEL	POWER V/ϕ/HZ	MCA	MOCP	OPERATING WEIGHT LBS	INSTALLATION DETAIL	
DS 1	DAIKIN	1.5	13,700	R-410A	18,000	16.9	11.9	20,000	13,800	7.6	FAQ18TAVJU	HIGH WALL	208/1/60	0.5	15	500	43	35	2/MP-002	RZQ18TBVJUA	208/1/60	16.5	20	175	1/MP-002	C1

GENERAL NOTES APPLICABLE TO ALL UNITS:
A. DISCONNECT PROVIDED BY ELECTRICAL CONTRACTOR.
B. UNIT SHALL BE CONFIGURED FOR COOLING ONLY.
C. SIZE REFRIGERATION LINES PER THE MANUFACTURERS REQUIREMENTS FOR TOTAL DEVELOPED LINE LENGTH.
D. PROVIDE WITH MANUFACTURERS CONDENSER WALL MOUNTING BRACKET.

CONTROL NOTES:
C1. PROVIDE WITH MANUFACTURERS MODEL BRC1E73 WIRED CONTROLLER.

COMMERCIAL GRILLE, REGISTER, DIFFUSER, LOUVER SCHEDULE

FD = FIRE DAMPER
FSD = FIRE/SMOKE DAMPER
OAI = OUTSIDE AIR INTAKE
X"Ø = INLET SIZE (IF APPLICABLE)

CEILING SUPPLY DEFLECTION LEGEND (EXCEPT FOR 4-WAY DEFLECTION, SHADING INDICATES ACTIVE SECTION OF DIFFUSER)

4-WAY | 3-WAY | 2-WAY CORNER | 2-WAY OPPOSITE | 1-WAY

TAG	TYPE	MAKE	MODEL	BORDER TYPE		CONSTRUCTION	FINISH	IMAGE	REMARKS	INSTALLATION DETAIL
				GYP BOARD CEILING OR WALL	LAY-IN CEILING					
S1	CEILING SUPPLY	TITUS	TDC	1	3	STEEL	WHITE		MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND FRAMING CONTRACTOR TO INSURE OPENINGS IN HARD CEILINGS AND WALLS ARE CORRECTLY SIZED TO ACCOMMODATE THE SPECIFIED BORDER TYPE. NO EXCEPTIONS	3/MP-002
R1 E1	CEILING OR SIDEWALL RETURN AND EXHAUST	TITUS	350RL	1	3	STEEL	WHITE		MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND FRAMING CONTRACTOR TO INSURE OPENINGS IN HARD CEILINGS AND WALLS ARE CORRECTLY SIZED TO ACCOMMODATE THE SPECIFIED BORDER TYPE. NO EXCEPTIONS	SEE 3/MP-002 FOR DUCTED EXHAUST AIR GRILLES SEE 4/MP-002 FOR PLENUM RETURN AIR GRILLES

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	BRANCH SIZE				ELECTRICAL	MODEL & FITTINGS
		W	V	CW	HW		
DF-1	DRINKING FOUNTAIN - ACCESSIBLE	2"	1-1/2"	1/2"	NA	NA	DUAL HEIGHT DRINKING FOUNTAIN WITH BOTTLE FILLER, HAWS #1117LN-1920, IN WALL MOUNTED, STEEL MOUNTING PLATE, STAINLESS STEEL BOTTLE FILLER, PROVIDE WITH STOPS AND SUPPLIES, INSTALL PER ACCESSIBLE FACILITY REQUIREMENTS.
IMS-1	ICE MAKER SUPPLY	NA	NA	1/2"	NA	NA	OATEY #39152, 6"X6"X3-3/8" PLASTIC BOX RECESSED IN WALL W/BRASS QUARTER TURN VALVE. PROVIDE WITH WATER HAMMER ARRESTOR.
LAV-1	LAVATORY - ACCESSIBLE	2"	1-1/2"	1/2"	1/2"	BATTERY	WALL MOUNTED, AMERICAN STANDARD #0356.421, VITREOUS CHINA, WHITE. SLOAN FAUCET #EBF-85, 0.35 GPM, SENSOR OPERATED. PROVIDE STOPS, SUPPLIES; C.P. BRASS "P" TRAP, & WATTS WALL SUPPORT #TCA-411.
S-1	SINK	2"	1-1/2"	1/2"	1/2"	NA	COUNTER MOUNTED, JUST #SL-ADA 2131-A65-J, 21-1/4"X31"X6-1/2" 18 GA. STAINLESS, SINGLE BOWL. PROVIDE WITH T&S BRASS FAUCET #S-2770, STRAINER, STOPS, SUPPLIES & C.P. BRASS "P" TRAP.
UR-1	URINAL	2"	1-1/2"	1-1/4"	NA	BATTERY	WALL MOUNTED, AMERICAN STANDARD PINTBROOK #6002.001, SENSOR OPERATED, 0.125 GPF, 14-7/16"X14-5/16"X22-5/8", VITREOUS CHINA, WHITE. PROVIDE WITH SLOAN "SOLIS" FLUSH VALVE #8186, 0.125 GPF.
WC-1	WATER CLOSET - ACCESSIBLE	3"	2"	1-1/4"	NA	BATTERY	FLOOR MOUNTED, AMERICAN STANDARD MADERA #3043.001, ELONGATED, SENSOR OPERATED, 26-3/4"X14"X17" RIM, VITREOUS CHINA, WHITE. PROVIDE WITH SLOAN FLUSH VALVE #8111-1.1-OR, 1.1 GPF AND & BEMIS OPEN FRONT SEAT #1955SSCT-000. INSTALL PER ACCESSIBLE FACILITIES REQUIREMENTS, LOCATE HANDLE ON WIDE SIDE OF FIXTURE
WC-2	WATER CLOSET	3"	2"	1-1/4"	NA	BATTERY	FLOOR MOUNTED, AMERICAN STANDARD MADERA #2234.001, ELONGATED, SENSOR OPERATED, 26-3/4"X14"X15" RIM, VITREOUS CHINA, WHITE. PROVIDE WITH SLOAN FLUSH VALVE #8111-1.1-OR, 1.1 GPF AND & BEMIS OPEN FRONT SEAT #1955SSCT-000. LOCATE HANDLE ON WIDE SIDE OF FIXTURE

NOTES:
1. DATA GIVEN IN SCHEDULE PROVIDES CODE REQUIRED FLOW RATES AND MINIMUM BRANCH PIPING SIZES.
2. BRANCH LINE SIZE MINIMUMS ARE TO BE AS SPECIFIED IN THIS CHART UNLESS OTHERWISE NOTED.

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CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

MECHANICAL & PLUMBING SCHEDULES

SHEET TITLE:

M 34088
EXP. 6/30/26
MECHANICAL
STATE OF CALIFORNIA

DESIGNED BY: DS
DRAWN BY: KH
CHECKED BY: BS
APPROVED BY:
SCALE: AS INDICATED
DATE: 05/14/2024
CITY SPECIFICATION NO.: 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO.: MP-001

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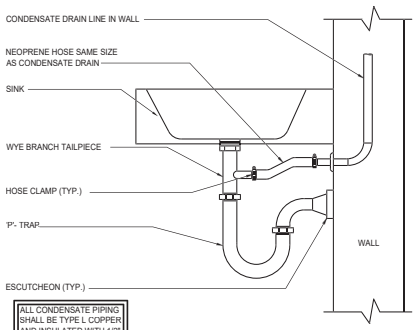
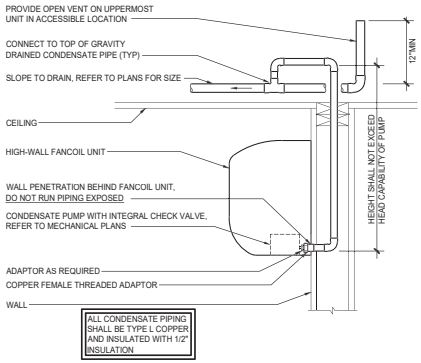
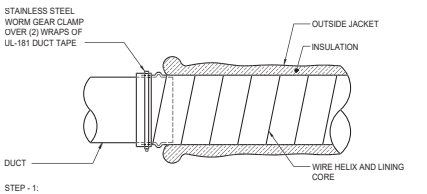


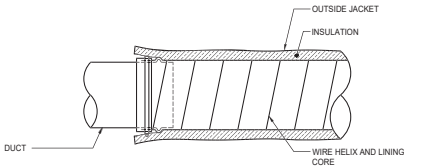
7 CONDENSATE TO TAIL PIECE DETAIL
NTS



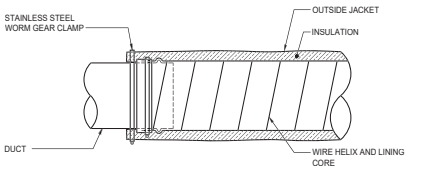
8 HIGH-WALL FANCOIL CONDENSATE DRAIN
NTS



STEP - 1:
FOLD BACK JACKET AND INSULATION. SLIDE AT LEAST 1" OF CORE OVER DUCT AND PAST THE BEAD. SEAL CORE TO DUCT WITH AT LEAST (2) WRAPS OF UL-181 LISTED DUCT TAPE. SECURE CONNECTION WITH A CLAMP PLACED OVER THE CORE AND TAPE PAST THE BEAD.

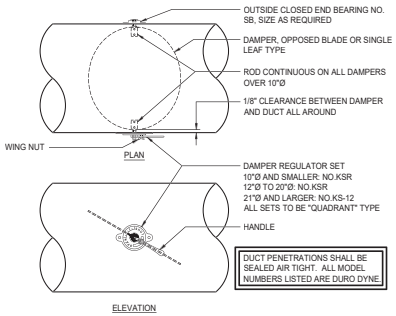


STEP - 2:
PULL THE INSULATION AND JACKET OVER THE TOP OF THE CORE AND THE CLAMP. TUCK THE OUTSIDE JACKET UNDER THE INSULATION.



STEP - 3:
INSTALL A CLAMP AROUND THE ENTIRE FLEXIBLE DUCT ASSEMBLY

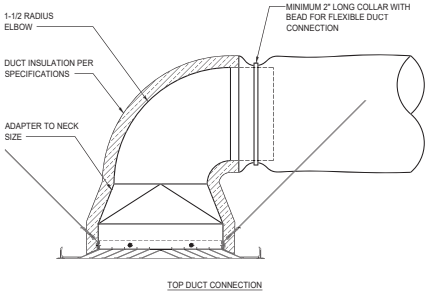
5 FLEXIBLE DUCT CONNECTION
NTS

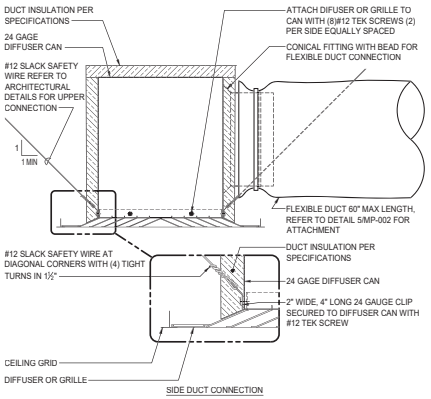


6 ROUND VOLUME DAMPER
NTS

TOP DUCT CONNECTION SHALL BE USED WHERE SPACE PERMITS. ONLY USE SIDE DUCT CONNECTION WHERE VERTICAL CLEARANCE IS LIMITED.

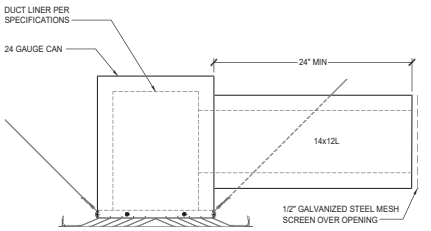
DIFFUSER SUPPORT NOTES ARE APPLICABLE TO BOTH DUCT CONNECTION CONFIGURATIONS



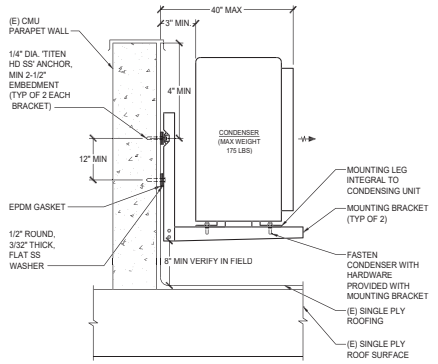


3 DIFFUSER OR GRILLE INSTALLATION (LAY-IN CEILING)
NTS

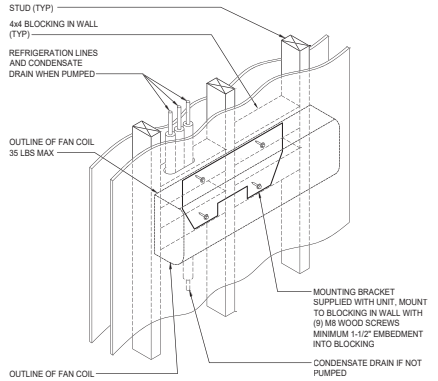
REFER TO DETAIL 3/MP-002 FOR GRILLE SUPPORT



4 RETURN AIR GRILLE INTO PLENUM
NTS



1 CONDENSING UNIT - WALL MOUNTING BRACKET
NTS



2 HIGH WALL FAN COIL MOUNTING
NTS

1106 WALNUT TENANT IMPROVEMENT

MECHANICAL & PLUMBING DETAILS

PROJECT TITLE:

SHEET TITLE:

M 34088
EXP. 6/30/26
MECHANICAL
STATE OF CALIFORNIA

DESIGNED BY: DS
DRAWN BY: KH
CHECKED BY: BS
APPROVED BY:
SCALE: AS INDICATED
DATE: 05/14/2024
CITY SPECIFICATION NO.: 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO.: MP-002

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STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: SLO PD North Building TI	Report Page:	(Page 7 of 9)
	Date Prepared:	6/5/2024

J. VENTILATION AND INDOOR AIR QUALITY

[5] For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.

[6] 120.2(e)3 requires systems serving rooms that are required by 130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000 ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by 130.1(c).

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

This section does not apply to this project.

M. COOLING TOWERS

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Form/Title
NRCI-MCH-01-E - Must be submitted for all buildings

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: SLO PD North Building TI	Report Page:	(Page 4 of 9)
	Date Prepared:	6/5/2024

H. FAN SYSTEMS & AIR ECONOMIZERS

This table is used to demonstrate compliance with prescriptive requirements found in 140.4(c), 140.4(e), 140.4(m), 170.2(c)3, and 170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	DS-1	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units	Not Serving Dwelling Units	Fan System Airflow (cfm)	500	Site Elevation	320	Economizer	NA: Altered packaged AC or HP <54 kBtu/h

01	02	03	04	05	06	07	08	09		10	11
						Allowance		Design			
Fan Name or Item Tag	Fan Type	Qty	Component	Airflow through Component (%)	Water Gauge (w.g)	Component Allowance	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method		Motor Nameplate Horsepower	Design Electrical Input Power (kW)
SF	Supply	1	Base Allowance for system serving spaces <=6 floors away	100		116		Manufacturer provided			0.04
			MERV 13-16 Filter upstream of thermal conditioning equipment	100		70					
			Hydronic/DX cooling coil or heat pump coil	100		70					
			Supply Fan System	100		70					
Supply Fan Base Allowance (kW)			Exhaust/Return/Relief/Transfer Fan Base Allowance(kW)			Fan System Allowance (kW)[5]		1	Fan System Electrical Output (kW)		0.04

[1] FOOTNOTES: Fans serving spaces with design background noise goals below NC35

[2] Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads.

[3] Fan system allowance includes fan system base allowance.

[4] Filter pressure loss can only be counted once per fan system.

[5] Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust fans, or both.

[6] Computer room economizers must meet requirements of 140.9(a) and will be documented on the NRCC-PRC-E document..

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, or 141.0(b)2 for alterations.			
Project Name: SLO PD North Building TI		Report Page:	(Page 1 of 9)
Project Address:	1106 Walnut	Date Prepared:	6/5/2024

A. GENERAL INFORMATION

01	Project Location (city)	San Luis Obispo	04	Total Conditioned Floor Area	87
02	Climate Zone	5	05	Total Unconditioned Floor Area	0
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

• All Other Occupancies

B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, 170.2(b) or 141.0(b)2 and 180.2(b)2 for alterations.

01	02	03
Air System(s)	Wet System Components	Dry System Components
☒ Heating Air System	☐ Water Economizer	☐ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
Mechanical Controls	☐ System Piping	☒ Fan Systems
☒ Mechanical Controls (existing to remain, altered or new)	☐ Cooling Towers	☐ Ductwork (existing to remain, altered or new)
	☐ Chillers	☒ Ventilation
	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: SLO PD North Building TI	Report Page:	(Page 8 of 9)
	Date Prepared:	6/5/2024

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-02-A - Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.	DS-1 Daikin RZQ18TAVJU / FAQ18TAVJU;
NRCA-MCH-03-A - Constant Volume Single Zone HVAC NOTE: This form does not automatically move to "Yes'. If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes".	DS-1 Daikin RZQ18TAVJU / FAQ18TAVJU;

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	Yes	Plan sheet or construction document location
		M-Sheets

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: SLO PD North Building TI	Report Page:	(Page 5 of 9)
	Date Prepared:	6/5/2024

H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

01	02	03	04	05	06	07	08	09	10	11
Fan System Name	Qty	Hours of Operation per Year	Design Supply Airflow Rate	Outdoor Airflow	% Outdoor Air at Full Design Airflow	Exemptions to Exhaust Air Heat Recovery Requirement per 140.4(q) & 170.2(c)4O	Exhaust Air Heat Recovery 140.4(q) & 170.2(c)4O	Type Of Heat Recovery Rating	Required Recovery Ratio	Energy Recovery Bypass

Fan Energy Index (FEI)

01	02	03
Name or Item Tag	FEI Exception	FEI
DS-1	Altered Fan System	

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in 110.2 and 120.2 and prescriptive controls in 140.4(f) and (n), 170.2(c)4D 170.2(c)4L or requirements in 141.0(b)2E 180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats 110.2(b) & (c)[1], 120.2(a) 160.3(a)2A or 141.0(b)2E & 180.2(b)2	Shut-Off Controls 120.2(e) & 160.3(a)2D	Isolation Zone Controls 120.2(g) & 160.3(a)2F	Demand Response 110.12 120.2(b) & 160.3(a)2B	Supply Air Temp. Reset 140.4(f) & 170.2(c)4D	Window Interlocks per 140.4(n) & 170.2(c)4D
DS-1	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	NA: Single Zone	NA: Serves temp. sensitive process	NA: Alteration	NA: No operable windows

[1]FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: SLO PD North Building TI	Report Page:	(Page 2 of 9)
	Date Prepared:	6/5/2024

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliant for guidance.

01		02		03		04		05		06		07		08	09
System Summary 110.1, 110.2, 140.4, 170.2(c)	AND	Pumps 140.4(k), 170.2(c)4I	AND	Fans/ Economizers 140.4(c), 140.4(e), 170.2(c)	AND	System Controls 110.2, 120.2, 140.4(f), 170.2(c)	AND	Ventilation 120.1, 160.2	AND	Terminal Box Controls 140.4(d), 170.2(c)4B	AND	Distribution 120.3, 140.4(l), 160.2, 160.3	AND	Cooling Towers 110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND		AND		COMPLIES
Mandatory Measures Compliance (See Table Q for Details)												COMPLIES			

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
DS-1	1	Single zone	Alteration		☐

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-MCH-E
Project Name: SLO PD North Building TI		Report Page:	(Page 9 of 9)
Project Address:	1106 Walnut	Date Prepared:	6/5/2024

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Danica Resurreccion	Documentation Author Signature: Danica Resurreccion
Company: 3C Engineering, Inc.	Signature Date: 2024-06-05
Address: 1500 Palm St.	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: San Luis Obispo CA 93401	Phone: 805-540-3363

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Brian Starrett	Responsible Designer Signature: [signature]
Company: 3C Engineering, Inc.	Date Signed: 2024-06-05
Address: 1500 Palm St.	License: M 34068
City/State/Zip: San Luis Obispo CA 93401	Phone: 805-540-3363

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: SLO PD North Building TI	Report Page:	(Page 6 of 9)
	Date Prepared:	6/5/2024

J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in 120.1 120.2(e)3B 140.4(p) and 140.4(q) for all nonresidential and hotel/motel and d:t24refnolink/]160.2, 160.3(a)3D, 170.2(a)4N, 170.2(a)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per 120.1(c)2.

Nonresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems

04		05		06		07
System Name	DS-1	System Design OA CFM Airflow[1]	0	System Design Transfer Air CFM	0	Air Filtration per 120.1(c) 141.0(b)2 and 160.2(c)21[2]
						Provided

08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per 120.1(c)3[3] & 160.2(c)3					Exh. Vent per 120.1(c)4 & 160.2(c)4		DCV or Sensor Controls per 120.1(d)3, 120.1(d)5, and 120.1(e)3[6] 160.2(c)5D 160.2(c)5E 160.2(c)5D	
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people[5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM		
Tel. - Unoccupied	All others	87			0	0	0	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
17	Total System Required Min OA CFM				0	18	Ventilation for this System Complies?		Yes

[1] FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system

[2] Air filtration requirements apply to the following three system types per 120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.

[3] Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.

[4] See Standards Tables 120.1-A and 120.1-B.

STATE OF CALIFORNIA

Mechanical Systems

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: SLO PD North Building TI	Report Page:	(Page 3 of 9)
	Date Prepared:	6/5/2024

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
				Equipment Sizing per Mechanical Schedule (kBtu/h) 140.4(a&b), 170.2(c)1 & 170.2(c)2						
				Heating Output[2,3]			Cooling Output[2,3]		Load Calculations[3,4]	
Name or Item Tag	Equipment Category per Tables 110.2, 140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available[1] 140.4(a) and 170.2(c)1	Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
DS-1	Unitary Heat Pumps	Air-cooled, split (1phase)	NA: Altered per 141.0(b)2E and 180.2(b)2	13.88	20	0	16.58	13.5	6.47	10.04

[1]FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per 140.4(a) and 170.2(c)1. Healthcare facilities are excepted.

[2]It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.

[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.

[4] Authority Having Jurisdiction may ask for load calculations used for compliance per 140.4(b) and 170.2(c).

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09
		Heating Mode				Cooling Mode		
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
DS-1	<65,000		HSPF2	7.5	7.6	SEER2	14.3	16.9

G. PUMPS

This section does not apply to this project.

CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE: ENERGY COMPLIANCE DOCUMENTATION

REGISTERED PROFESSIONAL ENGINEER BRIAN P. STARRETT M 34068 EXP. 6/30/26 MECHANICAL STATE OF CALIFORNIA

DESIGNED BY:	DS
DRAWN BY:	KH
CHECKED BY:	BS
APPROVED BY:	
SCALE:	AS INDICATED
DATE:	05/14/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	EC-000

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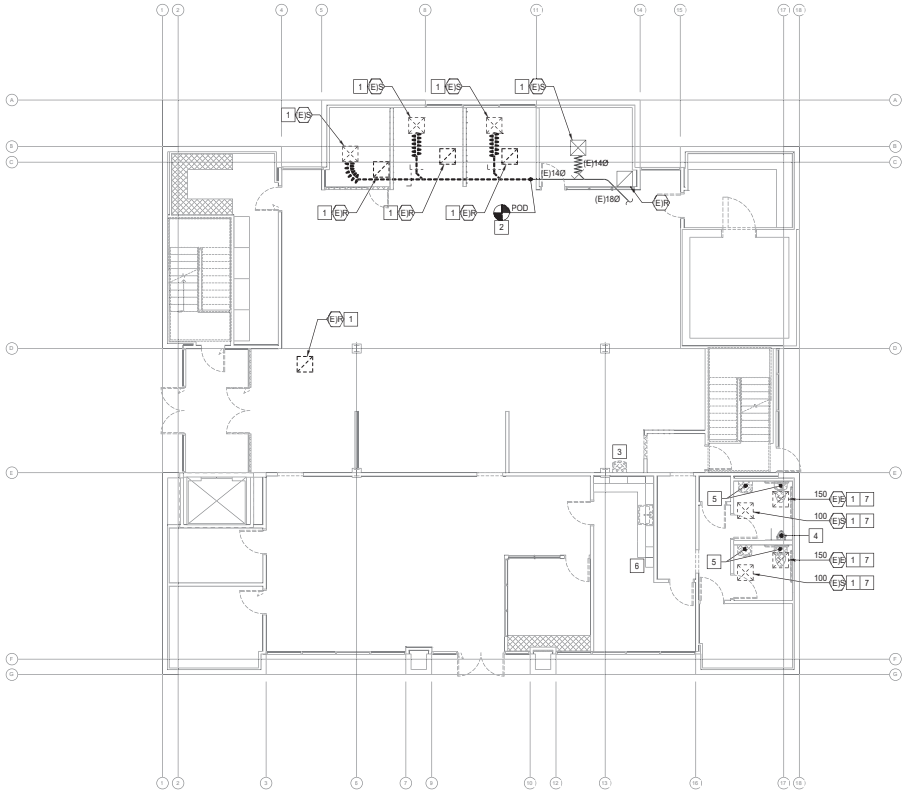

1 MECHANICAL & PLUMBING DEMOLITION FIRST FLOOR PLAN

SCALE:1/8" = 1'-0"

DEMOLITION KEY NOTES

APPLICABLE TO THIS SHEET ONLY

1	GRILLE/DIFFUSER TO BE REMOVED AND DISCARDED.
2	REMOVE ALL DUCTWORK UPSTREAM OF POD.
3	(E) LAV TO BE REMOVED. PIPING TO REMAIN.
4	(E) URINAL TO BE REMOVED. CAP PIPING IN WALL.
5	(E) FIXTURE TO BE REMOVED. PIPING TO REMAIN.
6	REMOVE (E) STAND PIPE AND ASSOCIATED STOPS. CAP PIPING UNDER CABINET.
7	DISCONNECT DUCT FROM GRILLE/DIFFUSER. CAP DUCT TO KEEP CLEAN UNTIL RECONNECTION TO NEW GRILLE/DIFFUSER.

DEMOLITION PLAN STATEMENT

THIS DEMOLITION PLAN WAS PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER DOES NOT REPRESENT THAT ALL ITEMS WHICH MAY REQUIRE DEMOLITION HAVE BEEN SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE SITE AND THE CONTRACT DOCUMENTS AND TO PERFORM ALL DEMOLITION AND RECONSTRUCTION WHICH MAY BE REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK. DISPOSE OF ALL EQUIPMENT PER THE OWNER'S DIRECTION WHILE COMPLYING WITH ALL LOCAL CODES AND ORDINANCES.

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CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE: MECHANICAL & PLUMBING DEMOLITION FIRST FLOOR PLAN

M 34268
EXP. 6/30/26
MECHANICAL
STATE OF CALIFORNIA

DESIGNED BY:	DS
DRAWN BY:	KH
CHECKED BY:	BS
APPROVED BY:	
SCALE:	AS INDICATED
DATE:	05/14/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	MPD-101

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DEMOLITION KEY NOTES

APPLICABLE TO THIS SHEET ONLY

1	GRILLE/DIFFUSER TO BE REMOVED AND DISCARDED.
2	REMOVE ALL DUCTWORK UPSTREAM OF POD.
3	(E)FIXTURE TO BE REMOVED. CAP PIPING IN WALL AND BELOW FLOOR.
4	DISCONNECT DUCT FROM GRILLE/DIFFUSER. CAP DUCT TO KEEP CLEAN UNTIL RECONNECTION TO NEW GRILLE/DIFFUSER
5	(E)EXHAUST FAN TO BE REMOVED. DISCONNECT FROM POWER AND DUCTWORK. CAP DUCT AIR TIGHT.
6	(E) FIXTURE TO BE REMOVED. PIPING TO REMAIN.

1 MECHANICAL & PLUMBING DEMOLITION SECOND FLOOR PLAN

SCALE:1/8" = 1'-0"

DEMOLITION PLAN STATEMENT

THIS DEMOLITION PLAN WAS PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER DOES NOT REPRESENT THAT ALL ITEMS WHICH MAY REQUIRE DEMOLITION HAVE BEEN SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE SITE AND THE CONTRACT DOCUMENTS AND TO PERFORM ALL DEMOLITION AND RECONSTRUCTION WHICH MAY BE REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK. DISPOSE OF ALL EQUIPMENT PER THE OWNER'S DIRECTION WHILE COMPLYING WITH ALL LOCAL CODES AND ORDINANCES.

ALL EXISTING ITEMS SHOWN ON THE PLANS HAS BEEN COLLECTED FROM THE BEST AVAILABLE RESOURCES. ACCURACY AND LOCATION OF EXISTING ITEMS MAY NOT BE ACCURATE.

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CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE: MECHANICAL & PLUMBING DEMOLITION SECOND FLOOR PLAN

M 34268
EXP. 6/30/26
MECHANICAL
STATE OF CALIFORNIA

DESIGNED BY:	DS
DRAWN BY:	KH
CHECKED BY:	BS
APPROVED BY:	
SCALE:	AS INDICATED
DATE:	05/14/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	MPD-102

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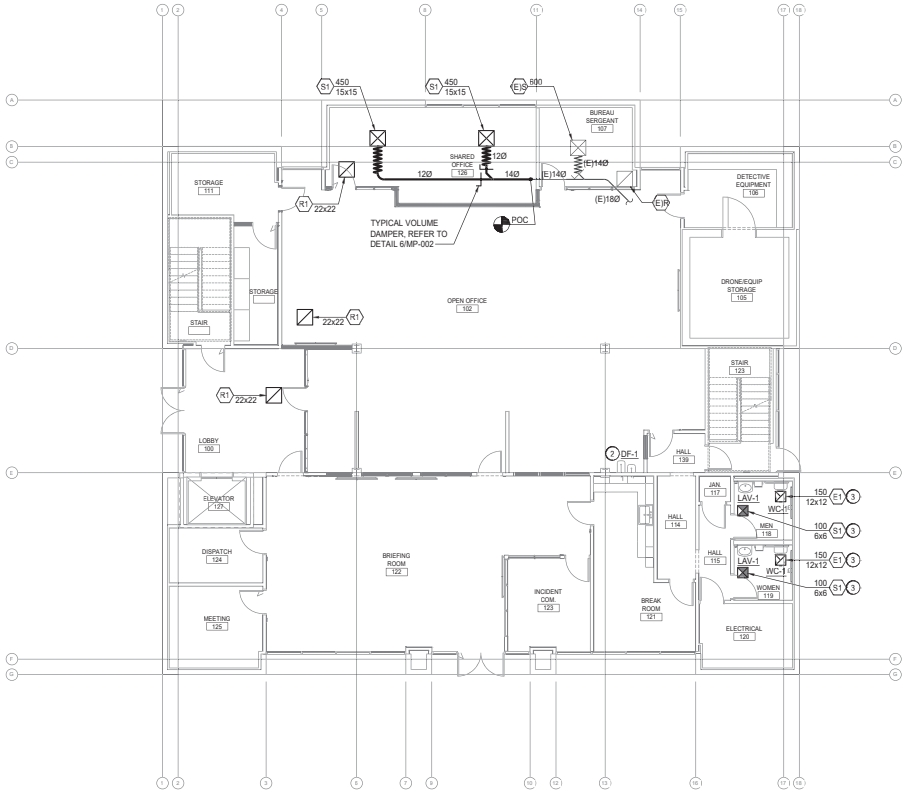
KEY NOTES

	APPLICABLE TO THIS SHEET ONLY
1	CONNECT NEW FIXTURE WITH EXISTING PIPING IN WALL. 1/2" HOT AND COLD WATER, 1-1/2" VENT AND 2" WASTE.
2	CONNECT NEW FIXTURE WITH EXISTING PIPING IN WALL. 1/2" COLD WATER, 1-1/2" VENT AND 2" WASTE.
3	CONNECT (E) DUCT TO NEW GRILLE/DIFFUSER.

GENERAL NOTES

	APPLICABLE TO THIS SHEET ONLY
1	ALL EXISTING ITEMS SHOWN ON THE PLANS HAS BEEN COLLECTED FROM THE BEST AVAILABLE RESOURCES. ACCURACY AND LOCATION OF EXISTING ITEMS MAY NOT BE ACCURATE.
2	NEW FLEXIBLE DUCT SHALL NOT EXCEED 60" IN LENGTH. EXTEND EXISTING RIGID DUCT AS NECESSARY TO MAKE THE FLEXIBLE DUCT CONNECTION TO THE DIFFUSER NO MORE THAN 60" LONG.
3	SEE PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZING.
4	PROVIDE ANGLE STOPS FOR ALL PLUMBING FIXTURE BRANCH PIPING LINES.
5	REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF FIXTURES, INCLUDING BUT NOT LIMITED TO FLOOR SINKS, FLOOR DRAINS, TRENCH DRAINS, ROOF DRAINS, ETC.
6	AFTER COMPLETION OF THE DUCTWORK MODIFICATIONS, BALANCE THE SHOWN AIR DISTRIBUTION TO THE VALUES LISTED.



1 MECHANICAL & PLUMBING FIRST FLOOR PLAN

SCALE:1/8" = 1'-0"

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CITY OF SAN LUIS OBISPO

PROJECT TITLE:
1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE:
MECHANICAL & PLUMBING FIRST FLOOR PLAN

M 34088
EXP. 6/30/26
MECHANICAL
STATE OF CALIFORNIA

DESIGNED BY:	DS
DRAWN BY:	KH
CHECKED BY:	BS
APPROVED BY:	
SCALE:	AS INDICATED
DATE:	05/14/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	MP-200

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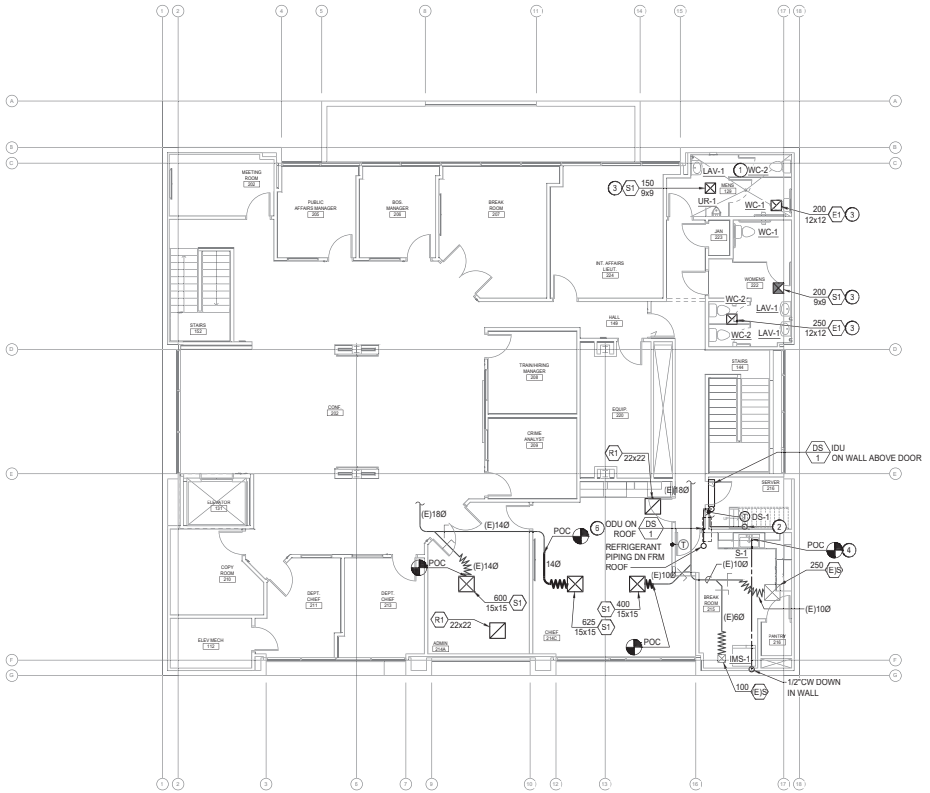

1 MECHANICAL & PLUMBING SECOND FLOOR PLAN

SCALE:1/8" = 1'-0"

KEY NOTES

APPLICABLE TO THIS SHEET ONLY

1	CONNECT NEW FIXTURE WITH EXISTING PIPING. 3/4" COLD WATER, 2" VENT AND 3" WASTE.
2	3/4" CD DN SERVER ROOM WALL. CONNECT TO SINK TAILPIECE PER DETAIL 7/MP-002.
3	CONNECT (E) DUCT TO NEW GRILLE/DIFFUSER.
4	CONNECT 1/2"CW TO (E) CW. PLUMBER TO FIELD VERIFY EXACT LOCATION OF PIPING.
5	3/4" CONDENSATE CONNECTION TO MECHANICAL EQUIPMENT. SEE DETAIL 8/MP-002 FOR MORE INFORMATION.
6	SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION.

GENERAL NOTES

APPLICABLE TO THIS SHEET ONLY

1	ALL EXISTING ITEMS SHOWN ON THE PLANS HAS BEEN COLLECTED FROM THE BEST AVAILABLE RESOURCES. ACCURACY AND LOCATION OF EXISTING ITEMS MAY NOT BE ACCURATE.
2	NEW FLEXIBLE DUCT SHALL NOT EXCEED 60" IN LENGTH. EXTEND EXISTING RIGID DUCT AS NECESSARY TO MAKE THE FLEXIBLE DUCT CONNECTION TO THE DIFFUSER NO MORE THAN 60" LONG.
3	SEE PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZING.
4	PROVIDE ANGLE STOPS FOR ALL PLUMBING FIXTURE BRANCH PIPING LINES.
5	REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF FIXTURES, INCLUDING BUT NOT LIMITED TO FLOOR SINKS, FLOOR DRAINS, TRENCH DRAINS, ROOF DRAINS, ETC.
6	AFTER COMPLETION OF THE DUCTWORK MODIFICATIONS, BALANCE THE SHOWN AIR DISTRIBUTION TO THE VALUES LISTED.

CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE: MECHANICAL & PLUMBING SECOND FLOOR PLAN

M 34068 EXP. 6/30/26 MECHANICAL STATE OF CALIFORNIA

DESIGNED BY: DS

DRAWN BY: KH

CHECKED BY: BS

APPROVED BY:

SCALE: AS INDICATED

DATE: 05/14/2024

CITY SPECIFICATION NO. 2000577-04

PLAN FILE NO. / LOCATION

SHEET NO. MP-300

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GENERAL NOTES

1. CODE COMPLIANCE: ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH CODES, STANDARDS, AND ORDINANCES AS SET FORTH BY THE AUTHORITIES HAVING JURISDICTION AND THEIR LATEST ADOPTED EDITIONS (IN EFFECT AT TIME OF BUILDING PERMIT APPLICATION) OF THE FOLLOWING PUBLICATIONS:

   A. ALL WORK SHALL COMPLY WITH 2020 NATIONAL ELECTRICAL CODE (NEC) AS AMENDED BY THE 2022 CALIFORNIA ELECTRICAL CODE (CEC), 2022CALIFORNIA BUILDING CODE (CBC), 2022 CALIFORNIA ENERGY CODE (CEnC), CALIFORNIA FIRE CODE (CFC), 2022 CALIFORNIA MECHANICAL CODE (CMC), 2022 CALIFORNIA GREEN BUILDING STANDARDS (CGBC), AND ADOPTED ORDINANCES.

   B. AMERICANS WITH DISABILITIES ACT (ADA).

2. SAFETY: THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL EQUIPMENT IN A SAFE AND RESPONSIBLE MANNER. KEEP DEAD FRONT EQUIPMENT IN PLACE WHILE EQUIPMENT IS ENERGIZED. CONDUCT ALL CONSTRUCTION OPERATIONS IN A SAFE MANNER FOR EMPLOYEES AS WELL AS OTHER WORKPERSONS OR ANYONE VISITING THE JOB SITE. PROVIDE BARRIERS, FLAGS, TAPE, ETC. AS REQUIRED FOR SAFETY. THE CONTRACTOR SHALL HOLD ALL PARTIES HARMLESS OF NEGLIGENT SAFETY PRACTICES, WHICH MAY CAUSE INJURY TO OTHERS ON OR NEAR THE JOB SITE.

3. FIRE RATED ASSEMBLIES SHALL MAINTAIN RATINGS AS SPECIFIED IN THE CALIFORNIA BUILDING CODE CHAPTER 7. CONTRACTOR SHALL PROVIDE AND INSTALL PHYSICAL ENCLOSURE AROUND FIXTURES, PANELS, ETC. AS REQUIRED. ALL ASSEMBLIES TO BE PENETRATED SHALL BE INSTALLED WITH APPLICABLE THROUGH-PENETRATION FIRESTOP SYSTEM AS DETERMINED BY UL CLASSIFICATION. BEFORE CONSTRUCTION, VERIFY AND COMPLY WITH REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION.

4. MOUNTING HEIGHTS SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

   +15" AFF: RECEPTACLES, TELEPHONE, TV & DATA OUTLETS. (MEASURED BOTTOM OF OUTLET BOX)
   +46" AFF: OUTLET ABOVE COUNTER (MEAUSRED TOP OF OUTLET BOX)
   +48" AFF: LIGHT SWITCHES. (MEASURED TOP OF OUTLET BOX)
   +48" AFF: FIRE ALARM MANUAL PULL STATIONS, T-STATS. (MEASURED TOP OF OUTLET BOX)
   THE LOWER OF +80" AFF TO BOTTOM OF LENS, OR 6" BELOW CEILING: FIRE ALARM VISUALS.

   ELECTRICAL SWITCHES: CONTROLS AND SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF THE ROOM OR AREA TO CONTROL LIGHT AND RECEPTACLE OUTLETS, APPLIANCES OR COOLING, HEATING AND VENTILATING EQUIPMENT, SHALL BE LOCATED NO MORE THAN 48 INCHES MEASURED FROM THE TOP OF THE OUTLET BOX NOR LESS THAN 15 INCHES MEASURED FROM THE BOTTOM OF THE OUTLET BOX TO THE LEVEL OF THE FINISH FLOOR OR WORKING PLATFORM. [CBC 11B-308.1.1]

   ELECTRICAL RECEPTACLE OUTLETS: ELECTRICAL RECEPTACLE OUTLETS ON BRANCH CIRCUITS OF 30 AMPERES OR LESS AND COMMUNICATION SYSTEM RECEPTACLES SHALL BE LOCATED NO MORE THAN 48 INCHES MEASURED FROM THE TOP OF THE RECEPTACLE OUTLET BOX OR RECEPTACLE HOUSING NOR LESS THAN 15 INCHES MEASURED FROM THE BOTTOM OF THE RECEPTACLE OUTLET BOX OR RECEPTACLE HOUSING TO THE LEVEL OF THE FINISH FLOOR OR WORKING PLATFORM [CBC 11B-308.1.2]

   CONTROLS AND OPERATING MECHANISMS SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 11B-309.

   BEFORE ROUGH-IN, VERIFY ALL MOUNTING HEIGHTS AND EXACT LOCATIONS FOR ALL EQUIPMENT ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, OUTLETS, ETC. WITH ARCHITECT OR OWNER. PLACE DEVICES LOCATED ABOVE COUNTERS, SHELVING, ETC. AND IN BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF WAINSCOTING, COUNTER SPLASH, SHELVING, ETC. ARCHITECTURAL SHEETS SHALL GOVERN.

5. LABEL PANELS, CABINETS, BACKBOARDS, MAIN DEVICES, SAFETY SWITCHES, CONTACTORS AND OTHER SPECIFICALLY DESIGNATED EQUIPMENT SHOWN ON PLANS. USE ENGRAVED LAMINATED PLASTIC NAMEPLATES ATTACHED BY SCREWS OR RIVETS. FOR FEEDERS, NEATLY AND INDELIBLY LABEL CONDUIT DESTINATIONS ON BOTH VISIBLE ENDS OF CONDUIT RUNS WHERE CONDUITS TERMINATE AT DESIGNATED ENCLOSURES, STRUCTURES OR EQUIPMENT (INCLUDING PULL AND SPLICE BOXES).

5. EQUIPMENT ANCHORAGE NOTE
   ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE ANCHORED OR BRACED TO MEET THE HORIZONTAL AND VERTICAL FORCES PRESCRIBED IN THE 2022 CBC, SECTIONS 1617A.1.18 THROUGH 1617A.1.26, AND ASCE 7-15 CHAPTERS 13, 26, AND 30 AND 2022 CEC 110.3(B)

   THE ATTACHMENT OF THE FOLLOWING ITEMS SHALL BE DESIGNED TO RESIST THE FORCES PRESCRIBED ABOVE, BUT NEED NOT BE DETAILED ON THE PLANS PER 2022 CBC SECTION 1616A.1.18:

   A. FURNITURE(EXCEPT STORAGE CABINETS AS NOTED IN 2022 CBC TABLE 13.5-1)
   B. TEMPORARY OR MOVABLE EQUIPMENT WITH EXCEPTIONS NOTED IN 2022 CBC SECTION 1616A.1.18 ITEM 2.
   C. ARCHITECTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS IN SEISMIC DESIGN CATEGORIES D, E, OR F
      THAT MEET ALL OF THE CRITERIA LISTED IN 2022 SECTION 1616A.1.18 ITEM 3.
   D. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUPPORTED BY VIBRATION ISOLATORS.
   E. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A
      WALL

   FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL/ELECTRICAL ENGINEER.

   PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

   PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16, SECTION 13.3 AS DEFINE IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8, AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25, AND 1617A.1.26.

6. THE ISSUANCE OF A PERMIT SHALL NOT PREVENT THE BUILDING OFFICIAL FROM REQUIRING THE CORRECTION OF ERRORS ON THESE PLANS OR FROM PREVENTING ANY VIOLATION OF THE CODES ADOPTED BY THE CITY, RELEVANT LAWS, ORDINANCES, RULES AND/OR REGULATIONS.

RATED WALLS/ASSEMBLIES NOTES

1. IN FIRE-RESISTANCE RATED WALLS, DETAIL THROUGH PENETRATIONS AND MEMBRANE PENETRATION PER CBC 714.4 AS NOTED BELOW:
   A. STEEL, FERROUS OR COPPER PIPES MAY PENETRATE FIRE-RESISTANCE RATED WALLS, PROVIDED THE OPENING IS PROTECTED AS FOLLOWS: (CBC 714.4.1)
      i. ITEM PENETRATING CONCRETE OR MASONRY WALLS IS A MAXIMUM 6 INCHES NOMINAL DIAMETER AND THE AREA OF THE OPENING THROUGH THE WALL DOES NOT EXCEED 144 SQUARE INCHES, CONCRETE, GROUT OR MORTAR IS PERMITTED WHERE IT IS INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE F IRE-RESISTANCE RATING; OR
      ii. WHEN THE ANNULAR SPACE IS PROTECTED WITH MATERIAL THAT MEETS ASTM E 119 OR UL 263.
   B. PENETRATIONS SHALL BE FIRE-STOPPED BY A SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479, AND SHALL HAVE AN F RATING OF NOT LESS THAN THE REQUIRED FIRE-RESISTANCE RATING OF THE WALL PENETRATED. (CBC 714.4.1.2)
   C. MEMBRANE PENETRATIONS OF MAXIMUM 2-HOUR FIRE-RESISTANCE RATED WALLS BY STEEL ELECTRICAL BOXES ARE PERMITTED, PROVIDED THAT EACH DOES NOT ESCEED 16 SQUARE INCHES IN AREA AND THE TOTAL AREA OF SUCH OPENING DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA, AND THE SPACE BETWEEN THE WALL MEMBRANE AND THE BOX DOES NOT EXCEED ¼ INCH. ADDITIONALLY, OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES (CBC 714.4.2 EXCEPTION 1).
   D. MEMBRANE PENETRATIONS BY LISTED ELECTRICAL BOXES OF ANY MATERIAL ARE PERMITTED, PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE RATED ASSEMBLIES, AND THE SPACE BETWEEN THE WALL MEMBRANE AND THE BOX DOES NOT EXCEED 1/8 INCH UNLESS LISTED OTHERWISE. ADDITIONALLY, OUTLET BOXES ON OPPOSED SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. (CBC 714.4.2 EXCEPTION 2)
   E. A FIRE SPRINKLER SHALL BE PERMITTED TO BE UNPROTECTED PROVIDED SUCH SPACE IS COVERED BY A METAL ESCUTCHEON PLATE. (CBC 714.4.2 EXCEPTION 5)
   F. WHERE WALLS ARE PENETRATED BY OTHER MATERIALS OR OPENINGS LARGER THAN THOSE MENTIONED ABOVE, THEY MUST BE QUALIFIED BY TEST IN ACCORDANCE WITH CBC 714.4.2 EXCEPTION 2.

2. IN FIRE-RESISTANCE HORIZONTAL ASSEMBLIES , DETAIL THROUGH PENETRATIONS AND MEMBRANE PENETRATION PER CBC 714.5 AS NOTED BELOW:
   A. STEEL, FERROUS OR COPPER CONDUITS MAY PENETRATE FIRE-RESISTANCE RATED FLOOR ASSEMBLY WHEN THE ANNULAR SPACE IS PROTECTED WITH MATERIAL THAT MEETS ASTM E 119 OR UL 263 (CBC 714.5.1 EXCEPTION 1)
   B. PENETRATING ITEMS, AS NOTED ABOVE, WITH A MAXIMUM 6 INCHES NOMINAL DIAMETER SHALL NOT BE LIMITED TO THE PENETRATION OF A SINGLE FIRE-RESISTANCE RATED FLOOR ASSEMBLY, PROVIDED THAT THE AREA OF THE OPENINGS DOES NOT EXCEED 144 SQUARE INCHES IN ANY 100 SQUARE FEET OF FLOOR AREA. (CBC 714.4.1.1 EXCEPTION 1)
   C. PENETRATIONS SHALL BE FIRE-STOPPED BY A SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479. THE SYSTEM SHALL HAVE AN F RATING AND T RATING OF NOT LESS THAN 1-HOUR BUT NOT LESS THAN THE REQUIRED FIRE-RESISTANCE RATING OF THE FLOOR PENETRATED (CBC 714.5.1)
   D. MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES ARE PERMITTED PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE RATED ASSEMBLIES, AND THE SPACE BETWEEN THE CEILING MEMBRANE AND THE BOX DOES NOT EXCEED 1/8 INCHESUNLESS LISTED OTHERWISE. (CBC 714.5.2 EXCEPTION 4)
   E. A FIRE SPRINKLER SHALL BE PERMITTED TO BE UNPROTECTED PROVIDED SUCH SPACE IS COVERED BY A METAL ESCUTCHEON PLATE. (CBC 714.5.2 EXCEPTION 5)

3. JOINTS INSTALLED IN OR BETWEEN FIRE-RESISTANCE RATED WALL, FLOOR OR FLOOR/CEILING ASSEMBLIES AND ROOFS OR ROOF/CEILING ASSEMBLIES SHALL BE PROTECTED AN APPROVED FIRE-RESISTANT JOINT SYSTEM WITH A FIRE-RESISTANCE RATING NOT LESS THAN THAT OF THE ASSEMBLY IN WHICH IT IS INSTALLED. PROVIDE DETAILS (CBC 7145.1)

4. FIRE DOORS AND FIRE-PROTECTION RATED GLAZING SHALL BEAR LABELS AS REQURIED BY CBC 716.2.9 AND 716.3.5.

5. FIRE DAMPERS SHALL BE THE MINIMUM FIRE PROTECTION RATING SPECIFIED IN CBC TABLE 717.3.2.1 FOR THE TYPE OF PENETRATION (CBC 717.3.2.1)

6. PROVIDE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS AND CEILING RADIATION DAMPERS SHALL BE PROVIDE AS PRESCRIBED IN CBC 717.

ROOF PLAN NOTES

A. PROVIDE SEALTITE POWER & CONTROL CONNECTIONS TO ALL AC UNITS.

B. ALL EQUIPMENT SHOWN ABOVE ROOF IS NEMA 3R.

C. VERIFY EXACT EQUIPMENT LOCATIONS AND POINTS OF CONNECTION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

D. CONDUIT SHOWN IS ROUTED IN CEILING SPACE BELOW ROOF DECK.

E. NO ROOF MOUNT CONDUIT IS ALLOWED UNLESS OTHERWISE NOTED.

F. FUSE DISCONNECT SWITCHES PER EQUIPMENT NAMEPLATE RATING.

G. ALL ROOF PENETRATIONS SHALL BE MADE WITH ROOF JACKS, SEAL ALL PENETRATIONS WITH MASTIC.

DEMOLITION FLOOR PLAN

A. REFER TO ARCHITECTURAL DEMOLITION SHEETS FOR ADDITIONAL INFORMATION.

B. EQUIPMENT SHOWN TO BE REMOVED IS SHOWN FOR REFERENCE ONLY. INFORMATION WAS OBTAINED FROM ORIGINAL BUILDING DRAWINGS AND LIMITED FIELD INVESTIGATION AND MAY NOT REPRESENT ALL ELECTRICAL DEMOLITION. FIELD VERIFY CONDITIONS AND DISCONNECT/REMOVE ALL EQUIPMENT AS REQUIRED TO MEET THE INTENT OF THAT SHOWN ON THE LIGHTING AND POWER/SIGNAL DRAWINGS.

C. ALL ELECTRICAL EQUIPMENT SHOWN ON DRAWING (OR REQUIRED) TO BE DEMOLISHED SHALL BE DISCONNECTED, REMOVED AND DISPOSED OF BY ELECTRICAL CONTRACTOR. NO EQUIPMENT (RACEWAYS, BOXES, CABLING, ETC.) SHALL BE ABANDONED IN PLACE AND COVERED BY NEW CONSTRUCTION.

D. CLEAN, REPAIR (AS REQUIRED) AND RELAMP ALL EXISTING LIGHT FIXTURES THAT ARE TO REMAIN AND BE RE-USED TO ASSUME ALL FIXTURE ARE OPERATIONAL UPON COMPLETION OF PROJECT.

E. ANY LIGHT SWITCHES THAT ARE NO LONGER IN USE, WHETHER SHOWN ON THE DEMOLITION PLAN OR NOT, ARE TO HAVE THE DEVICE AND WIRING REMOVED, AND A BLANK COVER PLATE INSTALLED.

F. SCHEDULE ANY OUTAGES WITH OWNER PRIOR TO DE-ENERGIZATION OF ANY BRANCH CIRCUITS OR FEEDERS.

G. DISCONNECTION/REMOVAL OF EXISTING COMMUNICATIONS SYSTEMS COMPONENTS SHALL BE SCHEDULED WITH CITY OF SAN LUIS OBISPO.

H. SALVAGE ALL REMOVED COMPONENTS (SPEAKERS, GRILLES, TELEPHONE INSTRUMENTS, RADIO HANDSETS, ETC.) SHALL BE SALVAGED TO THE OWNER.

I. INFORMATION SHOWN FOR LOAD DESCRIPTIONS ON EXISTING PANELS WAS GAINED FROM ORIGINAL BUILDING ELECTRICAL PLANS AND SHALL BE FIELD VERIFIED. CONFIRM LOAD ON EACH CIRCUIT OF ALL EXISTING PANELS AND PROVIDE UPDATED TYPEWRITTEN CIRCUIT DIRECTORY (IN PLASTIC SLEEVE) FOR EACH EXISTING PANELBOARD.

J. ANY LOADS REMOVED DURING DEMOLITION SHALL HAVE CONDUCTORS REMOVED BACK TO NEXT REMAINING DEVICE OR TO EXISTING PANELS. ABANDONED BREAKERS SHALL BE LABELED "SPARE".

K. PROVIDE BLANK FILLER PLATES IN DEADFRONTS OF EXISTING PANELBOARDS UPON COMPLETION OF PROJECT WHERE BREAKERS HAVE BEEN REMOVED.

COMMUNICATIONS PLAN NOTES

A. DATA AND TV RACEWAYS AND BOXES:
   a. PROVIDE AND INSTALL 4" SQUARE RECESSED JUNCTION BOX WITH 1-GANG RING. RUN 3/4" EMT CONDUIT STUB TO ACCESSIBLE CEILING SPACE ABOVE FLOOR DATA MAX 3-CAT6A CABLES.
   b. PROVIDE AND INSTALL 5" SQUARE RECESSED JUNCTION BOX WITH 1-GANG RING. RUN 1-1/4" EMT CONDUIT STUB TO ACCESSIBLE CEILING SPACE ABOVE FLOOR DATA MAX 10-CAT6A CABLES.

   BEFORE CONSTRUCTION, COORDINATE AND VERIFY ALL DATA AND TELEPHONE LOCATIONS WITH OWNER OR ARCHITECT.

B. ALL NEW HORIZONTAL CABLES, RISER RATED (CMR) CABLES SHALL BE CAT6A (BERK-TEK #LANMARK-10G2 - BLUE)

C. DEVICE LOCATIONS SHOWN ARE SCHEMATIC AND APPROXIMATE. EXACT LOCATIONS SHALL BE FIELD VERIFIED DURING ROUGH-IN WITH ARCHITECTURAL ELEVATIONS, CASEWORK SHOP DRAWINGS, FURNITURE, ETC. AND SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT WITH OTHER EQUIPMENT.

D. ELECTRICAL AND COMMUNICATIONS OUTLETS SHOWN IN THE SAME LOCATION, SHALL BE MOUNTED ON OPPOSITE SIDES OF THE SAME STUD. COORDINATE BETWEEN ELECTRICAL AND COMMUNICATIONS PLANS.

E. CAT6A CABLES, TOTAL LENGTH FROM IDF TO ENDPOINT SHALL NOT BE MORE THAN 295'-0", EC SHALL BRING TO THE ATTENTION OF THE ENGINEER ANY LENGTHS IN EXCESS OF 295'-0".

F. ALL COMMUNICATION WORK SHALL COMPLY WITH CITY OF SAN LUIS OBISPO STANDARDS. OBTAIN COMPLETE LIST OF STANDARDS, AND ADHERE ACCORDINGLY.

G. TEST ALL NEW AND EXISTING RE-USE CABLES.

LIGHTING FLOOR PLAN

A. NIGHT LIGHT "NL" DESIGNATED LUMINAIRES IN INTERIOR LOCATIONS SHALL HAVE ONE BALLAST CONTINUOUSLY ENERGIZED. LUMINAIRES IN EXTERIOR LOCATIONS SHALL BE AUTOMATICALLY CONTROLLED TO BE ON FROM DUSK TO DAWN.

B. LIGHTING FIXTURE LOCATIONS SHOWN ARE SCHEMATIC. REFER TO ARCHITECTURAL PLANS (REFLECTED CEILING, ELEVATIONS, ETC.) FOR EXACT LOCATIONS AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN.

C. REFER TO ARCHITECT'S REFLECTED CEILING PLAN(S) FOR CEILING HEIGHTS, TYPES, FINISHES, ETC. IN EACH AREA. VERIFY FLANGE TYPES, TRIM KITS, STEM LENGTHS, ETC. FOR ALL FIXTURES PRIOR TO SUBMITTALS.

D. CONFIRM LOCATION OF ALL DOORS SWINGS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN OF SWITCHES.

E. PROVIDE UNSWITCHED HOT LEG OF ROOM LIGHTING BRANCH CIRCUIT TO EACH BATTERY POWERED EMERGENCY LIGHT AND EXIT SIGN FOR CONTINUOUS CHARGING.

POWER FLOOR PLAN

A. FUSING: ALL FUSIBLE SAFETY DISCONNECT SWITCHES SHALL BE PROVIDED WITH DUAL-ELEMENT TIME DELAY TYPE FUSES SIZED AND RATED PER EQUIPMENT MANUFACTURERS' RECOMMENDATIONS. VERIFY WITH EQUIPMENT NAMEPLATE BEFORE INSTALLATION.

B. INSTALL SEPARATE NEUTRALS FOR EACH 120V BRANCH CIRCUIT.

C. MOTOR OVERLOAD PROTECTION: WHERE REQUIRED BY NEC ARTICLE 430 PART C AND NOT SHOWN ON PLAN OR PROVIDED INTEGRAL WITH EQUIPMENT, PROVIDE AND INSTALL THERMAL OVERLOAD PROTECTION FOR ALL MOTORS.

D. SPARE CONDUIT FOR RECESSED PANELS: PROVIDE (1) 3/4" SPARE CONDUIT STUB UP TO ACCESSIBLE ABOVE CEILING SPACE AND/OR ACCESSIBLE SPACE BELOW FOR EVERY (3) SPARE BREAKER SPACES AS INDICATED ON PANEL SCHEDULES.

E. DEVICE LOCATIONS SHOWN ARE SCHEMATIC AND APPROXIMATE. EXACT LOCATIONS SHALL BE FIELD VERIFIED DURING ROUGH-IN WITH ARCHITECTURAL ELEVATIONS, CASEWORK SHOP DRAWINGS, FURNITURE, ETC. AND SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT WITH OTHER EQUIPMENT.

F. ELECTRICAL AND COMMUNICATIONS OUTLETS SHOWN IN THE SAME LOCATION, SHALL BE MOUNTED ON OPPOSITE SIDES OF THE SAME STUD. COORDINATE BETWEEN ELECTRICAL AND COMMUNICATIONS PLANS.

G. ALL NEW OUTLETS MUST BE TAMPER PROOF.

H. ALL 15 AND 20AMPERE RECEPTACLES FOR BOTH DAMP AND WET LOCATIONS REQUIRED TO BE LISTED WEATHER-RESISTANT (WR) TYPE PER CEC 406.9 (A) AND (B)

I. CEC 406.9(A) RECEPTACLES IN DAMP LOCATIONS: RECEPTACLES INSTALLED OUTDOORS IN A LOCATION PROTECTED FROM THE WEATHER OR IN OTHER DAMP LOCATIONS SHALL BE AN ENCLOSURE FOR THE RECEPTACLE THAT IS WEATHERPROOF WHEN THE RECEPTACLE IS COVERED (ATTACHMENT PLUG CAP NOT INSERTED AND RECEPTACLE COVERS CLOSE)

J. CEC 406.9(B) RECEPTACLES OF 15 AND 20AMP, 125 AND 250 VOLTS INSTALLED IN A WET LOCATION SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED. AN OUTLET BOX HOOD INSTALLED FOR THIS PURPOSE SHALL BE LISTED AND SHALL BE IDENTIFIED AS "EXTRA-DUTY" OTHER LISTED PRODUCTS, ENCLOSURES, OR ASSEMBLIES PROVIDING WEATHERPROOF PROTECTION THAT DO NOT UTILIZE AN OUTLET BOX HOOD NEED TO BE MARKED "EXTRA DUTY"

   EXCEPTION: 15 AND 20AMP, 125 THROUGH 250 VOLT RECEPTACLES INSTALLED IN A WET LOCATION AND SUBJECT TO ROUTINE HIGH-PRESSURE SPRAY WASHING SHALL BE PERMITTED TO HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHEN THE ATTACHMENT PLUG IS REMOVED.

CONDUCTORS AND CABLES

REFER TO SPECIFICATIONS 26 0519 FOR ADDITIONAL INFORMATION.

1. WIRE CONNECTORS SHALL BE MINIMUM 75 DEGREE CENTIGRADE RATED AND PROPERLY SIZED FOR THE NUMBER OF CONDUCTORS BEING CONNECTED, TERMINATED, SPLICED, ETC. ALL ABOVE GRADE CONNECTORS SHALL BE SOLDERLESS LUG OR PLASTIC WIRE NUT TYPE, SCREW ON, PRESSURE CABLE TYPE (WIRE UT OR SPRING NUT TYPE) 600 VOLT, 105 DEGREE C, WITH SKIRT TO COVER ALL PORTIONS OF STRIPPED WIRES. CONNECTOR SHALL BE U.L. RATED FOR NUMBER AND SIZE OF CONDUCTORS BEING JOINED TOGETHER AS SPLICED.

2. WIRES AND CABLES FOR LINE VOLTAGE SYSTEM AND CONTROLS. WIRE AND CABLE SHALL BE COPPER, 600 VOLT RATED THROUGH OUT. CONDUCTORS 14AWG OT 10AWG, SOLID OR STRANDED. CONDUCTORS 8 AWG AND LARGER, STRANDED

3. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED. MINIMUM SIZE FOR INDIVIDUAL CONDUCTORS SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON PANEL SCHEDULE OR PLANS. SIZE #8 AWG AND LARGER SHALL BE STRANDED CONDUCTOR. INDIVIDUAL CONDUCTORS SHALL BE INSULATED WITH TYPE, XHHW, THW, THHN/THWN 600 VOLT INSULATION UNLESS OTHERWISE NOTED.

4. PROPER INSULATION TYPE SHALL BE USED FOR THE PROPER ENVIRONMENTAL APPLICATION (I.E. WATERPROOF, WET LOCATION, PLENUM TEMPERATURE RATED). ALL CONDUCTORS, WIRING CABLE WHERE INSTALLED BELOW FLOOR, SLAB OR UNDERGROUND SHALL BE CONSIDERED WET LOCATIONS, AND SHALL BE RATED ACCORDINGLY. NON WATERPROOF CABLING IS NOT ALLOWED IN ANY BELOW GRADE OR WET APPLICATION.

5. GROUP THE COMMON NEUTRAL CONDUCTOR FOR MULTIPLE CIRCUITS WITH ITS ASSOCIATED UNGROUNDED CONDUCTORS WHEN CONTAINED IN THE SAME ENCLOSURE. CEC 200.4(B)

6. THE BRANCH CIRCUIT SERVING EMERGENCY LIGHTING AND POWER CIRCUITS SHALL NOT BE PART OF A MULTIWIRE BRANCH CIRCUIT. CEC 700.19.

RECEPTACLES AT DAMP AND WET LOCATION

A. ALL 15 AND 20AMPERE RECEPTACLES FOR BOTH DAMP AND WET LOCATIONS REQUIRED TO BE LISTED WEATHER-RESISTANT (WR) TYPE PER CEC 406.9 (A) AND (B)

B. CEC 406.9(A) RECEPTACLES IN DAMP LOCATIONS: RECEPTACLES INSTALLED OUTDOORS IN A LOCATION PROTECTED FROM THE WEATHER OR IN OTHER DAMP LOCATIONS SHALL BE AN ENCLOSURE FOR THE RECEPTACLE THAT IS WEATHERPROOF WHEN THE RECEPTACLE IS COVERED (ATTACHMENT PLUG CAP NOT INSERTED AND RECEPTACLE COVERS CLOSE)

C. CEC 406.9(B) RECEPTACLES OF 15 AND 20AMP, 125 AND 250 VOLTS INSTALLED IN A WET LOCATION SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED. AN OUTLET BOX HOOD INSTALLED FOR THIS PURPOSE SHALL BE LISTED AND SHALL BE IDENTIFIED AS "EXTRA-DUTY" OTHER LISTED PRODUCTS, ENCLOSURES, OR ASSEMBLIES PROVIDING WEATHERPROOF PROTECTION THAT DO NOT UTILIZE AN OUTLET BOX HOOD NEED TO BE MARKED "EXTRA DUTY"

   EXCEPTION: 15 AND 20AMP, 125 THROUGH 250 VOLT RECEPTACLES INSTALLED IN A WET LOCATION AND SUBJECT TO ROUTINE HIGH-PRESSURE SPRAY WASHING SHALL BE PERMITTED TO HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHEN THE ATTACHMENT PLUG IS REMOVED.

ELECTRICAL SHEET INDEX

SHEET NO.	SHEET DESCRIPTION
E-001	ELECTRICAL GENERAL NOTES
E-002	ELECTRICAL LEGEND AND ABBREVIATIONS
E-003	ELECTRICAL SINGLE LINE DIAGRAM AND SCHEDULES
ED-101	FIRST FLOOR POWER AND SIGNAL DEMOLITION PLAN
ED-102	SECOND FLOOR POWER AND SIGNAL DEMOLITION PLAN
E-101	FIRST FLOOR POWER AND SIGNAL PLAN
E-102	SECOND FLOOR POWER AND SIGNAL PLAN
E-111	FIRST FLOOR LIGHTING PLANS
E-112	SECOND FLOOR LIGHTING PLANS
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E-121	ELECTRICAL ROOF PLAN
E-201	ELECTRICAL DETAILS
E-301	TITLE 24 ENERGY FORMS - INTERIOR LIGHTING

CONDUIT SYSTEMS NOTES

CONDUIT SYSTEMS USED ON THIS PROJECT SHALL BE AS FOLLOWS

1. PVC SCHEDULE 40 - underground/below slab with GRS elbows and risers tape wrapped).
2. ELECTRICAL METALLIC CONDUIT (EMT) - above grade/slab in building construction and where exposed above 8'-0" aff.
3. GALVANIZED RIGID STEEL (GRS) - where exposed below 8'-0" aff. and/or where subject to physical damage.
4. FLEXIBLE STEEL CONDUIT - above ceilings and/or concealed in building construction (seal tight flex required in exterior locations).
6. MC CABLE NOT ALLOWED.

REFER TO SECTION 260533 & 260500 OF SPECIFICATIONS FOR ADDITIONAL INFORMATION. CONDUITS SHALL BE MINIMUM 3/4" UNLESS OTHERWISE NOTED. CONDUIT SIZES, WHERE NOT NOTED ON THE DRAWINGS, SHALL BE SIZED FOR MAXIMUM 40% FILL PER CEC 310-6.

ADDITIONAL CONDUIT REQUIREMENTS.

- ROUTE CONDUIT(S) BELOW GRADE OR ABOVE CEILING SO THAT WALL OUTLETS, DEVICES, AND CONDUITS IN ALL EXPOSED BRICK WALL LOCATIONS SHALL BE RECESSED MOUNTED INSIDE BRICK. LOCATE DEVICES AT CELL WITH REINFORCEMENT CENTER AT BRICK AND/OR ONE CELL OVER AWAY FROM JAMB. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR CMU WALL LOCATIONS SECTIONS, AND DETAILS.
- REFER TO ELECTRICAL DETAILS FOR METAL PIPE PENETRATION THRU FIRE RATED WALL. PENETRATION OF FIRE-RESISTIVE WALLS AND FLOOR CEILINGS SHALL BE PROTECTED AS REQUIRED IN CBC SECTION 714.
- REFER TO ELECTRICAL DETAIL FOR DEVICE INSTALLATION FOR FIRE RATED WALLS.
- NO CONDUITS OR PIPING IN ANY SPACE SHALL BE EXPOSED AT THE CEILING AND WALL (COORDINATE WITH ALL DISCIPLINES PRIOR TO CONSTRUCTION). LOCATE ALL CONDUIT WITHIN WALLS

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CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

SHEET TITLE: ELECTRICAL GENERAL NOTES

REGISTERED PROFESSIONAL ENGINEER — JEFFREY M. THOMA — NO. 20823 — ELECTRICAL — STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	JT
SCALE:	As indicated
DATE:	4/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	E-001

Sep 13, 2024 - 12:41pm - Chris - C:\Users\chris\appdata\local\temp\AcPublish_27704\24.003\E-001 - ELECTRICAL GENERAL NOTES.dwg

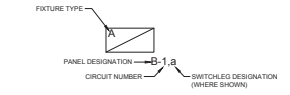
ABBREVIATIONS

A	AMPERE	DIA	DIAMETER	GND	GROUND	MTTB	MAIN TELEPHONE TERMINAL BOARD
AB	AMP BREAKER	DISC	DISCONNECT	GRS	GALVANIZED RIGID STEEL	MTTC	MAIN TELEPHONE TERMINAL CABINET
ABAND	ABANDONED	DIST	DISTRIBUTION	GWS	GANG WITH SWITCH	MW	MICROWAVE
ABV	ABOVE	DPST	DOUBLE POLE SINGLE THROW	H	HEIGHT, HIGH	N	NEUTRAL (GROUNDED CONDUCTOR)
AC	ALTERNATING CURRENT	DW	DISHWASHER	HACR	HEATING, AC & REFRIG	(N)	NEW
AC-#	AIR CONDITIONER	EM	EMERGENCY	HID	HIGH INTENSITY DISCHARGE	N3R	NEMA 3R
ADJ	ADJACENT	(E)	EXISTING	HO	HIGH OUTPUT	NC	NORMALLY CLOSED
AF	AMP FUSE, AMP FRAME	EA	EACH	HOA	HAND-OFF-AUTO	NEC	NATIONAL ELECTRICAL CODE
AFF	ABOVE FINISH FLOOR	EB	ELECTRONIC BALLAST	hp	HORSEPOWER	NEMA	NAT'L ELEC MANUFACTURER'S ASSOC
AFG	BOVE FINISH GRADE	EC	ELECTRICAL CONTRACTOR	HPF	HIGH POWER FACTOR	NIC	NOT IN CONTRACT
AIC	AMPERES INTERRUPTING CAPACITY	EC-#	EVAPORATIVE COOLER	HPS	HIGH PRESSURE SODIUM	NL	NIGHT LIGHT
AI	ALUMINUM	EF-#	EXHAUST FAN	IC	INTERCOM	NO	NORMALLY OPEN
AS	AMP SWITCH RATING	EL	EVENING LIGHT	ID	IDENTIFICATION	NPF	NORMAL POWER FACTOR
ATS	AUTOMATIC TIME SWITCH	ELEC	ELECTRICAL	IDF	INTERMEDIATE DISTRIBUTION FRAME	NTS	NOT TO SCALE
ATS	AUTOMATIC TRANSFER SWITCH	EM	EMERG BATTERY BACKUP	IF	INSIDE FROST	OC	ON CENTER
AV	AUDIBLE/AUDIO VISUAL		EMERGENCY BALLAST	IG	ISOLATED GROUND	OCP	OVERCURRENT PROTECTION
AWG	AMERICAN WIRE GAGE	EMERG	EMERGENCY	J-BOX	JUNCTION BOX	OD	OUTSIDE DIAMETER
BFG	BELOW FINISH GRADE	EOL	END OF LINE	k	QUANTITY 1000	OH	OVERHEAD
BIL	BASIC IMPULSE LEVEL	EQUIPT	EQUIPMENT	kVA	KILOVOLTAMPS	OSA	OFFICE of the STATE ARCHITECT
BLDG	BUILDING	ES	ENERGY SAVING	kW	KILOWATT	OSHPD	OFFICE of STATEWIDE HEALTH
C	CONDUIT	(EXN)	(E) IN (N) LOCATION	LC	LIGHTING CONTACTOR		PLANNING & DEVELOPMENT
-C	CATV CONDUIT	(EXR)	(E) TO BE (R)	LPS	LOW PRESSURE SODIUM	OVLD	OVERLOAD
CAB'T	CABINET	EXT	EXTERIOR	LRA	LOCKED ROTOR AMPS	P	POLE
CATV	CABLE TELEVISION	F	FLUORESCENT	LS	LIFE SAFETY BRANCH	PA	PUBLIC ADDRESS
CB	CIRCUIT BREAKER, CODE BLUE	(F)	FUTURE	LT	LIGHT	PB	PULLBOX
CBC	CA. BUILDING CODE	F-#	FURNACE	LTG	LIGHTING	PC	PULL CHAIN
CEC	CA. ELECTRICAL CODE	FA	FIRE ALARM	LV	LOW VOLTAGE	PC	PHOTOCELL
	CA. ENERGY COMMISSION	FACP	FIRE ALARM CONTROL PANEL	MC	MECHANICAL CONTRACTOR	PC	PLUMBING CONTRACTOR
CF	COMPACT FLUORESCENT	FAT	FIRE ALARM TERMINAL	MCA	MINIMUM CKT AMPS	ph	PHASE
CFC	CALIFORNIA FIRE CODE	FAU	FORCED AIR UNIT	MCB	MAIN CIRCUIT BREAKER	PNL	PANEL
CLG	CEILING	FBO	FURNISHED BY OTHERS	MCTB	MAIN CATV TERMINAL BOARD	POC	POINT OF CONNECTION
CL	CENTER LINE	FC-#	FAN COIL	MCTC	MAIN CATV TERMINAL CABINET	-PP-	POWER PRIMARY
CKT	CIRCUIT	FLA	FULL LOAD AMPS	MDF	MAIN DISTRIBUTION FRAME	-PS-	POWER SECONDARY
CNTR	CONTRACTOR	FLR	FLOOR	MECH	MECHANICAL	PV	PHOTOVOLTAIC
C.O.	CONDUIT ONLY (W/PULLROPE)	FLUOR	FLUORESCENT	MFR	MANUFACTURER	(R)	RELOCATE(D)
COND	CONDUIT, CONDUCTOR	FS	FUSIBLE SWITCH	MFS	MAIN FUSIBLE SWITCH	RECEPT	RECEPTACLE
CR	CRITICAL BRANCH	FVNR	FULL VOLTAGE NON-REVERSING	MH	METAL HALIDE	REF	REFRIGERATOR
CSFM	CALIFORNIA SFM	G	GROUNDING CONDUCTOR	MLO	MAIN LUGS ONLY	REQ'D	REQUIRED
CT	CURRENT TRANSFORMER	GC	GENERAL CONTRACTOR	MOCP	MAXIMUM OCP	RLA	RATED LOAD AMPS
Cu	COPPER	GD	GARBAGE DISPOSAL	MPOE	MINIMUM POINT OF ENTRY	RM	ROOM
CU-#	CONDENSING UNIT	GFCI	GROUND FAULT CIRCUIT	MSB	MAIN SWITCHBOARD	RMC	RIGID METAL CONDUIT
D	DEPTH		INTERRUPTER	MT	MOUNT	RMV	REMOVE
DC	DIRECT CURRENT	GFI	GROUND FAULT CIRCUIT	MT HT	MOUNTING HEIGHT	RPLC	REPLACE
DF	DRINKING FOUNTAIN		INTERRUPTER	MTS	MANUAL TRANSFER SWITCH	RS	RAPID START

SC	SIGNAL CABINET	WP	WEATHERPROOF (NEMA 3R)
SCC	SHORT CKT CURRENT	XFMR	TRANSFORMER
SFM	STATE FIRE MARSHAL	+48	INDICATES MOUNTING HEIGHT AFF
SHT	SHEET		
SL	SLIMLINE, SWITCH LEG		
SPEC	SPECIFICATION		
SPST	SINGLE POLE SINGLE THROW		
SQ	SQUARE		
STRG	STORAGE		
SURF	SURFACE		
SVC	SERVICE		
SW	SWITCH		
T	TRANSFORMER, TERMINAL		
-T-	TELEPHONE CONDUIT		
(TBR)	TO BE REMOVED		
TC	TIME CLOCK		
TEL	TELEPHONE		
TELCO	TELEPHONE COMPANY		
TS	TIME SWITCH		
TSO	TIME SWITCH OVERRIDE		
TSP	TWISTED SHIELDED PAIR		
TTB	TELEPHONE TERMINAL BOARD		
TTC	TELEPHONE TERMINAL CABINET		
TX	TRANSFORMER		
TYP	TYPICAL		
TYP SIM	TYPICAL SIMILAR		
UC	UNDERCABINET; UNDERCOUNTER		
UG	UNDERGROUND		
UGPS	UNDERGROUND PULL SECTION		
UL	UNDERWRITERS LABORATORIES		
UON	UNLESS OTHERWISE NOTED		
USA	UG SVC ALERT 800-642-2444		
V	VOLT		
VA	VOLT AMPERES		
VAC	VOLT ALTERNATING CURRENT		
VHO	VERY HIGH OUTPUT		
VOLT	VOLTAGE		
VR	VANDAL-RESISTANT		
W	WIDTH, WATT, WIRE		
WH-#	WATER HEATER		
WP	WEATHERPROOF (NEMA 3R)		
XFMR	TRANSFORMER		
+48	INDICATES MOUNTING HEIGHT AFF		

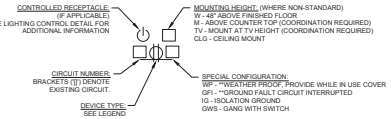
CIRCUITING LEGEND

LIGHTING PLAN



- PROVIDE ALL BRANCH CIRCUIT WIRING FROM FIXTURES TO PANEL(S) AS DESCRIBED BY CIRCUIT NUMBERS SHOWN.
- PROVIDE ALL WIRING BETWEEN FIXTURES AND CONTROL DEVICES AS DESCRIBED IN REFERENCE NOTES AND/OR SHOWN BY SWITCHLEG DESIGNATIONS.
- EXIT AND EMERGENCY LIGHT FIXTURES SHALL BE CONNECTED TO AN UNSWITCHED BRANCH CIRCUIT CONDUCTOR.
- HOME RUN CONDUITS SHALL BE 3/4"C., MAX OF (3) BRANCH CIRCUITS PER CONDUIT.
- PROVIDE ALL BRANCH CIRCUIT WIRING FROM MECH. EQUIPMENT TO PANELS.

POWER PLAN



- PROVIDE ALL BRANCH CIRCUIT WIRING FROM DEVICES TO PANEL(S) PER DESIGNATIONS/CIRCUIT NUMBERS.
- EACH BRANCH CIRCUIT SHALL HAVE A SEPARATE NEUTRAL AS INDICATED ON PANEL SCHEDULES.
- HOME RUN CONDUITS SHALL BE 3/4"C, MAX OF (3) BRANCH CIRCUITS PER CONDUIT.
- INCREASE HOME RUN CONDUIT SIZE TO 1"C FOR (4) BRANCH CIRCUITS OR MORE.
- (**) DENOTES SPECIAL DEVICE/NAMEPLATE REQUIREMENTS.

NOTE: THE INTENT OF THE DRAWINGS IS TO SHOW FIXTURE / DEVICE LOCATIONS AND PANEL DESIGNATIONS. ALL BRANCH CIRCUIT WIRING, MEETING THE CRITERIA NOTED ABOVE, WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. LIGHTING AND POWER PLANS SHOW AN ABOVE CEILING JUNCTION BOX / HOME RUN WITH CIRCUIT NUMBERS BY FIXTURES / DEVICES. PROVIDE ALL BRANCH CIRCUITING AS REQUIRED FOR A COMPLETE INSTALLATION. DOCUMENT ALL BRANCH CIRCUITING ON AS-BUILT DRAWINGS ACCURATELY REFLECTING THE INSTALLATION.

LEGEND

NOTE: INTERPRET IN CONTEXT

SOUND

- SPEAKER- CLG FLUSHMOUNT
- SPEAKER- WALLMOUNT
- MICROPHONE INPUT
- AUXILIARY INPUT
- HEADSET OUTLET
- VOLUME CONTROL
- SPEAKER- CLG FLUSHMOUNT VANDAL-RESISTANT
- CLOCK/SPEAKER WALLMOUNT SEMI-FLUSH

MISCELLANEOUS

- MOTOR
- THERMOSTAT
- CIRCUIT BREAKER
- FUSIBLE SWITCH
- GROUND
- PHASE
- CLOCK
- CLOCK/SPEAKER COMBINATION
- WALL MOUNTED CLOCK
- PUSHBUTTON
- FLUSHMOUNT PANEL
- SURFACEMOUNT PANEL
- FLUSHMOUNT CABINET
- SURFACEMOUNT CABINET
- DAMPER MOTOR
- HUMIDISTAT
- MAGNETIC CONTACTOR
- COMBINATION STARTER
- SAFETY DISCONNECT
- JUNCTION BOX

CONVENTIONS

- X — NUMBERED SHEET NOTES: REFERS TO NOTES ON SAME SHEET AS REFERENCE
- 3103 — FEEDER SCHEDULE DESIGNATION (EXAMPLE: 3103 = 310 AMPERE, 600V, 3 CURRENT CARRYING CONDUCTORS, PREFIXES: 'M' INDICATES MEDIUM VOLTAGE, 'CO14' INDICATES CONDUIT ONLY, QUANTITY (1) AND SIZE (4")
- DETAIL REFERENCE: Z = DETAIL DESIGNATION, X = SHEET NUMBER REFERENCE
- MECHANICAL SYSTEMS TAG (REFER TO MECHANICAL SHEETS) Y = UNIT TYPE, X = UNIT NUMBER

FIRE ALARM

- FIRE ALARM CONTROL PANEL
- REMOTE POWER SUPPLY
- HORN- AUDIBLE DEVICE
- VISUAL- VISUAL DEVICE
- AUDIBLE-VISUAL
- SPEAKER/VISUAL
- FLOW SWITCH
- TAMPER SWITCH
- MANUAL PULL STATION
- SMOKE DETECTOR
- DUCT SMOKE DETECTOR
- SMOKE DETECTOR WITH CO
- SMOKE DETECTOR WITH VISUAL
- SMOKE DETECTOR WITH SOUND
- SMOKE FIRE DAMPER
- HEAT DETECTOR
- BELL
- END OF LINE RESISTOR

NOTE: "C" NEXT TO NOTIFICATION DEVICE ON PLANS DENOTES MOUNT AT CEILING

CONDUIT/WIRE

- NEW
- UNDERGROUND
- NEW POWER HOMERUN (3 HOTS & NEUT SHOWN)
- ISOLATED GROUND
- EXISTING TO REMAIN
- (E) POWER HOMERUN
- WIRE LINE- CONTINUES
- CONDUIT STUB (W/MARKER)
- VERTICAL CONDUIT RUN
- CONDUIT SEAL
- FLEXIBLE CONNECTION
- LOW VOLTAGE
- SURFACEMOUNT RACEWAY
- INDICATES LINE CONTINUES
- CORD W/PLUG

LIGHT FIXTURES

- CEILING SURFACEMOUNT
- WALL SURFACEMOUNT
- PENDANT MOUNT
- RECESSED DOWNLIGHT
- RECESSED WALLWASH
- RECESSED
- SURFACE
- STRIP UON
- TRACK LIGHT
- DIRECTIONAL FLOOD
- EMERGENCY FIXTURE
- POLE LIGHT
- POLE LIGHT- DECORATIVE
- UPLIGHT- FLUSH IN GRADE
- BOLLARD
- TANDEM-WIRED LAMPS
- UNDERCABINET LIGHT
- WALL SURFACE MOUNT LINEAR TYPE
- PENDANT LINEAR
- RECESSED WALL MOUNT
- WALL-PACK
- EXIT LIGHT- WALL
- EXIT LIGHT- CEILING (ARROW INDICATES DIRECTION)
- LETTER ADJACENT INDICATES FIXTURE TYPE
- LED COVE & UNDERCABINET LIGHT PER FIXTURE SCHEDULE

POWER LEGEND

- 20A SINGLE RECEPTACLE
- 20A DUPLEX RECEPTACLE
- 20A DUPLEX- HALF SWITCHED
- 20A SWITCHED RECEPTACLE
- 20 DOUBLE DUPLEX RECEPTACLE
- CLG — 20A CEILING MOUNTED OUTLET
- GFCI — 20A (GFCI) GROUND FAULT CURRENT INTERRUPTER DEVICE
- 20A MOUNT ABOVE COUNTER PER ADA.
- MOUNT AT +48" MEASURED TO TOP OF BOX.
- WP — WHILE-IN USE NEMA 3R COVER (TAYMAC #MX4280S OR ENGINEER APROVED EQUAL UNLESS OTHERWISE NOTED)
- 208V 1Ø RECEPTACLE
- FLOOR MOUNTED OUTLET
- GWS — GANG WITH SWITCH
- USB — 20AMP DUPLEX OUTLET WITH TYPE A AND TYPE C USB CHARGER
- TV — TELEVISION OUTLET. VERIFY MOUNTING HEIGHT PRIOR TO ROUGH-IN.
- DROP CORD RECEPTACLE
- COMBINATION POWER/DATA FLOOR BOX.
- DISCONNECT FUSE OR NON FUSED
- GROUND BAR
- SF — WALL MOUNTED SYSTEM FURNITURE POWER CONNECTION.

COMMUNICATION LEGEND

- SF — WALL MOUNTED SYSTEM FURNITURE COMMUNICATION CONNECTION.
- TELE POWER POLE
- # — NEW FLUSH MOUNTED DATA OUTLET SHOWN. X DENOTES TOTAL CAT6A CABLES AND PORT FACEPLATE
- TV — MOUNT DATA OUTLET AT TV HEIGHT. PROVIDE 1-CAT6A CABLE.
- CAM — SECURITY CAMERA
- WIRELESS ACCESS POINT

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE

ELECTRICAL LEGEND AND ABBREVIATIONS

SHEET TITLE

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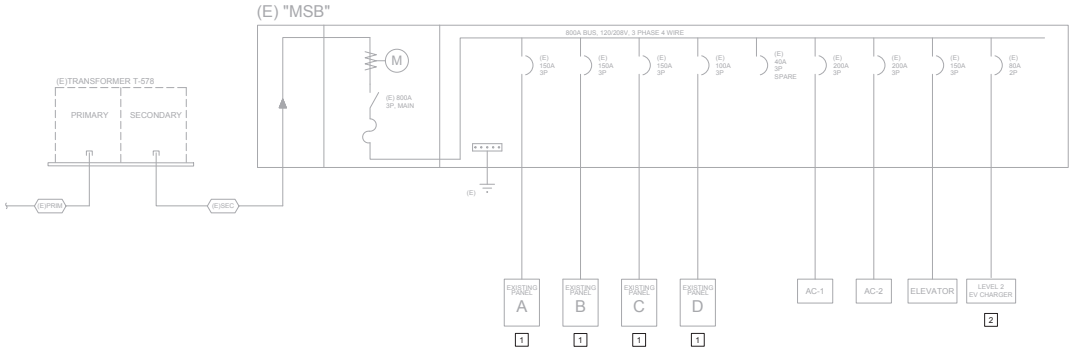
REGISTERED PROFESSIONAL ENGINEER — JEFFREY M. THOMA — NO. 20823 — ELECTRICAL — STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	JT
SCALE:	As indicated
DATE:	4/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	E-002

Sep 13, 2024 - 12:41pm - Chris - K:\ENG\2024\24-0028\24-0028_E-002 - ELECTRICAL LEGEND & ABBREVIATIONS.dwg



1 (E) "MSB" SINGLE LINE DIAGRAM

(E) "MSB" Load Calculations

			Load	Units
(E) Mechanical Unit AC-1 (120/1 for largest load)			127.4	kVA
(E) Mechanical Unit AC-2			10.9	kVA
(E) Elevator			88.6	kVA
(E) Loads at Panels @ 100%			13.34	kVA
(E) Panel "A"	4,000	VA		
(E) Panel "B"	600	VA		
(E) Panel "C"	7,040	VA		
(E) Panel "D"	800	VA		
(N) Mechanical Load (IT Room)			3.53k	kVA
(E) Level 2 EV Charger (SITE PROJECT)			8.320	kVA
General Lights / Plugs (10,922SF @ 3W/SF)	10922	SF	32.766	kVA
	3	W/SF		
Total Load			**284.857**	**kVA**
			791	**A**
(E) "MSB" Service: 800A, 120/208V, 3Ø, 4W				

2 "MSB" LOAD CALCULATIONS

INTERIOR LIGHTING FIXTURE SCHEDULE

TYPE	ILLUSTRATION	MANUFACTURER	CATALOG NO.	VOLTAGE	MAX. VA.	LAMPING	MOUNTING	DESCRIPTION
D1		LITHONIA	LDN4 40/10 LO4 AR LD TRW MVOLT EZ1	MVOLT	11	LED 4000K	RECESSED	4" RECESSED LED DOWNLIGHT.
W1		LITHONIA	FMVCCLS 24IN MVOLT BN	MVOLT	18.12	LED 4000K	WALL ABOVE MIRROR	2' CONTEMPORARY CYLINDER VANITY
W2		LITHONIA	FMVCCLS 48IN MVOLT BN	MVOLT	34.86	LED 4000K	WALL ABOVE MIRROR	4' CONTEMPORARY CYLINDER VANITY

EXIT SIGN AND EMERGENCY LIGHTING FIXTURE SCHEDULE

TYPE	ILLUSTRATION	MANUFACTURER	CATALOG NO.	VOLTAGE	MAX. VA.	LAMPING	MOUNTING	DESCRIPTION
X1		ISOLITE	EDC-EM-R-1-XX-XX -MTEBP	MVOLT	5	LED	UNIVERSAL	UNIVERSAL MOUNT LED EXIT SIGN WITH UNIVERSAL FIELD SELECTABLE CHEVRONS AND EMERGENCY BATTERY BACKUP.
X2		ISOLITE	CMB-EM-R-U-XX -MTEBP-L1	MVOLT	8	LED	UNIVERSAL	UNIVERSAL MOUNT LED EXIT SIGN AND EMERGENCY LIGHT COMBO WITH UNIVERSAL FIELD SELECTABLE CHEVRONS AND EMERGENCY BATTERY BACKUP.
XM		ISOLITE	BUG-3W-WH-MB	MVOLT	6	LED	SURFACE	LED EMERGENCY LIGHT.
XME		ISOLITE	OWL-EM-XX-MB	MVOLT	17	LED	WALL	EXTERIOR LED EMERGENCY LIGHT.

□ REFERENCE NOTES

1. EXISTING PANELBOARDS. SEE POWER / SIGNAL FLOOR PLANS FOR LOCATION. INFORMATION LOAD DESCRIPTIONS ON EXISTING PANELS WAS GAINED FROM ORIGINAL BUILDING ELECTRICAL PLANS AND SHALL BE FIELD VERIFIED. CONFIRM LOAD ON EACH CIRCUIT OF ALL EXISTING PANELS PROVIDE UPDATED TYPEWRITTEN CIRCUIT DIRECTORY (IN PLASTIC SLEEVE) FOR EACH EXISTING PANELBOARD.
2. DESIGN IN SITE SCOPE SEPARATE PERMIT.

SINGLE LINE DIAGRAM NOTES

A. ALL CONDUCTORS SHALL BE COPPER WITH TYPE [THHN/THWN] INSULATION UNLESS OTHERWISE NOTED.

B. ALL SWITCHES, CIRCUIT BREAKERS AND OTHER EQUIPMENT, AS SPECIFIED, SHALL HAVE TERMINATION PROVISIONS LISTED AND IDENTIFIED FOR USE WITH 75 DEG. CONDUCTORS, AND ALL FEEDER CONDUCTORS, AND CONDUITS, ARE SIZE BASED ON USE OF 75 DEG. C COPPER WIRES TYPE THWN/THHN.

C. ALL EQUIPMENT SHALL HAVE AN APPROVED TESTING LABORATORY LABEL ATTACHED [UL, CSA, ETC.] (CEC 110-2).

LIGHTING FIXTURE SCHEDULE NOTES

A. ILLUSTRATIONS AND/OR DIMENSIONS ARE APPROXIMATIONS ONLY INTENDED TO REPRESENT BASIC FIXTURE TYPE; DO NOT USE AS EXACT INFORMATION SOURCE. REFER TO MANUFACTURER CUT SHEETS.

B. EXACT LOCATIONS: BEFORE CONSTRUCTION, VERIFY WITH ARCHITECT EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHT FIXTURES. SEE ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS AS APPLICABLE.

C. FIXTURE BRANCH CIRCUIT THROUGH-WIRING: VERIFY AND COMPLY WITH FIXTURE MANUFACTURER RESTRICTIONS AS DETERMINED BY UL. & NEC.

D. VERIFY CEILING TYPES/FINISHES FOR ALL RECESSED FIXTURES PRIOR TO FORWARDING SUBMITTALS.

E. ALL RECESSED LUMINAIRES IN CEILINGS SHALL BE LISTED TYPE IC.

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE

ELECTRICAL SINGLE LINE

SHEET TITLE

REGISTERED PROFESSIONAL ENGINEER JEFFREY M. THOMA NO. 20823 ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

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APPROVED BY:	JT
SCALE:	As indicated
DATE:	4/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	E-003

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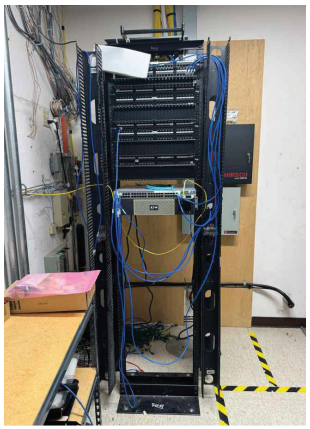
REFERENCE NOTES

1. REMOVE AND DISCONNECT OUTLET.
2. REMOVE AND DISCONNECT DATA WIRING FROM EXISTING DATA RACK.
3. REMOVE AND DISCONECT EXISTING OUTLET AT DEMO WALL. RE-USE EXISTING BRANCH CIRCUITS AT NEW OUTLETS.
4. EXISTING FLOOR BOX SHOWN ON AS-BUILT. FIELD VERIFY EXACT LOCATION UNDER CARPET. VERIFY EXISTING BRANCH CIRCUIT AND LABEL.
5. DISCONNECT/REMOVE EXISTING JUNCTION BOX AT FLOOR. CAP EXISTING CONDUIT.
6. EXISTING (17)CAT6 CABLES AT FLOOR. RE-USE (4)CAT6 FOR OUTLETS AT NEW WALL. TONE EXISTING CABLES NOT USED AND DISCONNECT CABLES AT EXISTING DATA RACK. PULL EXISTING CABLES FROM CEILING SPACE. COORDINATE WITH CITY IT FOR ADDITIONAL REQUIREMENTS PRIOR TO DEMO. CAP EXISTING CONDUITS.
7. RE-USE EXISTING BRANCH CIRCUIT TO POWER NEW OUTLETS AT NEW WALL. INTERCEPT EXISTING BRANCH CIRCUIT ABOVE T-BAR CEILING AND EXTEND NEW BRANCH CIRCUIT TO NEW OUTLETS.
8. EXISTING 6-DATA TO BE RELOCATED TO SOUTH WALL.
9. REMOVE EXISTING DOUBLE DUPLEX. RE-USE EXISTING BRANCH CIRCUITS FOR NEW SYSTEM FURNITURE. INTERCEPT EXISTING BRANCH CIRCUITS ABOVE-TBAR CEILING AND EXTEND NEW BRANCH CIRCUIT.
10. EXISTING FLOOR MOUNTED DATA RACK. PROVIDE AND INSTALL (2)48 CAT6A PORT AT EXISTING DATA RACK. HOMERUN ALL NEW FIRST FLOOR CAT6A CABLES TO THIS RACK.



1 EXISTING DATA RACK AT ELECTRICAL ROOM

NOTE: ALL DEVICES SHOWN ON THIS PAGE ARE EXISTING UNLESS OTHERWISE NOTED)

POWER / SIGNAL DEMOLITION FIRST FLOOR PLAN

SCALE: 3/16"=1'-0"

NORTH

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

SHEET TITLE: POWER / SIGNAL DEMOLITION FIRST FLOOR PLAN

REGISTERED PROFESSIONAL ENGINEER JEFFREY M. THOMA NO. 20823 ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

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CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	ED-101

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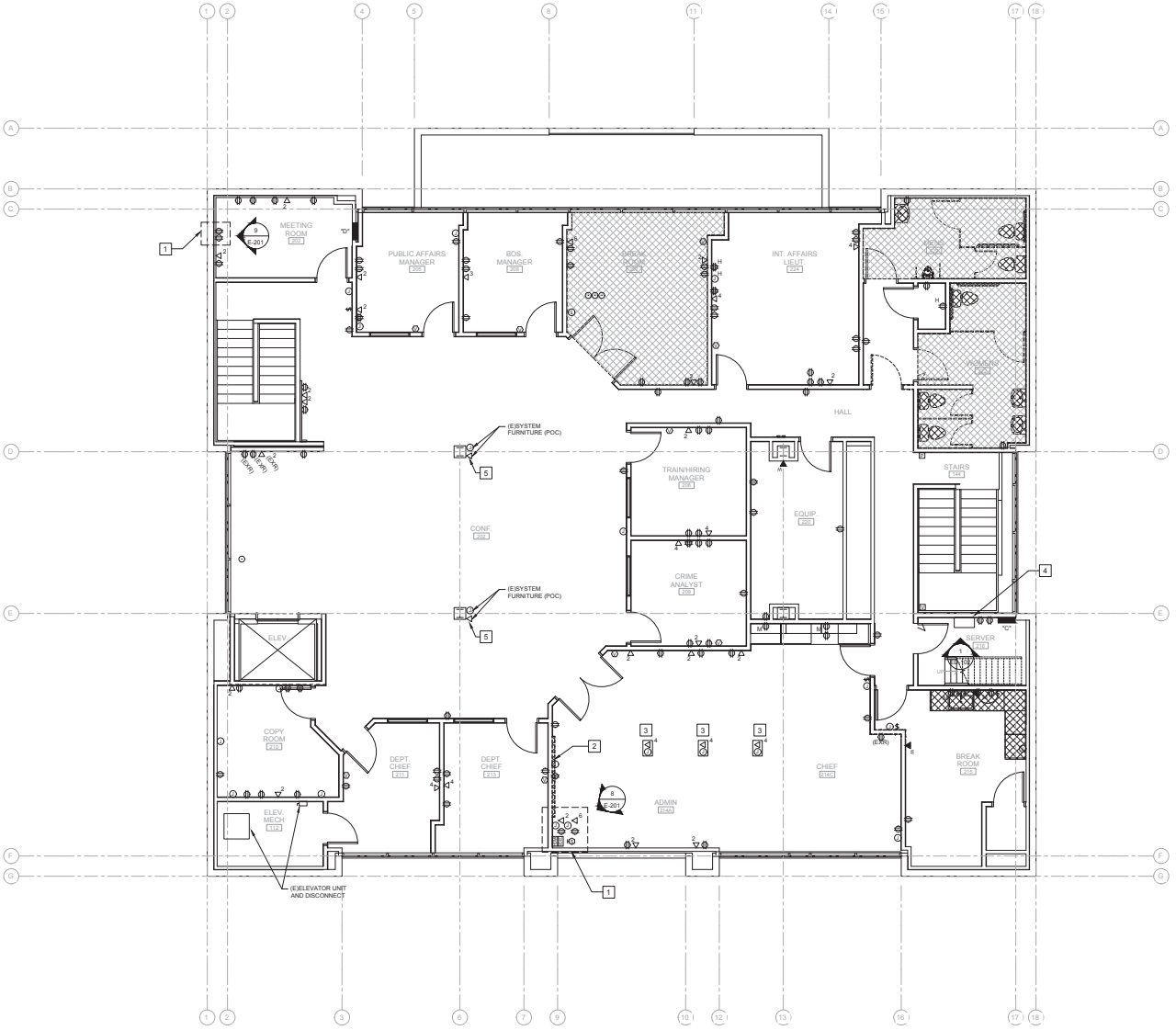


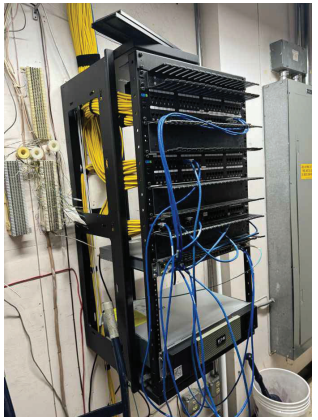
POWER / SIGNAL DEMOLITION SECOND FLOOR PLAN

SCALE: 3/16"=1'-0"

NORTH

REFERENCE NOTES

1. REMOVE EXISTING SURFACE MOUNT RACEWAY AT THIS AREA.
2. DISCONNECT EXISTING MOTORIZED SCREEN AND RECONNECT TO NEW LOCATION.
3. PROTECT EXISTING FLOOR BOXES IN THIS ROOM.
4. EXISTING WALL MOUNTED DATA RACK. PROVIDE AND INSTALL (1)24 CAT6A DATA PORT. HOMERUN ALL NEW SECOND FLOOR CAT6A TO THIS CABINET.
5. EXISTING SYSTEM FURNITURE CONNECTIONS. RE-USE (2) CAT6 CABLES AND TERMINATE TO NEW WALL TV OUTLETS. RE-USE THE REST OF THE CAT6 CABLES AND TERMINATE TO FACEPLATE AND STANDARD HEIGHT. FIELD VERIFY EXACT LOCATION OF SYSTEM FURNITURE. FURNITURE WERE IN THE WAY TO VERIFY IF THE SOUTH PILLAR HAD CONNECTIONS. RE-USE EXISTING BRANCH BRANCH CIRCUIT TO POWER NEW OUTLETS AT NEW WALL.



1 EXISTING DATA RACK AT ELECTRICAL ROOM

NOTE: ALL DEVICES SHOWN ON THIS PAGE ARE EXISTING UNLESS OTHERWISE NOTED)

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PROJECT TITLE: 1106 WALNUT TENANT IMPROVEMENT

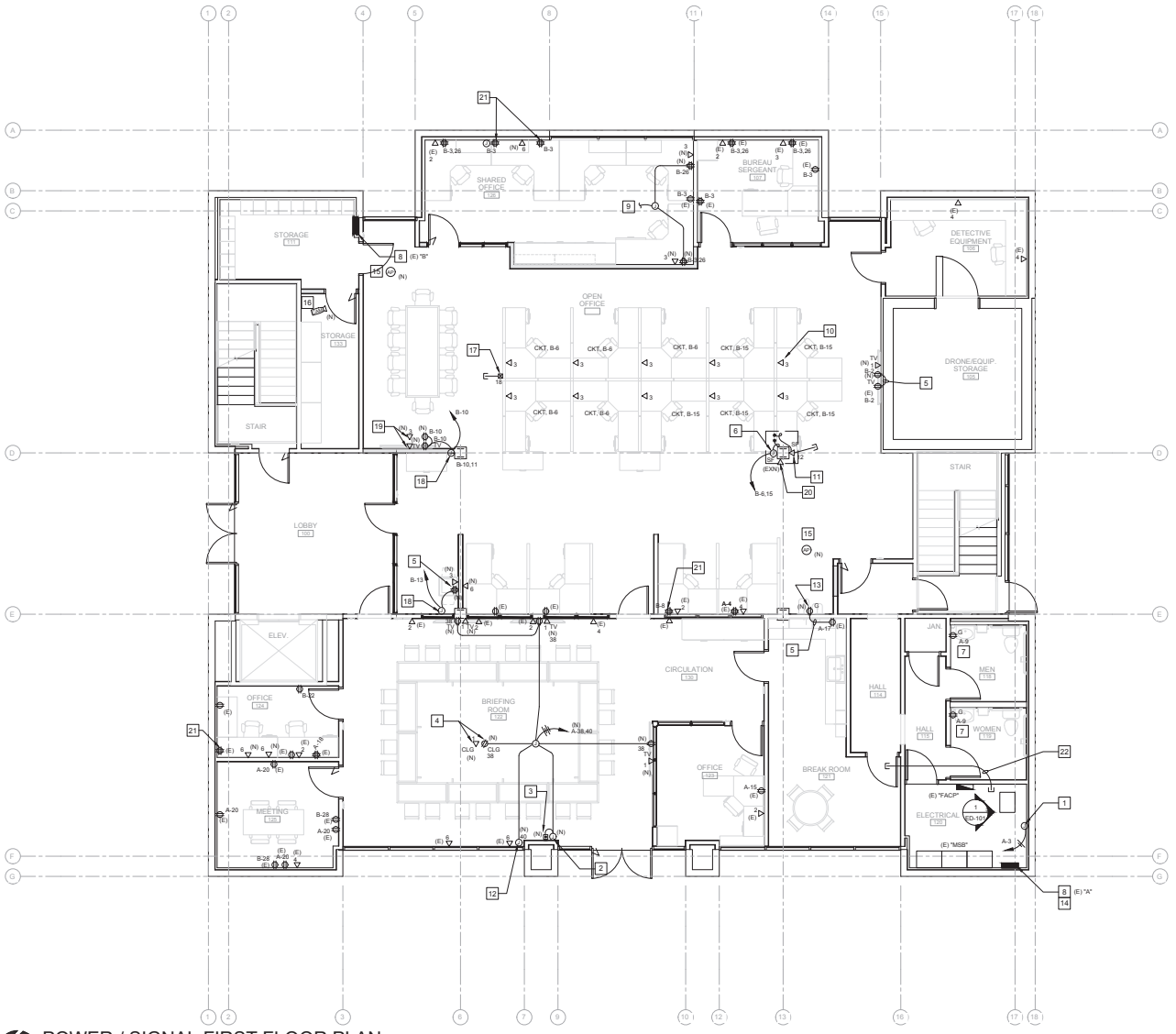
SHEET TITLE: POWER / SIGNAL DEMOLITION SECOND FLOOR PLAN

REGISTERED PROFESSIONAL ENGINEER JEFFREY M. THOMA NO. 20823 ELECTRICAL STATE OF CALIFORNIA
EXPIRES: 09/30/26
THOMA #24-8026

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	JT
SCALE:	As indicated
DATE:	6/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	ED-102

Sep 13, 2024 - 12:41pm - Chris - K:\ENG\2024\24-8026\24-8026_ED-102 - 2ND FLR PWR & SIG DEMO PLN.dwg

NOTE: CUT AND PATCH EXISTING WALLS WHERE NEW OUTLETS ARE SHOWN.



POWER / SIGNAL FIRST FLOOR PLAN

SCALE: 3/16"=1'-0"

NORTH

REFERENCE NOTES

1. PROVIDE 120V DEDICATED CIRCUIT FOR DOOR ACCESS CONTROL PANEL. COORDINATE EXACT LOCATION WITH CITY VENDOR PRIOR TO ROUGH-IN. CONNECT TO EXISTING SPARE BREAKER AT PANEL "A".
2. CONNECT TO MOTORIZED SCREEN. COORDINATE WITH MANUFACTURER INSTALLATION GUIDE PRIOR TO ROUGH-IN.
3. MOTORIZED SCREEN CONTROLLER. PROVIDE WIRING TO MOTORIZED SCREEN PER MANUFACTURER INSTALLATION GUIDE.
4. PROVIDE 120V CONNECTION TO PROJECTOR. VERIFY EXACT LOCATION WITH OWNER PROVIDED EQUIPMENT.
5. EXTEND EXISTING BRANCH CIRCUIT.
6. SYSTEM FURNITURE POINT OF CONNECTION. RE-USE EXISTING BRANCH CIRCUITS LOCATED ABOVE T-BAR CEILING. INTERCEPT AND EXTEND BRANCH CIRCUITS TO SYSTEM FURNITURE. COORDINATE WITH SYSTEM FURNITURE MANUFACTURE.
7. REPLACE EXISTING OUTLET WITH NEW GFCI OUTLET AND COVERPLATE.
8. EXISTING PANEL.
9. EXTEND EXISTING RECEPTACLE BRANCH CIRCUIT IN THIS ROOM TO NEW OUTLET(S).
10. EXISTING DATA OUTLET BOX IN THIS SYSTEM FURNITURE. FIELD VERIFY EXACT LOCATION. PROVIDE (3)NEW CAT6A CABLES. TYPICAL AT SYSTEM FURNITURES.
11. THIS DATA OUTLET FOR SYSTEM FURNITURE WILL REQUIRE A BOX AND 1-1/5" CONDUIT TO ACCOMMODATE (12)CAT6A CABLES.
12. PROVIDE 120V DEDICATED CIRCUIT FOR MOTORIZED BLACK OUT SHADES. COORDINATE WITH MANUFACTURER INSTALLATION GUIDE PRIOR TO ROUGH-IN.
13. CONNECTION TO NEW DRINKING FOUNTAIN. EXTEND EXISTING CIRCUIT FROM BREAK ROOM OUTLET.
14. PROVIDE (2)20A/1P BREAKER TO MATCH EXISTING TO SPACES 38 AND 40. PROVIDE UPDATED TYPED PANEL SCHEDULE.
15. WIRELESS ACCESS POINT FURNISHED AND INSTALLED BY OWNER. EC TO PROVIDE 2-PORT BISCUIT MOUNTED IN ACCESSIBLE CEILING SPACE. PROVIDE 1-CAT6A CABLES AND TERMINATE (FEMALE) AND TEST CABLE.
16. SECURITY CAMERA FURNISHED AND INSTALLED BY OWNER. EC TO PROVIDE 2-PORT BISCUIT MOUNTED IN ACCESSIBLE CEILING SPACE. PROVIDE 1-CAT6A CABLES AND TERMINATE (FEMALE) AND TEST CABLE.
17. PROVIDE 15FT TELE-POWER ONE COMPARTMENT POLE FOR (18)CAT6A TO TERMINATE AT SYSTEM FURNITURE DATA OUTLET BOXES. (WIREMOLD 30TC-2WH) EC TO PROVIDE ALL ACCESSORIES FOR A COMPLETE WORKING SYSTEM.
18. INTERCEPT EXISTING BRANCH CIRCUIT AT ACCESSIBLE CEILING SPCE NEAR EXISTING PILLAR AND EXTEND TO NEW OUTLET(S).
19. RE-USE EXISTING CAT6 CABLES AND TERMINATE AT TV AND STANDARD HEIGHT.
20. NEW LOCATION OF EXISTING DATA OUTLETS.
21. REPLACE EXISTING DUPLEX OUTLET WITH DOUBLE DUPLEX. CHANGE BOX, RING, DEVICE AND PLATE.
22. INSTALL 2-3" (EMT) CONDUIT SLEEVES ABOVE T-BAR CEILING TO FIRST FLOOR DATA RACK FOR NEW LOW VOLTAGE WIRING.

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

SHEET TITLE: POWER / SIGNAL FIRST FLOOR PLAN

JEFFREY M. THOMA — REGISTERED PROFESSIONAL ENGINEER — NO. 20823 — ELECTRICAL — STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	JT
SCALE:	As indicated
DATE:	4/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	E-101

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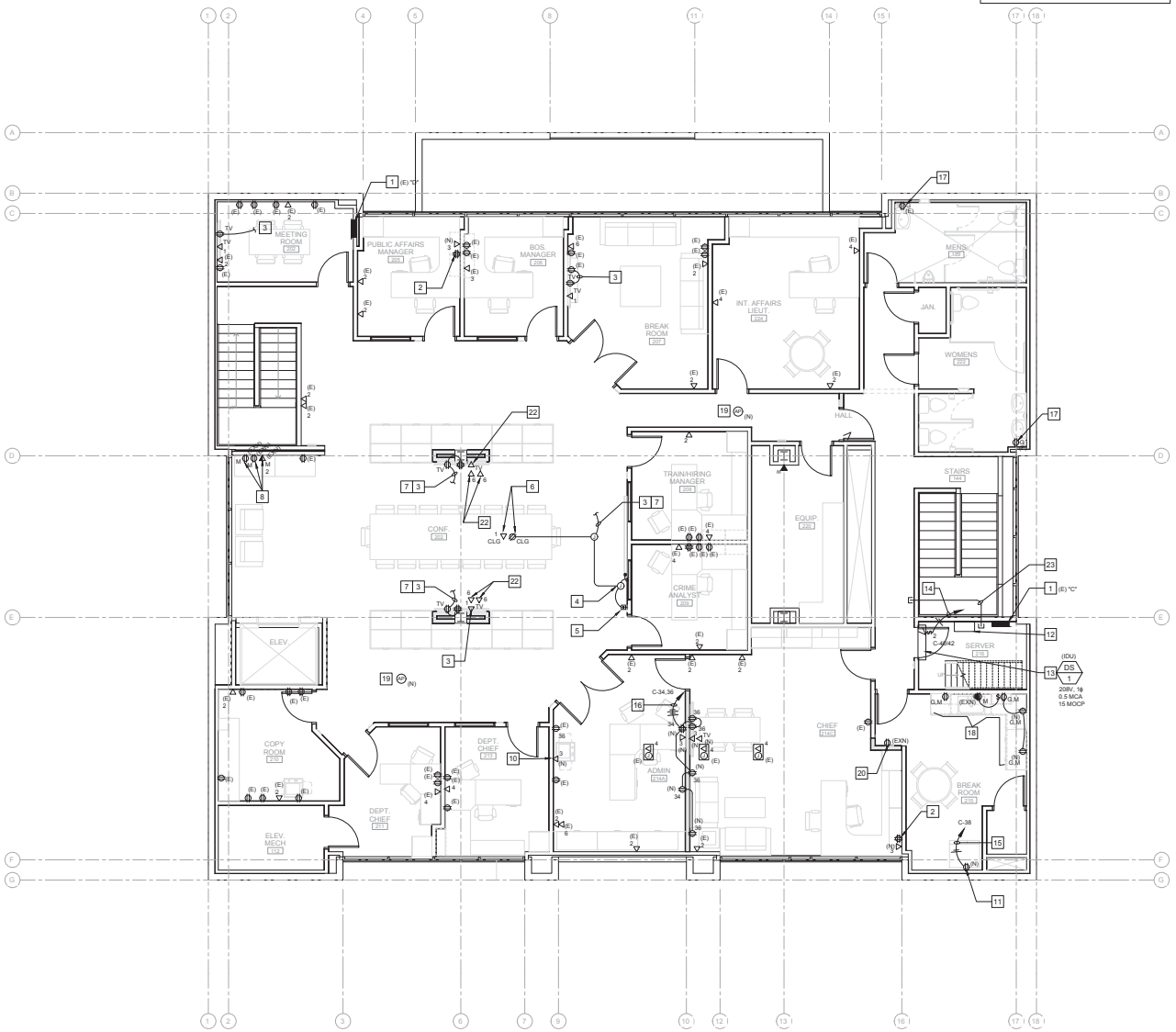
Sep 13, 2024 - 12:41pm - Chris - K:\ENG\2024\24-0028\24-0028_E-101 - 1ST FLR PWR & SIG FLR PLN.dwg

NOTE: CUT AND PATCH EXISTING WALLS WHERE NEW OUTLETS ARE SHOWN.



REFERENCE NOTES

1. EXISTING BRANCH CIRCUIT PANELBOARD.
2. REPLACE EXISTING DUPLEX OUTLET WITH NEW DOUBLE DUPLEX OUTLET.
3. EXTEND EXISTING RECEPTACLE BRANCH CIRCUIT IN THIS ROOM TO NEW OUTLET(S).
4. CONNECT TO MOTORIZED SCREEN. COORDINATE WITH MANUFACTURER INSTALLATION GUIDE PRIOR TO ROUGH-IN.
5. MOTORIZED SCREEN CONTROLLER. PROVIDE WIRING TO MOTORIZED SCREEN PER MANUFACTURER INSTALLATION GUIDE.
6. PROVIDE 120V CONNECTION TO PROJECTOR. VERIFY EXACT LOCATION WITH OWNER PROVIDED EQUIPMENT.
7. RE-USE EXISTING BRANCH CIRCUIT FROM EXISTING SYSTEM FURNITURE CONNECTION.
8. RELOCATE EXISTING RECEPTACLE AND DATA OUTLET TO BE ABOVE NEW COUNTER SPACE. INTERCEPT EXISTING BRANCH CIRCUIT TO NEW LOCATION. PROVIDE NEW DUPLEX DEVICE AND PLATE.
9. NOT USED.
10. LOCATE FOR NEW COPIER.
11. PROVIDE NEW DEDICATED CIRCUIT AND OUTLET FOR EXISTING REFRIGERATOR.
12. EXISTING WALL MOUNTED DATA RACK.
13. PROVIDE LINE VOLTAGE CONNECTION TO MECHANICAL UNIT. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH MECHANICAL PLANS AND PROVIDE 2-POLE, NEMA 1 DISCONNECT PER MANUFACTURER'S REQUIREMENTS.
14. NEW DEDICATED 20A BRANCH CIRCUIT TO EXISTING PANEL "C". PROVIDE NEW 20A/2P CIRCUIT BREAKER IN PANEL AS DESIGNATED TO MATCH EXISTING. PROVIDE (1) 3/4" CONDUIT WITH (2) #12 THWN AND (1) #12 CU GROUND.
15. NEW DEDICATED 20A BRANCH CIRCUIT TO EXISTING PANEL "C". PROVIDE NEW 20A/1P CIRCUIT BREAKER IN PANEL AS DESIGNATED TO MATCH EXISTING. PROVIDE (1) 3/4" CONDUIT WITH (2) #12 THWN AND (1) #12 CU GROUND.
16. NEW 20A BRANCH CIRCUITS TO EXISTING PANEL "C". PROVIDE (2) NEW 20A/1P CIRCUIT BREAKERS IN PANEL AS DESIGNATED TO MATCH EXISTING. PROVIDE (1) 3/4" CONDUIT WITH (4) #12 THWN AND (1) #12 CU GROUND.
17. REPLACE EXISTING OUTLET WITH NEW GFCI OUTLET AND COVER.
18. REPLACE EXISTING SWITCH AND OUTLET WITH NEW DEVICE AND PLATES. PROVIDE NEW OUTLET AS SHOWN AND EXTEND EXISTING BRANCH CIRCUIT. RE-USE EXISTING BRANCH CIRCUIT FROM EXISTING OUTLET IN THIS LOCATION.
19. WIRELESS ACCESS POINT FURNISHED AND INSTALLED BY OWNER. EC TO PROVIDE 2-PORT BISCUIT MOUNTED IN ACCESSIBLE CEILING SPACE. PROVIDE 1-CAT6A CABLES AND TERMINATE (FEMALE) AND TEST CABLE.
20. MOVE EXISTING OUTLET TO NEW WALL. INTERCEPT EXISTING BRANCH CIRCUIT AND EXTEND TO NEW LOCATION. PROVIDE NEW DEVICE AND COVER PLATE.
21. RE-USE EXISTING CAT6 CABLES AND TERMINATE AT NEW TV OUTLET
22. TERMINATE ALL EXISTING CAT6 AT EXISTING SYSTEM FURNITURE LOCATION AT WALL OUTLET AT STANDARD HEIGHT. ASSUMED (26)EXISTING CAT6 CABLES FROM EXISTING SYSTEM FURNITURE.
23. PROVIDE 2"C (EMT) SLEEVE ABOVE T-BARD CEILING FROM 2ND FLOOR DATA CABINET FOR NEW CAT6A CABLES.

POWER / SIGNAL SECOND FLOOR PLAN

SCALE: 3/16"=1'-0"

NORTH

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

SHEET TITLE: POWER / SIGNAL SECOND FLOOR PLAN

REGISTERED PROFESSIONAL ENGINEER — JEFFREY M. THOMA — NO. 20823 — ELECTRICAL — STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	JT
SCALE:	As indicated
DATE:	4/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	E-102

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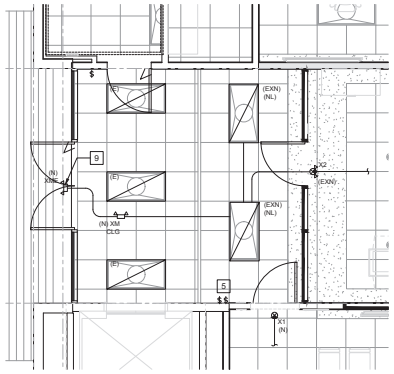
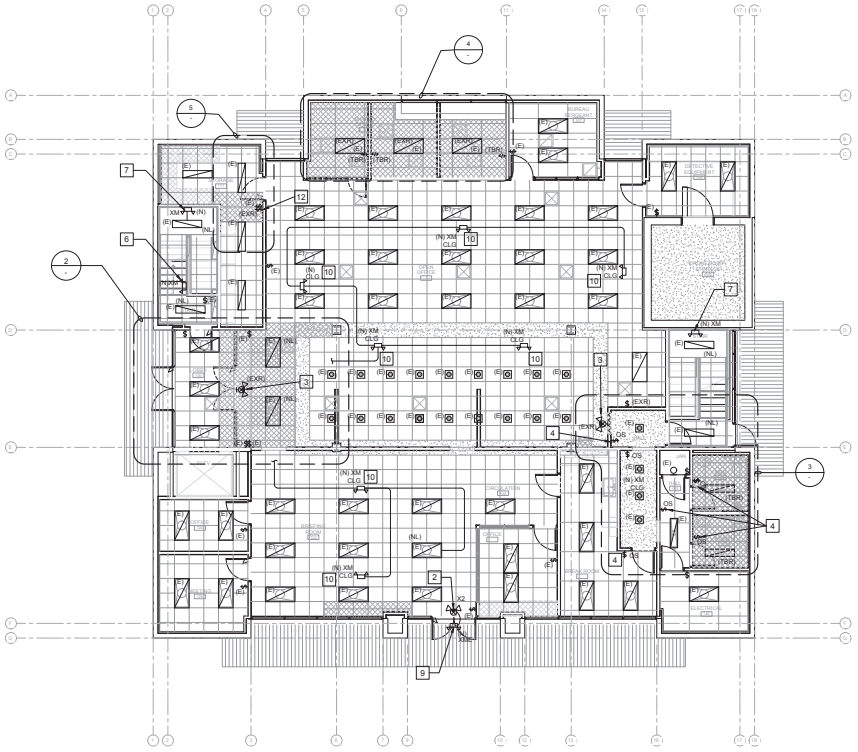
Sep 13, 2024 - 12:41pm - Chris - K:\ENG\2024\24-0028\24-0028_E-102 - 2ND FLR PWR & SIG FLR PLN.dwg



PARTIAL FIRST FLOOR
LIGHTING PLAN AT LOBBY

2 SCALE: 1/4"=1'-0"

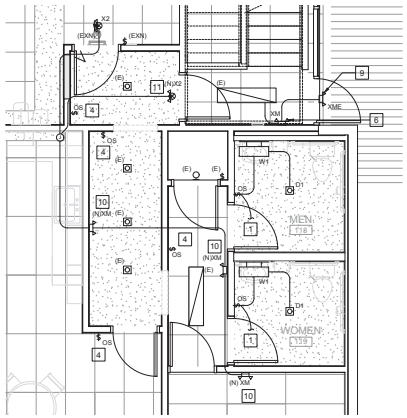


EXISTING FIRST FLOOR LIGHTING PLAN

1 SCALE: 1/8"=1'-0"

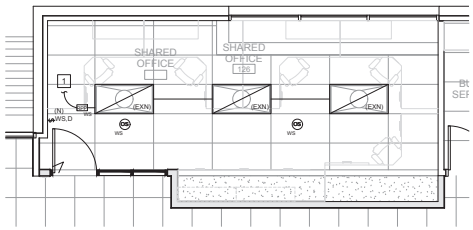
REFERENCE NOTES

1. EXTEND EXISTING LIGHTING BRANCH CIRCUIT IN THIS ROOM TO NEW LIGHT FIXTURES AND ASSOCIATED CONTROLS.
2. REPLACE EXISTING EXIT SIGN WITH EMERGENCY WITH NEW.
3. REMOVE WALL MOUNTED EXIT SIGN. PROVIDE NEW CEILING MOUNT EXIT SIGN AT NEW LOCATION. EXTEND EXISTING BRANCH CIRCUIT AT NEW LOCATION.
4. REPLACE EXISTING OCCUPANCY SENSOR WITH NEW ULTRASONIC OCCUPANCY SENSOR.
5. THESE SWITCHES CONTROL THE EXISTING DOWNLIGHTS AT OPEN OFFICE. LABEL SWITCHES.
6. REPLACE EXISTING EMERGENCY LIGHTING WITH NEW.
7. PROVIDE NEW EMERGENCY LIGHTING AT MID STAIR LANDING. EXTEND EXISTING BRANCH CIRCUIT.
8. EXISTING EMERGENCY LIGHTING WAS CONNECTED TO AN OUTLET. DISCONNECT AND REMOVE AND EXTEND EXISTING BRANCH CIRCUIT FROM EXISTING LIGHT IN THE SAME ROOM.
9. PROVIDE NEW EXTERIOR EMERGENCY LIGHTING EXTEND EXISTING BRANCH CIRCUIT FROM NEAREST UNSWITCHED LIGHTING BRANCH CIRCUIT.
10. PROVIDE NEW INTERIOR EMERGENCY LIGHTING. EXTEND EXISTING BRANCH CIRCUIT FROM UNSWITCHED LIGHTING BRANCH CIRCUIT.
11. PROVIDE NEW INTERIOR EXIT SIGN WITH EMERGENCY LIGHTING. EXTEND EXISTING BRANCH CIRCUIT FROM UNSWITCHED LIGHTING BRANCH CIRCUIT.
12. EXISTING SWITCH TO BE RELOCATED TO NEW WALL. EXTEND LIGHT EXISTING BRANCH CIRCUIT TO NEW LOCATION. BLANK EXISTING SWITCH LOCATION. PROVIDE NEW OCCUPANCY WALL SWITCH.



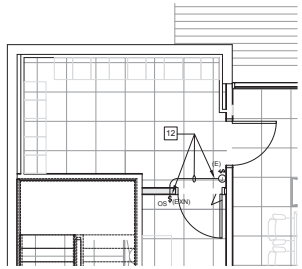
PARTIAL FIRST FLOOR
LIGHTING PLAN AT RESTROOMS

3 SCALE: 1/4"=1'-0"



PARTIAL FIRST FLOOR LIGHTING PLAN AT SHARED OFFICE

4 SCALE: 1/4"=1'-0"



PARTIAL FIRST FLOOR
LIGHTING PLAN AT STORAGE 11

5 SCALE: 1/4"=1'-0"

NORTH

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CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

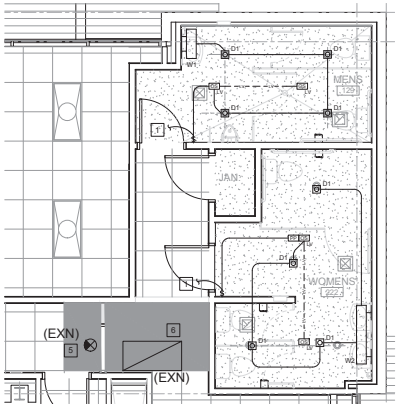
SHEET TITLE: LIGHTING FIRST FLOOR PLAN

REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. THOMA
NO. 20823
ELECTRICAL
STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

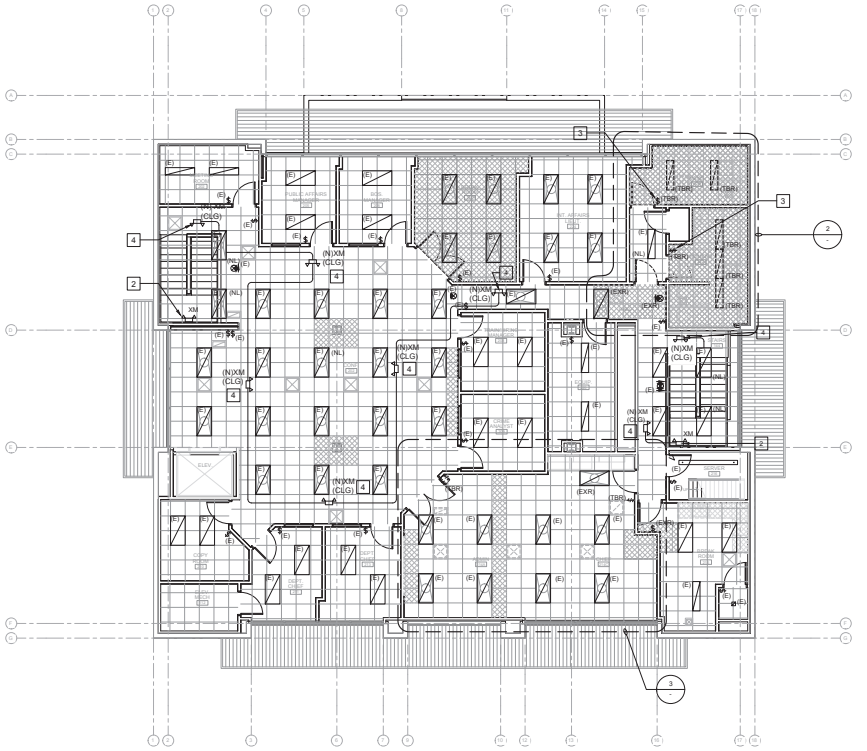
DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	JT
SCALE:	As indicated
DATE:	4/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	E-111

Sep 13, 2024 - 12:43pm - Chris - K:\EN\2024\24-0028\24-0028_E-111 - 1ST FLR LTG PLN.dwg



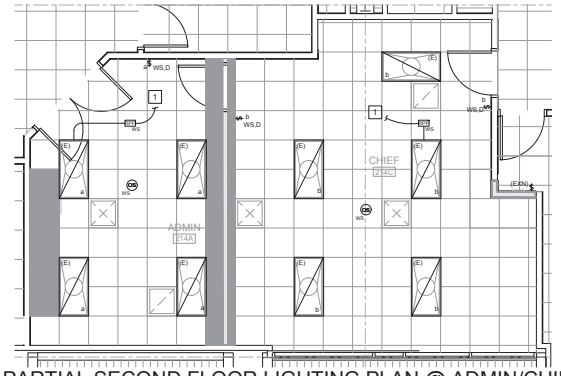
2 PARTIAL SECOND FLOOR LIGHTING PLAN AT RESTROOMS

SCALE: 1/4"=1'-0"



1 EXISTING SECOND FLOOR LIGHTING FLOOR PLAN

SCALE: 1/8"=1'-0"



3 PARTIAL SECOND FLOOR LIGHTING PLAN @ ADMIN/CHIEF

SCALE: 1/4"=1'-0"

REFERENCE NOTES

1. EXTEND EXISTING LIGHTING BRANCH CIRCUIT IN THIS ROOM TO NEW LIGHT FIXTURES AND ASSOCIATED CONTROLS.
2. REPLACE EXISTING EMERGENCY LIGHTING WITH NEW.
3. EXISTING SWITCH TO REPLACE WITH NEW DEVICE AND COVER PLATE.
4. PROVIDE NEW EMERGENCY LIGHT. EXTEND BRANCH CIRCUIT FROM UNSWITCH LIGHTING BRANCH CIRCUIT.
5. NEW LOCATION OF EXISTING EXIT SIGN. COVER CHEVRON. INTERCEPT EXISTING BRANCH CIRCUIT FROM OLD LOCATION AND EXTEND TO NEW LOCATION.
6. NEW LOCATION OF EXISTING LIGHT. INTERCEPT EXISTING BRANCH CIRCUIT FROM OLD LOCATION AND EXTEND TO NEW LOCATION.

LIGHTING CONTROL SYMBOLS LEGEND

- WLS — WIRELESS POWER RELAY PACK. 0-10V DIMMING (NLIGHT AIR #RPP20)
- OS WS — CEILING OCC SENSOR BATTERY POWERED (NLIGHT AIR #RCMSB 7 AR)
- D,WS — BATTERY POWERD WALL DIMMER, 1 GANG 1-POLE 0-10V DIMMING (NLIGHT AIR #RPODB D,X)
- (E) — EXISTING SWITCH TO REMAIN
- (TBR) — EXISTING SWITCH TO BE REMOVED

(E) = EXISTING
(EXR) = EXISTING TO BE RELOCATED
(EXN) = EXISTING NEW LOCATION

NORTH

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CITY OF SAN LUIS OBISPO

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

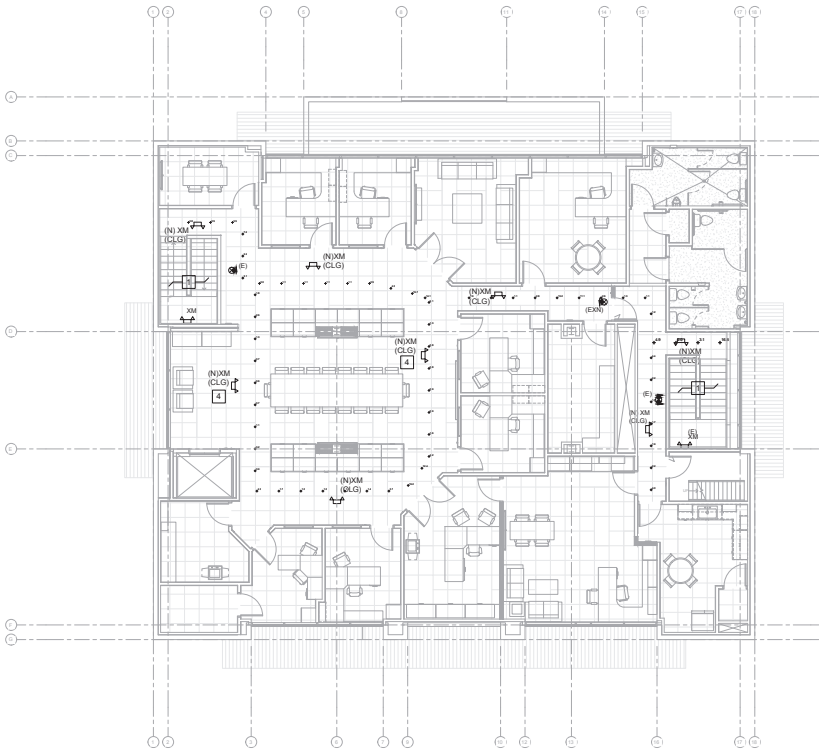
SHEET TITLE: LIGHTING SECOND FLOOR PLAN

REGISTERED PROFESSIONAL ENGINEER — JEFFREY M. THOMA — NO. 20823 — ELECTRICAL — STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

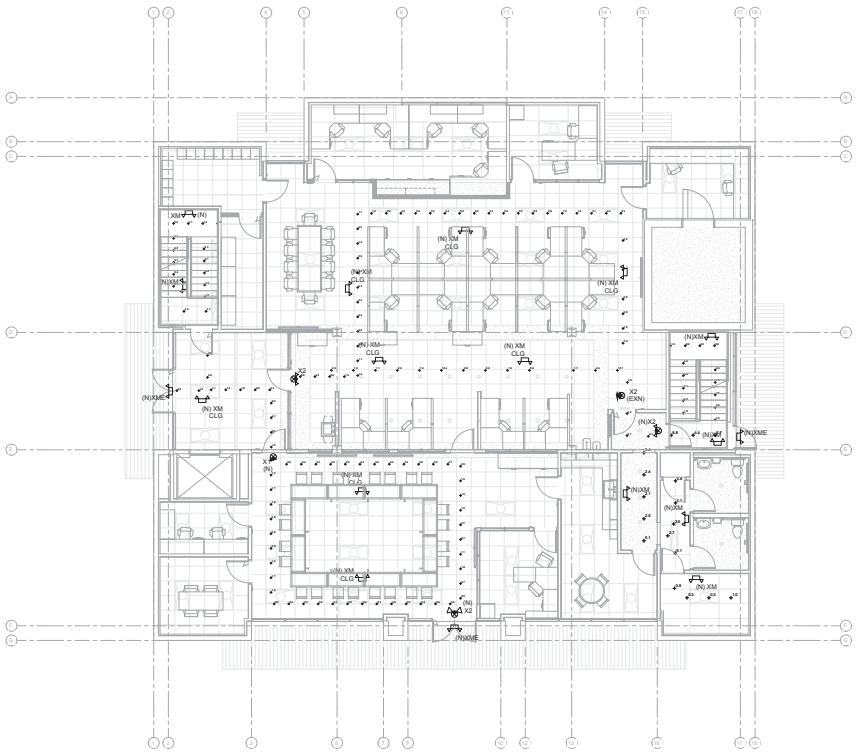
DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	JT
SCALE:	As indicated
DATE:	4/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	E-112

Sep 13, 2024 - 12:43pm - Chris - K:\ENG\2024\24-0028\24-0028_E-1.12 - 2ND FLR LTG PLN.dwg



2 SECOND FLOOR EM PHOTOMETRIC PLAN

SCALE: 1/8"=1'-0"



1 FIRST FLOOR EM PHOTOMETRIC PLAN

SCALE: 1/8"=1'-0"

□ REFERENCE NOTES

1. REFER TO 1ST FLOOR STAIRWELL FOR LIGHT LEVELS UNDER EMERGENCY.

CBC 1008.3.5 ILLUMINATION LEVEL UNDER EMERGENCY POWER

EMERGENCY LIGHTING FACILITIES SHALL BE ARRANGE TO PROVIDE INITIAL ILLUMINATION THAT IS NOT LESS THAN AN AVERAGE OF 1 FOOT-CANDLE AND A MINIMUM AT ANY POINT0.1 FOOT-CANDLE MEASURE ALONG THE PATH OF EGRESS AT FLOOR LEVEL. ILLUMINATION LEVELS SHALL BE PERMITTED TO DECLINE TO 0.6 FOOT-CANDLE AVERAGE AND A MINIMUM AT ANY POINT OF 0.06 FOOT-CANDLE AT THE END OF THE EMERGENCY LIGHTING TIME DURATION. A MAXIMUM-TO-MINIMUM ILLUMINATION UNIFORMITY RATION OF 40 TO 1 SHALL NOT BE EXCEEDED.

LEGEND

- EMERGENCY LIGHT WITH 90 MINUTE BATTERY BACK-UP
- EXIT SIGN WITH EMERGENCY LIGHT AND 90 MINUTE BATTERY BACK-UP
- EXIT SIGN WITH 90 MINUTE BATTERY BACK-UP

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
102 Open Office EM W-E	+	4.5 fc	10.7 fc	0.9 fc	11.9:1	5.0:1
102 Open Office W-E	+	1.7 fc	7.0 fc	0.2 fc	35.0:1	8.5:1
114 Hall EM	+	3.1 fc	5.1 fc	2.1 fc	2.4:1	1.5:1
115 Hallway EM	+	3.8 fc	5.8 fc	2.5 fc	2.3:1	1.5:1
120 Electrical EM	+	0.6 fc	1.0 fc	0.3 fc	3.3:1	2.0:1
122 Briefing N-S	+	0.8 fc	2.9 fc	0.2 fc	14.5:1	4.0:1
122 Briefing S-N	+	0.8 fc	3.3 fc	0.2 fc	16.5:1	4.0:1
122 Stair EM	+	3.9 fc	4.2 fc	3.7 fc	1.1:1	1.1:1
123 Stair EM	+	5.2 fc	6.6 fc	2.6 fc	3.3:1	2.0:1
139 Hallway EM	+	1.1 fc	2.4 fc	0.2 fc	12.0:1	5.5:1
200 Hall 2nd Floor	+	3.8 fc	12.9 fc	1.2 fc	10.8:1	3.2:1
202 Conf Rm E-W	+	2.7 fc	9.9 fc	0.7 fc	14.1:1	3.9:1
202 Conf Rm W-E	+	3.5 fc	15.9 fc	0.6 fc	26.5:1	5.8:1
208 Stair Lobby	+	6.7 fc	16.8 fc	2.0 fc	8.4:1	3.4:1
Stair North Flight 1	+	5.2 fc	9.7 fc	1.5 fc	6.5:1	3.5:1
Stair North Flight 2	+	3.9 fc	4.5 fc	3.5 fc	1.3:1	1.1:1
Stair North Landing 1	+	5.5 fc	7.2 fc	1.2 fc	6.0:1	4.6:1
Stair South Flight 1	+	2.5 fc	3.7 fc	1.0 fc	3.7:1	2.5:1
Stair South Flight 2	+	3.2 fc	4.4 fc	1.7 fc	2.6:1	1.9:1
Stair South Landing	+	5.4 fc	9.0 fc	1.3 fc	6.9:1	4.2:1
100 Lobby EM	+	0.5 fc	0.7 fc	0.4 fc	1.8:1	1.3:1

CITY OF SAN LUIS OBISPO

PROJECT TITLE: **1106 WALNUT TENANT IMPROVEMENT**

SHEET TITLE: LIGHTING EMERGENCY PHOTOMETRIC PLAN

REGISTERED PROFESSIONAL ENGINEER — JEFFREY M. THOMA — NO. 20823 — ELECTRICAL — STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	JT
SCALE:	As indicated
DATE:	4/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	E-113

NORTH

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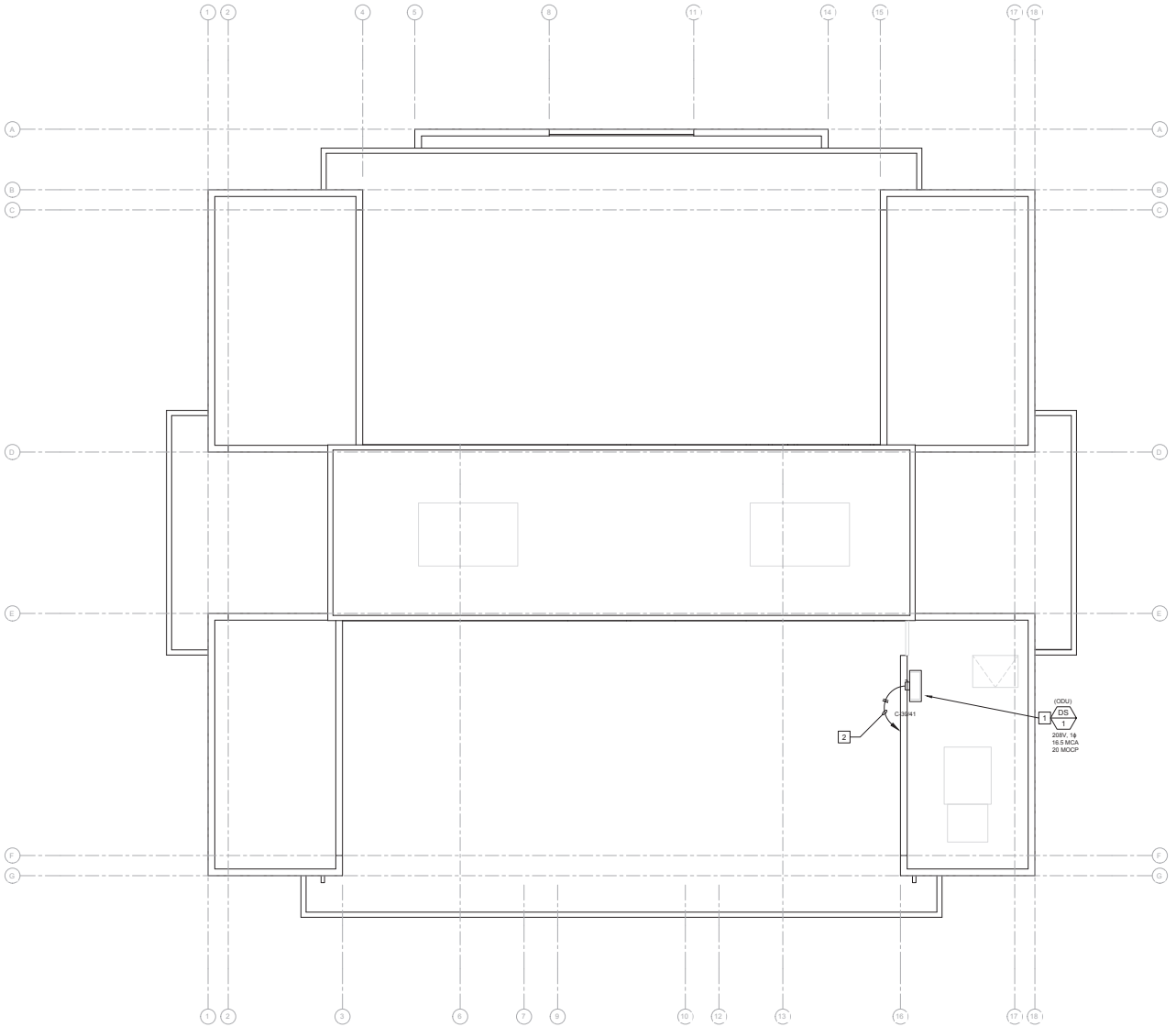
Sep 13, 2024 - 12:43pm - Chris - K:\EN\2024\24-40\24-40(8)_E-113 - LTG EM PHOTOMETRICS PLN.dwg



POWER SIGNAL SECOND FLOOR PLAN

SCALE: 3/16"=1'-0"

NORTH

REFERENCE NOTES

1. PROVIDE LINE VOLTAGE CONNECTION TO MECHANICAL UNIT. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH MECHANICAL PLANS AND PROVIDE 2-POLE, NEMA 3R DISCONNECT PER MANUFACTURER'S REQUIREMENTS.
2. NEW DEDICATED 20A BRANCH CIRCUIT TO EXISTING PANEL "C". PROVIDE NEW 20A/2P CIRCUIT BREAKER IN PANEL AS DESIGNATED TO MATCH EXISTING. PROVIDE (1) 3/4" CONDUIT WITH (2) #12 THWN AND (1) #12 CU GROUND.

CITY OF SAN LUIS OBISPO

PROJECT TITLE:

1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE:

ELECTRICAL ROOF PLAN

REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. THOMA
NO. 20823
ELECTRICAL
STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

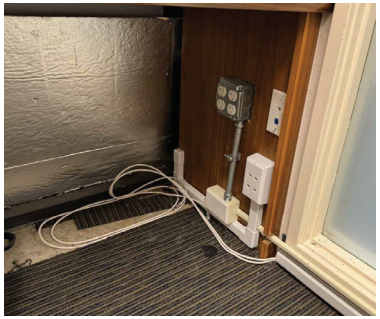
DESIGNED BY: CJ
DRAWN BY: TR
CHECKED BY: CJ
APPROVED BY: JT
SCALE: As indicated
DATE: 6/20/2024
CITY SPECIFICATION NO. 2000577-04
PLAN FILE NO. / LOCATION
SHEET NO. E-121

thoma ENGINEERING
THOMA ELECTRIC, INC.
P.O. Box 1167 - 3562 Empleo St.
San Luis Obispo, CA 93406
Phone: (805) 543-3850
Fax: (805) 543-3829
cad@thomaelec.com

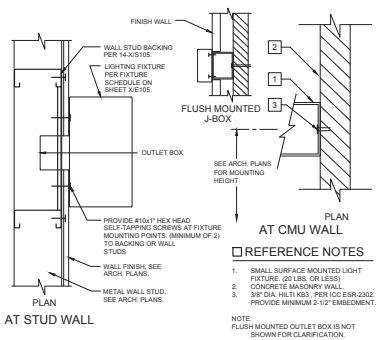
Sep 13, 2024 - 12:42pm - Chris - K:\ENG\2024\24-8026\24-8026_E-121 - ROOF PLN.dwg

EXISTING 14-CAT6 CABLES. REMOVED CABLES AND DISCONNECT AT "MDF" IN ELECTRICAL ROOM. DO NOT CUT CABLES.

10 IMAGE AT OPEN OFFICE FLOOR

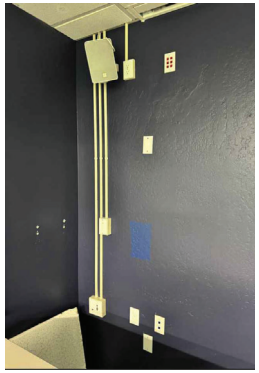


7 IMAGE AT ROOM 123



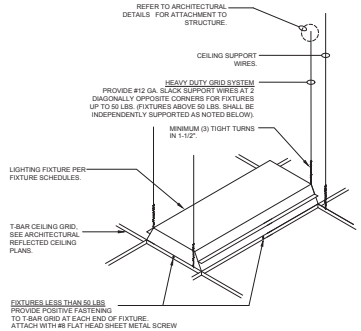
4 SURFACE MOUNT FIXTURE DETAIL
SCALE: NTS

1 SCALE: NTS



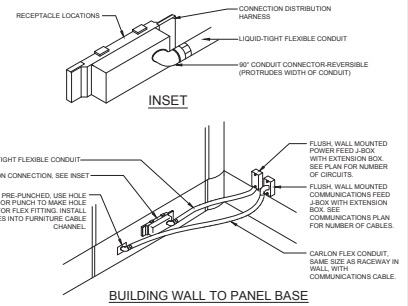
11

8 IMAGE AT ROOM 214



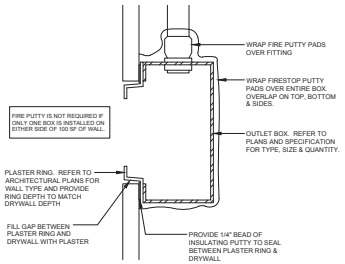
5 LAY-IN BAR FIXTURE MOUNTING DETAIL
SCALE: NTS

2

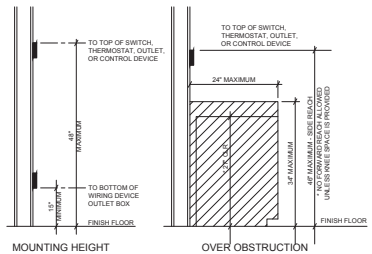


12 TYPICAL MODULAR FUNITURE FEED DETAIL

9 IMAGE AT ROOM 202



6 DEVICE INSTALLATION - RATED WALLS
SCALE: NTS



3 TYPICAL DEVICE ADA MOUNTING HEIGHTS
SCALE: NTS

thoma ENGINEERING
THOMA ELECTRIC, INC.
P.O. Box 1167 - 3562 Empleo St.
San Luis Obispo, CA 93406
Phone: (805) 543-3850
Fax: (805) 543-3829
cad@thomaelec.com

CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT TENANT IMPROVEMENT

SHEET TITLE: ELECTRICAL DETAILS

REGISTERED PROFESSIONAL ENGINEER JEFFREY M. THOMA NO. 20823 ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	JT
SCALE:	As indicated
DATE:	4/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	E-201

Sep 13, 2024 - 12:43pm - Chris - K:\ENG\2024\24-0028\24-0028_E-201 - ELEC DETAILS.dwg

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: SLO PD TI - 1106 Walnut Tenant Improvement	Report Page:	(Page 7 of 7)
Project Address: 1106 Walnut Street	Date Prepared:	9/13/2024

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Jeffrey M. Thoma	Documentation Author Signature:
Company: Thoma Electric, Inc	Signature Date: 2024-09-13
Address: 3562 Empelo Street	CEA/ HERS Certification Identification (if applicable): E20823
City/State/Zip: San Luis Obispo CA 93406	Phone: 805-543-3850

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. My responsibility for the building design or system design identified on this certificate of compliance is limited to the following scope of work and the compliance measures, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Jeffrey M. Thoma	Responsible Designer Signature:
Company: Thoma Electric, Inc.	Date Signed: 2024-09-13
Address: 3562 Empleo Stree	License: E20823
City/State/Zip: San Luis Obispo CA 93401	Phone: (805) 543-3850

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: SLO PD TI - 1106 Walnut Tenant Improvement	Report Page:	(Page 4 of 7)
	Date Prepared:	9/13/2024

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Manual Area Controls 130.1(a) / 160.5(b)4A	Multi-Level Controls 130.1(b) / 160.5(b)4B	Shut-Off Controls 130.1(c) / 160.5(b)4C	Primary/Sky lit Daylighting 130.1(d) / 160.5(b)4D	Secondary Daylighting 130.1(d) / 160.5(b)4D	Interlocked Systems 140.6(a)1I / 170.2(e)2A	Field Inspector	
								Pass	Fail
Restrooms	Restroom	Readily Accessible	NA: Restrooms	Occupancy Sensor	NA: Rm < 24sf Glazing	NA: Rm < 24sf Glazing	No	☐	☐
							13		
							Plan Sheet Showing Daylit Zones:		

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Each area complying using the Complete Building or Area Category Methods per 140.6(b) are included in this table. Column 08 indicates if additional lighting power allowances per 140.6(c) or adjustments per 140.6(a) are being used.

Conditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowance / Adjustment	
					Area Category	PAF
Restroom	Restroom	0.65	455.8	296.3	No	No
	TOTALS:		455.8	296.3	See Tables I, or P for detail	

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: SLO PD TI - 1106 Walnut Tenant Improvement	Report Page:	(Page 5 of 7)
	Date Prepared:	9/13/2024

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This section does not apply to this project.

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS

This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS

This section does not apply to this project.

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS

This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: SLO PD TI - 1106 Walnut Tenant Improvement	Report Page:	(Page 6 of 7)
	Date Prepared:	9/13/2024

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This section does not apply to this project.

T. DWELLING UNIT LIGHTING

This section does not apply to this project.

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-LTI-E - Must be submitted for all buildings

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no NRCA forms required for this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: SLO PD TI - 1106 Walnut Tenant Improvement	Report Page:	(Page 1 of 7)
Project Address: 1106 Walnut Street	Date Prepared:	9/13/2024

This document is used to demonstrate compliance with requirements in 110.5, 110.12(c), 130.0, 130.1, 140.6 and 141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.

A. GENERAL INFORMATION

01 Project Location (city)	San Luis Obispo	04 Total Conditioned Floor Area (ft²)	456
02 Climate Zone	5	05 Total Unconditioned Floor Area (ft²)	0
03 Occupancy Types Within Project (select all that apply):		06 # of Stories (Habitable Above Grade)	1

• Support Areas

B. PROJECT SCOPE

This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.6 / 170.2(e) or 141.0(b)2 / 180.2(b)4 for alterations.

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☐ New Lighting System				
☐ New Lighting System - Parking Garage				
☒ Altered Lighting System	Area Category Method	456	Area Category Method	0
Total Area of Work (ft²)	456		0	

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: SLO PD TI - 1106 Walnut Tenant Improvement	Report Page:	(Page 2 of 7)
	Date Prepared:	9/13/2024

C. COMPLIANCE RESULTS

If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per 140.6(b)1 / 170.2(e)	Allowed Lighting Power per 140.6(b) / 170.2(e) (Watts)						Adjusted Lighting Power per 140.6(a) / 170.2(e) (Watts)				Compliance Results
	01	02	03	04	05		06	07	08		09
	Complete Building 140.6(c)1	Area Category 140.6(c)2 / 170.2(e)A	Area Category Additional 140.6(c)2G / 170.2(e)4Av (+)	Tailored 140.6(c)3 / 170.2(e)4B (+)	Total Allowed (Watts)		Total Designed (Watts)	Adjustments PAF Lighting Control Credits 140.6(a)2 / 170.2(e)1B (-)	Total Adjusted (Watts) *Includes Adjustments		05 must be >= 08 140.6 / 170.2(e)
	(See Table I)	(See Table I)	(See Table J)	(See Table K)			(See Table P)	(See Table P)			
Conditioned		296.3	0		= 296	≥	199	0	= 199		COMPLIES
Unconditioned					=	≥			=		
								Controls Compliance (See Table H for Details)			COMPLIES
								Rated Power Reduction Compliance (See Table Q for Details)			

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: SLO PD TI - 1106 Walnut Tenant Improvement	Report Page:	(Page 3 of 7)
	Date Prepared:	9/13/2024

F. INDOOR LIGHTING FIXTURE SCHEDULE

This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designed Wattage: Conditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Changer[1]	Watts per luminaire[2]	How is Wattage determined	Total Number of Luminaires	Excluded per 140.6(a)3 / 170.2(e)2C	Design Watts	Field Inspector	
									Pass	Fail
D1	D1	No	NA	11	Mfr. Spec	10	No	110	☐	☐
W1	W1	No	NA	18.1	Mfr. Spec	3	No	54.3	☐	☐
W2	W2	No	NA	34.9	Mfr. Spec	1	No	34.9	☐	☐
					Total Designed Watts: CONDITIONED SPACES			199		

[1] *FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B / 170.2(e)2D is adjusted to be 75%/ 80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*

[2] *Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This section does not apply to this project.

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

This table includes lighting controls for conditioned and unconditioned spaces.

Building Level Controls

01	02	03	
		Field Inspector	
		Pass	Fail
Mandatory Demand Response 110.12(c)	Shut-off controls 130.1(c) / 160.5(b)4C	☐	☐
NA: per H&LS	See Area/Space Level Controls		

CITY OF SAN LUIS OBISPO

1106 WALNUT TENANT IMPROVEMENT

PROJECT TITLE:

TITLE 24 ENERGY FORMS - INTERIOR LIGHTING

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER — JEFFREY M. THOMA — NO. 20823 — ELECTRICAL — STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #24-8026

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	JT
SCALE:	As indicated
DATE:	4/20/2024
CITY SPECIFICATION NO.	2000577-04
PLAN FILE NO. / LOCATION	
SHEET NO.	E-301

THOMA ENGINEERING
THOMA ELECTRIC, INC.
P.O. Box 1167 - 3562 Empleo St.
San Luis Obispo, CA 93406
Phone: (805) 543-3850
Fax: (805) 543-3829
cad@thomaelec.com

Sep 13, 2024 - 12:43pm - Chris - K:\ENG\2024\24-0028\24-0028_E-301 - TSI FORMS.dwg

SPECIAL PROVISIONS

FOR

CITY OF SAN LUIS OBISPO

1106 Walnut Tenant Improvements

Specification No. 2000577-04

NOVEMBER 2024

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

919 Palm Street
San Luis Obispo, CA 93401
(805) 781-7200

1106 Walnut Tenant Improvements

Specification No. 2000577-04

Approval Date: November 12, 2024

<<Engineer of Record Stamp>>

<<Signature Date>>

<<Signature Date>>

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NOTICE TO BIDDERS
BID SUBMISSION

Sealed bids will be received by the City of San Luis Obispo at the Public Works Administration Office located at 919 Palm Street, San Luis Obispo, California 93401, until

11:00 a.m. on December 19, 2024

at which time they will be publicly opened and read aloud. Public bid opening may also be viewed via Microsoft Teams video conference and conference call. Use the following link:

or join by phone with this number: (209)645-4165 with Conference ID:XXXXXXXX

Submit bid in a sealed envelope plainly marked:

1106 Walnut Tenant Improvements, Specification No. 2000577-04

Any bid received after the time and date specified will not be considered and will be returned to the bidder unopened. Bids received by Fax or Email will not be considered.

By submission of bid you agree to comply with all instruction and requirements in this notice and the contract documents.

All bids must be submitted on the Bid Item List form(s) provided and submitted with all other Bid Forms included in these Special Provisions.

Each bid must be accompanied by either a:

1. certified check
2. cashier's check
3. bidder's bond

made payable to the City of San Luis Obispo for an amount equal to ten percent of the bid amount as a guaranty. Guaranty will be forfeited to the City San Luis Obispo if the bidder, to whom the contract is awarded, fails to enter into the contract.

The City of San Luis Obispo reserves the right to accept or reject any or all bids or waive any informality in a bid.

All bids are to be compared based on the City Engineer's estimate of the quantities of work to be done, as shown on the Bid Item List.

Bids will only be accepted from bidders that are licensed in compliance with the provisions of Chapter 9, Division III of Business and Professions Code.

The award of the contract, if awarded, will be to the lowest responsive bid submitted by a responsible contractor whose bid complies with the requirements prescribed. If the contract is awarded, the contract will be awarded within 60 calendar days after the opening of the bids.

Failure to raise defects in the notice to bidders or bid forms prior to bid opening constitute a waiver of those defects.

BID DOCUMENTS

A copy of the plans and special provisions may be downloaded, free of charge, from the City's website at:

www.slocity.org/government/department-directory/public-works/public-works-bids-proposals

No printed copies are available for purchase at the City office.

Standard Specifications and Engineering Standards referenced in the Special Provisions may be downloaded, free of charge, from the City's website at:

www.slocity.org/government/department-directory/public-works/documents-online/construction-documents

You are responsible to obtain all issued addenda prior to bid opening. Addenda will be available to download at the City's website listed above or at the office of the City Engineer.

Contact the project manager, Sandra Golonka at 805-781-7239 or the Public Works Department at (805) 781-7200 prior to bid opening to verify the number of addenda issued.

PROJECT INFORMATION

In general, the project consists of remodeling and tenant improvement of existing interior office space.

The project estimated construction cost is $1,470,000

Contract time is established as 80 working days.

The fixed liquidated damages amount is established at $500 per day for failure to complete the work within the contract time.

In compliance with section 1773 of the Labor Code, the State of California Department of Industrial Relations has established prevailing hourly wage rates for each type of workman. Current wage rates may be obtained from the Division of Labor at:

https://www.dir.ca.gov/oprl/DPreWageDetermination.htm

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

There will be a **MANDATORY** walkthrough on **Wednesday, December 4, 2024 at 11 am**. Prime contractors wishing to submit a bid proposal are required to attend and sign in at the meeting. Bidders must meet City Staff at 1106 Walnut Street in San Luis Obispo, California.

QUALIFICATIONS

You must possess a valid Class **B** Contractor's License at the time of the bid opening.

You and any subcontractors required to pay prevailing wage must be registered with the Department of Industrial Relations pursuant to Section 1725.5 of the Labor Code.

You must have experience constructing projects similar to the work specified for this project. Provide three similar reference projects completed as either the prime or subcontractor. All referenced projects must have been completed within the last five years from this project's bid opening date.

One of the three reference projects must have been completed under contract with a city, county, state or federal government agency as the prime contractor.

Two of the referenced projects must be for tenant improvements.

One of the referenced projects must be for an office rehabilitation with electrical work.

Failure to provide reference projects as specified in this section and as required on the qualification form is cause to reject a bid as being non-responsive.

The City reserves the right to reject any bid based on non-responsiveness if a bidder fails to provide a bid that complies with all bidding instructions.

The City reserves the right to reject a responsive bid based on the non-responsibility of the bidder if the Director of Public Works or Designee finds, after providing notice and a hearing to the bidder, that the bidder lacks the

1. knowledge

2. experience,
3. or is otherwise not responsible as defined in Section 3.24 of the San Luis Obispo Municipal Code to complete the project in the best interest of the City.

Rejected bidders may appeal this determination. Appeal must comply with the requirements in this Notice to Bidders.

It is the City of San Luis Obispo's intent to award the contract to the lowest responsive bid submitted by a responsible bidder. If in the bidder's opinion the contract has been or may be improperly awarded, the bidder may protest the contract award.

Protests must be filed no later than five working days after either:
1. bid opening date
2. notification of rejected bid.

Protest must be in writing and received by the project manager located at:
919 Palm Street
San Luis Obispo, CA 93401.

Valid protests must contain the following information:
1. the reasons for the protest
2. any supporting documentation
3. the ruling expected by the City to remedy the protest.

Any protest not containing all required information will be deemed invalid and rejected.

The City will consider additional documentation or other supporting information regarding the protest if submitted in compliance to the specified time limits. Anything submitted after the specified time limit will be rejected and not be considered.

The Director of Public Works or Designee may request additional information to be submitted within three days of the request, unless otherwise specified, and will notify the protester of ruling within ten days of determination.

If the protester is not satisfied with ruling, the protester may appeal the ruling to the City Council in compliance with Chapter 1.20 of the City of San Luis Obispo Municipal Code.

Pursuant to the Public Records Act (Government Code, § 6250, et seq.), the City will make public records available upon request.

AWARD

The lowest bidder will be determined using the TOTAL PROJECT BID.

As a condition to executing a contract with the City, two bonds each equal to one hundred percent of the total contract price are required in compliance with Section 3-1.05 of the Standard Specifications.

You may substitute securities for moneys withheld under the contract in compliance with the provisions of the Public Contract Code, Section 10263.

ACCOMMODATION

If any accommodations are needed to participate in the bid process, please contact Allie Genard at (805) 781-7200 or by Telecommunications Device for the Deaf at (805) 781-7107. Requests should be made as early as possible in the bidding process to allow time for accommodation.

BID FORMS

All bid forms must be completed and submitted with your bid. Failure to submit these forms and required bid bond is cause to reject the bid as nonresponsive. Staple all bid forms together.

THE UNDERSIGNED, agrees that they have carefully examined:

1. the location of the proposed work
2. the plans and specifications
3. read the accompanying instructions to bidders

and propose to furnish all:

1. materials
2. labor

to complete all the required work satisfactorily in compliance with

3. plans
4. specifications
5. special provisions

for the prices set forth in the bid item list:

BID ITEM LIST FOR 1106 WALNUT TENANT IMPROVEMENTS, SPECIFICATION NO. 2000577-04

Item No.	$SS_{(1)}$	Item Description	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
1	99	1st Floor Office Rehabilitation	LS	1	---	
2	99	2nd Floor Office Rehabilitation	LS	1	---	
3	99	Replace Existing Exterior Signage	LS	1	---	
4	99	Flooring Removal and Replacement	SQFT	9400		
5	99	Furniture Purchase and Installation	LS	1	---	
6	99	Relocate 2nd Floor Cubicles to 1st Floor	LS	1	---	
7	99	Ductless Split HVAC System for 2nd Floor Server Room	LS	1	---	
8	91,99	Painting	LS	1	---	
9	99	Electrical and Communication Improvements	LS	1	---	
10	99	1st Floor Restroom Rehabilitation	LS	1	---	
11	99	2nd Floor Restroom Rehabilitation	LS	1	---	
12	99	Remove and Replace Casework for 2nd Floor Breakroom	LS	1	---	
13	99	Hydration Station	EA	1		
				Bid Total (or Base Bid)	**$**	
Company Name:						

(1) refers to section in the Standard Specifications, with modifications in the Special Provisions, that describe required work.
(S) Specialty item per Section 5-1.13A SUBCONTRACTING, General of the Standard Specifications
(F) final pay item per Section 9-1.02A

LIST OF SUBCONTRACTORS

Pursuant to Section 4100 of the Public Contracts Code and section 2-1.33C of the standard specifications, the Bidder is required to furnish the following information for each Subcontractor performing more than 1/2 percent (0.5%) of the total base bid. Do not list alternative subcontractors for the same work. Subcontracting must not total more than fifty percent (50%) of the submitted bid except as allowed in section 5-1.13 of the standard specifications.

For Streets & Highways projects, subcontractors performing less than ten thousand dollars ($10,000) worth of work need not be mentioned. **Subcontractors required to pay prevailing wage, must be registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 to be listed.**

NOTE: If there are no subcontractors, write "NONE" and submit with bid.

Name Under Which Subcontractor is Licensed	License Number	**DIR Public Works Registration Number**	Address and Phone Number of Office, Mill or Shop	Specific Description of Subcontract	% of Total Base Bid

Attach additional sheets as needed.

PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT

In compliance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder, or any subcontractor to be engaged by the bidder, **has ____, has not** ____ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

NOTE: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Bid. Signing this Bid on the signature portion constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In compliance with Public Contract Code Section 10162, the Bidder must complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

_____ Yes _____ No

If the answer is yes, attach a letter explaining the circumstances

PUBLIC CONTRACT CODE SECTION 10232 STATEMENT

In compliance with Public Contract Code Section 10232, you hereby state under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against you within the immediately preceding two-year period because of your failure to comply with an order of a federal court which orders you to comply with an order of the National Labor Relations Board.

LABOR CODE SECTION 1725.5 STATEMENTS

The bidder has delinquent liability to an employee or the state for any assessment of back wages or related damages, interest, fines, or penalties pursuant to any final judgment, order, or determination by a court or any federal, state, or local administrative agency, including a confirmed arbitration award. Any judgment, order, or determination that is

under appeal is excluded, provided that the contractor has secured the payment of any amount eventually found due through a bond or other appropriate means.

_____ Yes _____ No

The bidder is currently debarred under Section 1777.1 or under any other federal or state law providing for the debarment of contractors from public works.

_____ Yes _____ No

NOTE: The above Statements and Questionnaire are part of the Bid. Signing this Bid on the signature portion constitute signature of this Statement and Questionnaire. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

NON-COLLUSION DECLARATION

I, _____, declare that

I am _____ of_____,

the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone refrained from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Executed on _____, 20_____, in _____

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____

(Signature and Title of Declarant)

(SEAL)

Subscribed and sworn to before me
this _____day of _____, 20_____

_____

Notary Public

Company Name:_____

BIDDER ACKNOWLEDGEMENTS

By signing below, the bidder acknowledges and confirms that this bid is based on the information contained in all contract documents, including the notice to bidders, plans, specifications, special provisions, and addendum number(s) _____. **(Note: You are responsible to verify the number of addenda prior to the bid opening.)**

The undersigned further agrees that in case of default in executing the required contract, with necessary bonds, within eight days, (not including Saturdays, Sundays, and legal holidays), after having received a mailed notice that the contract is ready for signature, the proceeds of the check or bond accompanying his bid will become the property of the City of San Luis Obispo.

Licensed in accordance with an act providing for the registration of contractors, License No._____, Expiration Date _____.

The above statement is made under penalty of perjury, and any bid not containing this information "will be considered non-responsive and will be rejected" by the City.

Signature of Bidder _____

_____
(Print Name and Title of Bidder)

DIR– Public Works Registration No: _____

Business Name (DBA): _____

Owner/Legal Name: _____

Indicate One: ☐Sole-proprietor ☐ Partnership ☐Corporation

List Partners/Corporate Officers: _____
Name Title

_____
Name Title

_____
Name Title

Business Address _____

Street Address _____

Mailing Address _____

City, State, Zip Code _____

Phone Number _____

Fax Number _____

Email Address _____

Date _____

QUALIFICATIONS

Failure to furnish complete reference information **ON THIS FORM**, as specified in this project's Notice to Bidders and indicated below, is cause to reject the bid. Additional information may be attached but is not a substitute for this form.

Reference Number 1

Customer Name & Contact Individual	
Telephone & Email	
Project Name (Site Address):	
Is this similar to the project being bid and did this project include tenant improvement activity? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	Date project completed:

Reference Number 2

Customer Name & Contact Individual	
Telephone & Email	
Project Name (Site Address):	
Is this similar to the project being bid and did this project include tenant improvement activity? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	Date project completed:

Reference Number 3

Customer Name & Contact Individual	
Telephone & Email	
Project Name (Site Address):	
Is this similar to the project being bid and did this project include office rehabilitation with electrical work? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	Date project completed:

ATTACH BIDDER'S BOND TO ACCOMPANY BID

Know all men by these presents:

That we _____, AS PRINCIPAL, and

_____, AS SURETY, are held and firmly bound unto the City of San Luis Obispo in the sum of:

_____ Dollars (_____) to be paid to said City or its certain attorney, its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents:

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the certain bid of the above

bounden _____

to construct _____
(insert name of street and limits to be improved or project)

dated _____ is accepted by the City of San Luis Obispo, and if the above

bounden _____, his heirs, executors, administrators, successors, and assigns shall duly enter into and execute a contract for such construction and shall execute and deliver the two bonds described within ten (10) days (not including Saturdays, Sundays, or legal holidays) after the above bounden,

_____, has received notice by and from the said City of San Luis Obispo that said contract is ready for execution, then this obligation shall become null and void; otherwise, it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, we hereunto set our hands and seals this ___ day of _____, 20____.

Bidder Principal:

_____

Signature Date
Title:

Surety:

_____

_____

_____

Bidder's signature is not required to be notarized. Surety's signature must be notarized.
Equivalent form may be substituted
(Rev. 6-30-14)

SPECIAL PROVISIONS

ORGANIZATION

Special provisions are under headings that correspond with the main section heading of the Standard Specifications. Each special provision begins with a revision clause that describes or introduces a revision to the Standard Specifications. Any paragraph added or deleted by a revision clause does not change the paragraph number of the Standard Specifications for any other reference to a paragraph of the Standard Specifications.

DIVISION I GENERAL PROVISIONS

1 GENERAL

Add to Section 1-1.01 GENERAL:

The work must be done in compliance with the City of San Luis Obispo, Department of Public Works:

1. 1106 Walnut Fencing Improvements Special Provisions
2. City of San Luis Obispo Standard Specifications and Engineering Standards – 2020 edition
3. State of California, Department of Transportation Standard Specifications and Standard Plans – 2015 edition

In case of conflict between documents, governing ranking must comply with section 5-1.02 of the City of San Luis Obispo's Standard Specifications. All work must conform to these Special Provisions and appendices, project plans, and the most current Building Codes. In the event of a conflict, the more stringent requirement shall apply.

Failure to comply with the provisions of these sections is a material breach of contract:

1. Sections 5 through 8 of the Standard Specifications
2. Section 12 through 15 of the Standard Specifications
3. Section 77-1 of the Standard Specifications
4. Section 81 of the Standard Specifications
5. authorized working hours
6. OSHA compliance

3 CONTRACT AWARD AND EXECUTION

Add Section 3-1.18B CONTRACT EXECUTION, Building Permit

3-1.18B Building Permit

The contractor must obtain a no-fee building permit from the Community Development Department. All requirements of the building permit shall be applied to the project. The contractor is responsible for coordinating inspection with the building division for the project. Request for the inspection must be scheduled 72 hours in advance of the required inspection.

4 SCOPE OF WORK

Add to Section 4-1.03 WORK DESCRIPTION with:

Comply with the provisions of Section 91, and 99 for general, material, construction, and payment specifics.

5 CONTROL OF WORK

Add to Section 5-1.01 GENERAL with:

The Contractor is required to supply a weather safe storage area for all furniture to be reused if stored outside. The Contractor is allowed to use the 1106 Walnut parking lot for staging equipment and materials with the exception of the two rows in front of the main entrance.

City staff will vacate the building during construction.

Construction equipment will be allowed to be kept on-site after hours and over weekends provided it is fully contained within the fenced and secured work site and is not accessible to the public.

Work hours are restricted to 7:00 a.m. to 4:00 p.m. Monday through Friday.

Replace Section 5-1.32 AREAS FOR USE with:

Contractor shall be allowed to area for parking, staging, and construction within the property limits.

8 PROSECUTION AND PROGRESS

Replace the 1st paragraph in Section 8-1.02A SCHEDULE, General with:

Provide a Level 1 schedule for this work.

Add to Section 8-1.03 PRECONSTRUCTION CONFERENCE:

14. Schedule of Values for all lump sum bid items

9 PAYMENT

Add to Section 9-1.02A MEASUREMENT, General with:

Contractor must submit a Schedule of Values for all lump sum bid items of work at the Preconstruction Meeting in compliance with Section 9-1.16B. Payment application pay items shall match the bid item sheet and subcategories to a pay item will not be allowed. Payment for Lump Sum items will be based on the percentage of acceptable work and the schedule of values for that item.

Add to Section 9-1.03 PAYMENT SCOPE with:

Any item of work that does not have separate bid item is considered included in the project cost of work and no additional compensation will be paid.

DIVISION XI MATERIALS

91 PAINT

Add to Section 91-1.01 GENERAL:

Contractor must provide 1 gallon of each paint color used during the project for building maintenance staff. Cost for paint provided for building maintenance staff shall be included in the price of the Office Rehabilitation Lump Sum bid item.

See Appendix B for Technical Specifications
See Appendix C for City Communication Cabling Specifications
See Appendix D for Furniture Schedule
See Appendix F: Condenser Structural Calculations

DIVISION XII BUILDING CONSTRUCTION

99 BUILDING CONSTRUCTION

DIVISION XIII APPENDICES

Add Section 100-1.01 APPENDICES:

Refer to Appendix A: Form of Agreement
Refer to Appendix B: Supplemental Technical Specifications
Refer to Appendix C: City Communication Cabling Specifications
Refer to Appendix D: Furniture Schedule
Refer to Appendix E: Lead and Asbestos Testing Report
Refer to Appendix F: Condenser Structural Calculations

APPENDIX A - FORM OF AGREEMENT

THIS AGREEMENT, made on _____, by and between the City of San Luis Obispo, a municipal corporation and charter city, San Luis Obispo County, California (hereinafter called the Owner) and COMPANY NAME (hereinafter called the Contractor).

WITNESSETH:

That the Owner and the Contractor for the consideration stated herein agree as follows:

ARTICLE 1, SCOPE OF WORK: The Contractor shall perform everything required to be performed, shall provide and furnish all of the labor, materials, necessary tools, expendable equipment, and all utility and transportation services required to complete all the work of construction of

NAME OF PROJECT, SPEC NO.

in strict compliance with the plans and specifications therefor, including any and all Addenda, adopted by the Owner, in strict compliance with the Contract Documents hereinafter enumerated.

It is agreed that said labor, materials, tools, equipment, and services shall be furnished and said work performed and completed under the direction and supervision and subject to the approval of the Owner or its authorized representatives.

ARTICLE II, CONTRACT PRICE: The Owner shall pay the Contractor as full consideration for the faithful performance of this Contract, subject to any additions or deductions as provided in the Contract Documents, the contract prices as follows:

Item No.	Item	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
1.					
2.					
3.					

BID TOTAL: $ .00

Payments are to be made to the Contractor in compliance with and subject to the provisions embodied in the documents made a part of this Contract.

Should any dispute arise respecting the true value of any work omitted, or of any extra work which the Contractor may be required to do, or respecting the size of any payment to the Contractor, during the performance of this Contract, said dispute shall be decided by the Owner and its decision shall be final, and conclusive.

ARTICLE III, COMPONENT PARTS OF THIS CONTRACT: The Contract consists of the following documents, all of which are as fully a part thereof as if herein set out in full, and if not attached, as if hereto attached:

1. Notice to Bidders and Information for Bidders
2. Standard Specifications and Engineering Standards
3. Special Provisions, any Addenda, Plans and Contract Change Orders
4. Caltrans Standard Specifications and Standard Plans 2015
5. Accepted Bid and Bid Bond
6. List of Subcontractors
7. Public Contract Code Sections 10285.1 Statement
8. Public Contract Code Section 10162 Questionnaire
9. Public Contract Code Section 10232 Statement
10. Labor Code Section 1725.5 Statements
11. Bidder Acknowledgements
12. Qualifications
13. Non-collusion Declaration
14. Agreement and Bonds
15. Insurance Requirements and Forms

ARTICLE IV INDEMNIFICATION: The Contractor shall indemnify, defend with legal counsel approved by City, and hold harmless City, its officers, officials, employees and volunteers from and against all liability, loss, damage, expense, cost (including without limitation reasonable legal counsel fees, expert fees and all other costs and fees of litigation) of every nature arising out of or in connection with the Contractor's negligence, recklessness or willful misconduct in the performance of work hereunder or its failure to comply with any of its obligations contained in this Agreement, except such loss or damage which is caused by the sole or active negligence or willful misconduct of the City. Should conflict of interest principles preclude a single legal counsel from representing both the City and the Contractor, or should the City otherwise find the Contractor's legal counsel unacceptable, then the Contractor shall reimburse the City its costs of defense, including without limitation reasonable legal counsel fees, expert fees and all other costs and fees of litigation. The Contractor shall promptly pay any final judgment rendered against the City (and its officers, officials, employees and volunteers) with respect to claims determined by a trier of fact to have been the result of the Contractor's negligent, reckless or wrongful performance. It is expressly understood and agreed that the foregoing provisions are intended to be as broad and inclusive as is permitted by the law of the State of California and will survive termination of this Agreement.

The Contractor obligations under this section apply regardless of whether such claim, charge, damage, demand, action, proceeding, loss, stop notice, cost, expense, judgment, civil fine or penalty, or liability was caused in part or contributed to by an Indemnitee. However, without affecting the rights of the City under any provision of this agreement, the Contractor shall not be required to indemnify and hold harmless the City for liability attributable to the active negligence of City, provided such active negligence is determined by agreement between the parties or by the findings of a court of competent jurisdiction. In

instances where the City is shown to have been actively negligent and where the City's active negligence accounts for only a percentage of the liability involved, the obligation of the Contractor will be for that entire portion or percentage of liability not attributable to the active negligence of the City.

ARTICLE V. It is further expressly agreed by and between the parties hereto that should there be any conflict between the terms of this instrument and the bid of said Contractor, then this instrument shall control and nothing herein shall be considered as an acceptance of the said terms of said bid conflicting herewith.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands this year and date first above written.

CITY OF SAN LUIS OBISPO
A Municipal Corporation

_____
Whitney McDonald,
City Manager

APPROVED AS TO FORM

_____
J. Christine Dietrick
City Attorney

CONTRACTOR:

Name of Company

By:_____
Name of CAO/President
Its: CAO/PRESIDENT

(2nd signature required if Corporation):

By:_____
Name of Corporate Officer

Its: _____

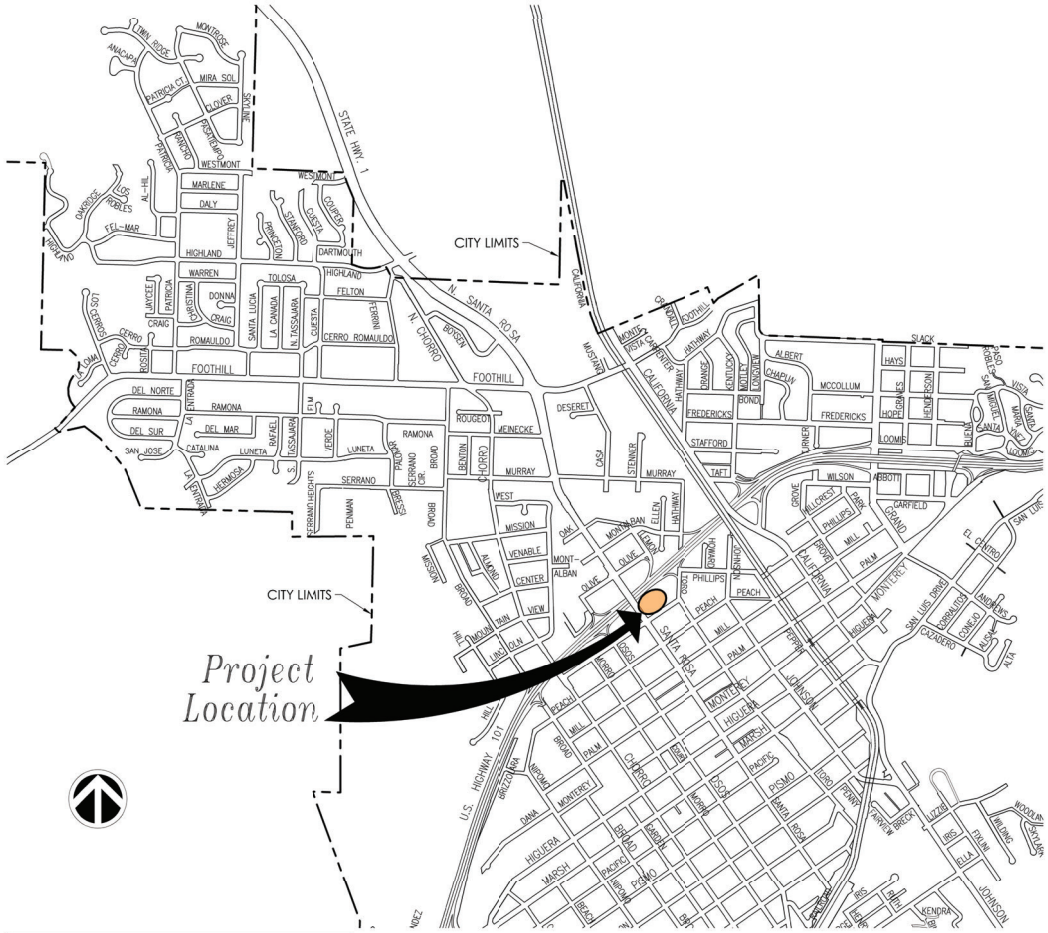
APPENDIX B – SUPPLEMENTAL TECHNICAL SPECIFICATIONS

APPENDIX C – CITY COMMUNICATION CABLING SPECIFICATIONS

APPENDIX D – FURNITURE SCHEDULE

APPENDIX E – LEAD AND ASBESTOS REPORT

APPENDIX F – CONDENSER STRUCTURAL CALCULATIONS



SCOPE OF WORK

PROJECT GENERALLY INCLUDES, BUT IS NOT LIMITED TO:

- DEMOLITION OF EXISTING ASPHALT, CURBS, GUTTERS, SIDEWALKS, BIKE RACK, AND LANDSCAPING.
- CONSTRUCTION OF SECURITY FENCING, PILASTERS, WALL, PEDESTRIAN GATE, VEHICULAR GATE AND OPERATOR.
- SITE UTILITES, INCLUDING NEW ELECTRICAL FOR ROLLING GATE, EV2 CHARGER, AND SECURITY CAMERAS
- RENOVATE LAWN AREA WITH NEW LATERALS AND SPRAY HEADS AND SOD TO PATCH BACK TO UNDISTURBED LAWN AREA.
- NEW PLANTING.

PROJECT DIRECTORY

OWNER
City of San Luis Obispo Public Works
990 Palm Street — Phone: 805-781-7239
San Luis Obispo, CA 93401 — Fax:
Sandra Golonka

LANDSCAPE ARCHITECT
RRM Design Group
3765 S. Higuera St. Ste 102 — Phone: (805) 543-1794
San Luis Obispo, CA 93401 — Fax: (805) 543-4609
Lance Wierschem, Project Manager

STRUCTURAL ENGINEER
RRM Design Group
3765 South Higuera Street, Suite 102 — Phone: (805) 543-1794
San Luis Obispo, CA 93401 — Fax: (805) 543-4609
Jessica Meadows

ELECTRICAL ENGINEER
Thoma Electric
3562 Empleo St., Ste. C — Phone: (805) 543-3850
San Luis Obispo, CA 93401 — Fax:
Christopher Jose

index to plans

sheet no.	description
GENERAL	
G001	TITLE SHEET
G002	GENERAL NOTES
DEMOLITION	
CD101	DEMOLITION PLAN
CD102	DEMOLITION PLAN
LANDSCAPE	
LC001	CONSTRUCTION NOTES
LC101	CONSTRUCTION PLAN
LC102	CONSTRUCTION PLAN
LC401	ROLLING GATE ENLARGEMENT
LC501	CONSTRUCTION DETAILS
LC502	CONSTRUCTION DETAILS
LC503	CONSTRUCTION DETAILS
LP001	SITE REFERENCE PLAN
LP101	PLANTING PLAN
LP102	PLANTING PLAN
LP501	PLANTING DETAILS
STRUCTURAL	
S-101	SHEET INDEX, ABBREVIATIONS & SYMBOLS
S-102	GENERAL NOTES
S-103	GENERAL NOTES
S-104	SPECIAL INSPECTIONS & TESTS
S-301	TYPICAL CONCRETE DETAILS
S-321	MASONRY DETAILS
ELECTRICAL	
E001	ELECTRICAL NOTES, LEGEND, AND ABBREVIATIONS
E002	ELECTRICAL DETAILS
E003	LEVEL 2 CAR EV CHARGER SPECIFICATIONS
E004	ELECTRICAL SPECIFICATIONS
E101	ENLARGED ELECTRICAL SITE PLAN

Reference Documents:
City Standard Specifications - August 2020 Edition
City Engineering Standards - August 2020 Edition

TOPOGRAPHIC SURVEY

PREPARED BY: RRM DESIGN GROUP

DATE: OCTOBER, 2023

PROJECT No.: 2504-05-PS23

DATUM:

CORDINATES SHOWN ARE BASED ON HORIZONTAL CONTROL POINTS 8030 & 8039 AS PUBLISHED IN THE CITY OF SAN LUIS OBISPO 2007 HORIZONTAL CONTROL NETWORK (NORTH AMERICAN DATUM OF 1983 (NAD83) EPOCH DATE 1991.35, ZONE 5 CALIFORNIA). THE BEARING BETWEEN CONTROL POINTS BEARS NORTH 29°28'27" EAST 2442.19'.

ELEVATIONS SHOWN ARE BASED ON THE CITY OF SAN LUIS OBISPO BENCHMARK SYSTEM 2020 REFERENCED TO BENCHMARK NO. 373 WITH AN ELEVATION OF 264.33'. CITY BENCHMARK SYSTEM IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

SURVEY NOTES

1. ALL MEASUREMENTS LISTED, SHOWN AND REPRESENTED HEREON ARE BASED ON GROUND DISTANCES.
2. THE CONTOUR INTERVAL IS 1 FOOT.
3. THIS SURVEY WAS DONE FOR THE PURPOSE OF MASTER PLAN DESIGN FOR THE MISSION PLAZA AND SURROUNDING STREETS.
4. UNDERGROUND UTILITY LOCATIONS ARE PLOTTED BASED ON ABOVE GROUND PAINT MARKS BY OTHERS, ABOVE GROUND SURFACE STRUCTURES. ACTUAL LOCATION MAY DIFFER. ADDITIONAL UNDERGROUND UTILITY LINES MAY EXIST. FOR MORE INFORMATION REGARDING UTILITY LOCATION, SIZE, DEPTH, CONDITION, AND CAPACITY CONTACT UTILITY OR MUNICIPAL/PUBLIC SERVICE FACILITY.
5. UNDERGROUND PIPE SIZES ARE BASED ON VISUAL OBSERVATIONS MADE FROM THE SURFACE AND ARE APPROXIMATE.
6. EASEMENTS AFFECTING THE PROPERTY SHOWN HEREON MAY EXIST. NO TITLE INFORMATION WAS PROVIDED. NO ATTEMPT HAS BEEN MADE TO PLOT EASEMENTS.

LICENSED LANDSCAPE ARCHITECT — LANCE WIERSCHEM, LIC. #6201 — SIGNATURE — 07.31.2026 EXPIRATION DATE — STATE OF CALIFORNIA

811 — Know what's below. Call 811 before you dig.

SAN LUIS OBISPO COUNTY, CALIFORNIA

1106 WALNUT FENCING IMPROVEMENTS

REGISTERED PROFESSIONAL ENGINEER — BRIAN A. NELSON — No. C 79870 — CIVIL — STATE OF CALIFORNIA

APPROVED BY

Brian A. Nelson, City Engineer *R.C.E. C79870* *Approved Date*

SPECIFICATION NO.	DATE	SHEET
2000577-02	SEPTEMBER 9, 2024	G001
	FILE NO./LOCATION 2504-05-PS23	

LEGEND

- PROPERTY/RIGHT-OF-WAY LINE (ROW)
- CENTER LINE
- SAWCUT AND CONFORM LINE
- LIMIT OF WORK (LIMIT OF WORK)
- FENCE LINE
- FLOW LINE
- GRADE BREAK (GB)
- TREE PROTECTION ZONE
- STRIPING
- TYPE II SLURRY SEAL
- EXISTING POLE LIGHT
- PROPOSED POLE LIGHT
- PROPOSED DRINKING FOUNTAIN/BOTTLE FILLER
- STORM DRAIN LINE (SD)
- WATER LINE (W)
- SEWER LINE (SS)
- EXISTING MANHOLE
- EXISTING SIGN
- EXISTING WATER VALVE
- EXISTING CLEANOUT
- EXISTING WATER (W)
- EXISTING SEWER (SS)
- EXISTING STORM DRAIN (SD)
- EXISTING OVERHEAD LINES (OH)
- EXISTING MAJOR CONTOUR (315)
- EXISTING MINOR CONTOUR (315)
- PROPOSED MAJOR CONTOUR (315)
- PROPOSED MINOR CONTOUR (315)

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
AP	ANGLE POINT
ARV	AIR RELEASE VALVE
BCR	BEGIN CURVE
BW	BACK OF WALK
CB	CATCH BASIN
CL/CL.	CENTERLINE/CLASS
CMP	CORRUGATED METAL PIPE
CONC.	CONCRETE
DBH [OF A TREE]	DIAMETER AT BREAST HEIGHT
DI	DRAIN INLET
DIP	DUCTILE IRON PIPE
EG	EXISTING GRADE
EX.	EXISTING
ELEV	ELEVATION
FDC	FIRE DEPARTMENT CONNECTION
FG	FINISHED GRADE
FL	FLOWLINE
FS	FINISHED SURFACE
FFE	FINISHED FLOOR ELEVATION
FW	FIRE WATER
HP	HIGH POINT
IPS	IRON PIPE SIZE
JT	JOINT TRENCH
LP	LOW POINT
MAX.	MAXIMUM
EL.	MINIMUM
NTS	NOT TO SCALE
PL	PROPERTY LINE
PCL	PARCEL
PCC	PORTLAND CEMENT CONCRETE
POC	POINT OF CURVE/POINT OF CONNECTION
POT	POINT OF TANGENT
PRC	POINT OF REVERSE CURVE
ROW	RIGHT OF WAY
RET. WALL	RETAINING WALL
RP	REDUCED PRESSURE
RW	RECYCLED WATER
SD	STORM DRAIN
SFM	SEWER FORCE MAIN
SL	STREET LIGHT/SERVICE LATERAL
SS	SANITARY SEWER
STA	STATION
STD.	STANDARD
TBD	TO BE DETERMINED
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TF	TOP OF FENCE
TP	TOP OF PAVEMENT
TG	TOP OF GRATE
TYP.	TYPICAL
TW	TOP OF WALL
UON	UNLESS OTHERWISE NOTED
W	WATER
WSE	WATER SURFACE ELEVATION

GENERAL CONSTRUCTION NOTES

1. ALL WORK SHALL BE PERFORMED IN CONFORMANCE WITH THESE PLANS, SPECIAL PROVISIONS PREPARED FOR THIS PROJECT AND THE 2020 CITY OF SAN LUIS OBISPO STANDARD SPECIFICATIONS AND ENGINEERING STANDARDS, IN CONJUNCTION WITH THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND STANDARD PLANS, 2015 EDITION (UNREVISED), AND LATEST EDITION OF CALIFORNIA MUTCD.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR PERMITTEE TO CONTACT "UNDERGROUND SERVICE ALERT OF NORTHERN/CENTRAL CALIFORNIA" BY PHONE AT 8-1-1 FORTY-EIGHT (48) HOURS PRIOR TO START OF CONSTRUCTION FOR LOCATION OF POWER, TELEPHONE, OIL AND NATURAL GAS UNDERGROUND FACILITIES. CONTRACTOR OR PERMITTEE SHALL ALSO CONTACT THE APPROPRIATE AGENCY FOR THE LOCATION OF CABLE T.V., WATER, SEWER, DRAINAGE OR UNDERGROUND FACILITIES.
3. THESE PLANS DO NOT INDICATE ALL EXISTING FACILITIES IN THE VICINITY OF THE PROPOSED WORK SUCH AS EXISTING IRRIGATION HEADS AND LINES, SHRUBBERY AND VEGETATION, ETC. THE CONTRACTOR MUST USE CARE TO AVOID DAMAGE TO ANY EXISTING IMPROVEMENTS OR VEGETATION IN THE VICINITY OF THE WORK, AND MUST REPAIR ANY FACILITIES DAMAGE DURING CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER.
4. WHERE TRIMMING OF EXISTING VEGETATION IS REQUIRED DURING CONSTRUCTION IT MUST BE DONE IN A MANNER TO REMOVE THE MINIMUM POSSIBLE AMOUNT OF VEGETATION AND LEAVE THE REMAINING IN AN ATTRACTIVE CONDITION. CONTRACTOR MUST COORDINATE WITH CITY ARBORIST PRIOR TO TRIMMING OF ANY VEGETATION.
5. PROTECT TREE BRANCHES, TRUNK, ROOTS AND FOLIAGE THROUGH PROPER TRIMMING AND CONSTRUCTION TECHNIQUES WHENEVER POSSIBLE PER CITY STD SECTION 20.
6. CONSULT WITH WITH THE CITY'S ARBORIST PRIOR TO PRUNING OR WORKING WITHIN THE DRIPLINE OF ANY TREE. ALL PRUNING OF TREES SHALL BE KEPT TO A MINIMUM AND MUST FOLLOW CITY OF SAN LUIS OBISPO STANDARDS.
7. NO TREES, OTHER THAN THOSE INDICATED ON THE DRAWINGS, SHALL BE REMOVED WITHOUT PRIOR APPROVAL OF THE CITY.
8. NO MATERIALS OR EQUIPMENT SHALL BE STORED WITHIN THE DRIPLINE OF ANY TREE.
9. THESE PLANS DO NOT INDICATE ALL OVERHEAD LINES. CONTRACTOR SHALL TAKE CARE DURING CONSTRUCTION TO AVOID CONTACT WITH OR DAMAGE TO EXISTING OVERHEAD LINES.
10. ANY EXISTING UTILITIES AND IMPROVEMENTS THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S SOLE EXPENSE.
11. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND AGENCIES WITH SERVICES IN THE AREA PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES AND COORDINATE WITH THE UTILITY COMPANIES AFFECTED BY CONSTRUCTION.
12. PROTECT SURVEY MONUMENTS IN PLACE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE REPLACEMENT OF DAMAGED OR DISPLACED SURVEY MONUMENTS AND SHALL NOTIFY THE CITY FIVE (5) WORKING DAYS PRIOR TO RESTORING MONUMENTS. MONUMENTS SHALL BE RESET BY A CALIFORNIA LICENSED LAND SURVEYOR AND SHALL INCLUDE PREPARING AND FILING A CORNER RECORD WITH SAN LUIS OBISPO COUNTY.
13. ALL STRIPING AND MARKINGS SHALL BE PER CALTRANS REVISED STANDARD PLANS 2015 -A20A, A20B, A20C, A20D, A24A, A24B, A24C, A24D, AND A24E. ANY STRIPING NOT MARKED FOR REMOVAL SHALL BE PROTECTED IN PLACE. SEE SPECIAL PROVISIONS SECTION 84.
14. ALL CURB, GUTTER, AND SIDEWALK IMPROVEMENTS SHALL BE COMPLETED PRIOR TO THE START OF PAVING WORK.
15. CONCRETE SIDEWALKS MUST CONFORM TO ENGINEERING STANDARDS 4110 & 4220.
16. REMOVAL AND REPLACEMENT OF EXISTING CONCRETE SHALL CONFORM TO ENGINEERING STANDARD 4910.
17. ALL EQUIPMENT SUBMITTALS, INCLUDING PATH/STREET LIGHTING, SIGNS, ETC. SHALL BE APPROVED BY CITY PRIOR TO INSTALLATION.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING UTILITY COVERS IN FIELD.
19. PROTECT UTILITY COVERS IN PLACE. ENSURE EXCESSIVE LIP BETWEEN COVER AND SLURRY DOES NOT FORM. THERMOPLASTIC STRIPING PLACED ON CONCRETE REQUIRES A PRIMER COAT PRIOR TO APPLICATION.
20. CONTRACTOR SHALL USE PRECAUTION TO PREVENT DISRUPTION OF PROJECT SITE IN AREAS OUTSIDE CONSTRUCTION ZONE. DAMAGES SHALL BE REPLACED OR REPAIRED BY CONTRACTOR. CONTRACTOR SHALL SUBMIT VIDEO LOG OF CONSTRUCTION SITE THROUGHOUT DURATION OF PROJECT.
21. PROPOSED DEVIATIONS FROM THE PLANS MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL, INCLUDING FIELD REVISIONS REQUESTED BY THE CITY INSPECTOR.
22. CONSTRUCTION LINE AND GRADE STAKES SHALL BE SET BY A CIVIL ENGINEER OR SURVEYOR LICENSED IN THE STATE OF CALIFORNIA.
23. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OR PROPER RESETTING OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS. ANY SURVEY MONUMENTS DESTROYED BY THE CONTRACTOR SHALL BE REPLACED IN ACCORDANCE WITH THE STATE LAND SURVEYORS ACT AND CITY STANDARDS, AT THE CONTRACTOR'S EXPENSE.
24. ALL PROTECTIVE DEVICES TO BE INSTALLED BY THE CONTRACTOR, SHALL BE IN PLACE AT THE END OF EACH WORK DAY. A SAFE PEDESTRIAN PATH OF TRAVEL SHALL BE PROVIDED AT ALL TIMES TO AND FROM BUILDING ENTRANCES TO PARKING FACILITIES. COORDINATE PEDESTRIAN WALK CLOSURES WITH OWNER PRIOR TO CONSTRUCTION.
25. WORK IN AND ALONG PUBLIC STREETS AND PARKING LOTS, ONCE BEGUN, SHALL PROCEED TO COMPLETION WITHOUT DELAY SO AS TO PROVIDE MINIMUM INCONVENIENCE TO THE PUBLIC.
26. SUBSURFACE UTILITY DATA IS DEPICTED TO LEVEL C OF CI/ASCE 38-02 AS DEFINED IN THE GUIDANCE OF THE EXISTING UTILITY DATA. CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF LOCATION OF ALL EXISTING UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION. ALL UTILITIES SHALL BE PROTECTED AND REPAIRED BY THE CONTRACTOR IF DAMAGED. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF ALL UTILITY COMPANIES 48 HOURS PRIOR TO THE BEGINNING OF WORK. BRING ANY CONFLICTS WITH NEW IMPROVEMENTS IMMEDIATELY TO THE ATTENTION OF THE CITY.
27. CONTRACTOR SHALL PROVIDE A LEGIBLE AND COMPLETE SET OF PLANS IDENTIFYING ALL MODIFICATIONS MADE DURING CONSTRUCTION TO THE CITY FOR THE PREPARATION OF RECORD DRAWINGS.
28. ALL CONSTRUCTION SHALL CONFORM TO LATEST EDITION OF CALIFORNIA BUILDING CODE TITLE 24.
29. THIS PROJECT SHALL COMPLY WITH THE 2022 EDITIONS OF THE CALIFORNIA BUILDING CODE (CBC), CALIFORNIA MECHANICAL CODE (CMC), CALIFORNIA PLUMBING CODE (CPC), CALIFORNIA ELECTRICAL CODE (CEC), CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBS), AND THE CALIFORNIA ENERGY CODE (CENC), ALL AMENDMENTS TO THE CA CODES ADOPTED BY THE CITY OF SAN LUIS OBISPO, AND ALL OTHER CODES, REGULATIONS, AND APPROVALS ESTABLISHED BY THE CITY OF SAN LUIS OBISPO.

CITY OF SAN LUIS OBISPO

PROJECT TITLE: **1106 WALNUT FENCING IMPROVEMENTS**

SHEET TITLE: GENERAL NOTES

90% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT — LANCE WEBSDEN — 07-31-2026 — STATE OF CALIFORNIA

DESIGNED BY:	LW
DRAWN BY:	DK
CHECKED BY:	LW
APPROVED BY:	
SCALE:	AS NOTED
DATE:	SEPTEMBER, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	**G002**

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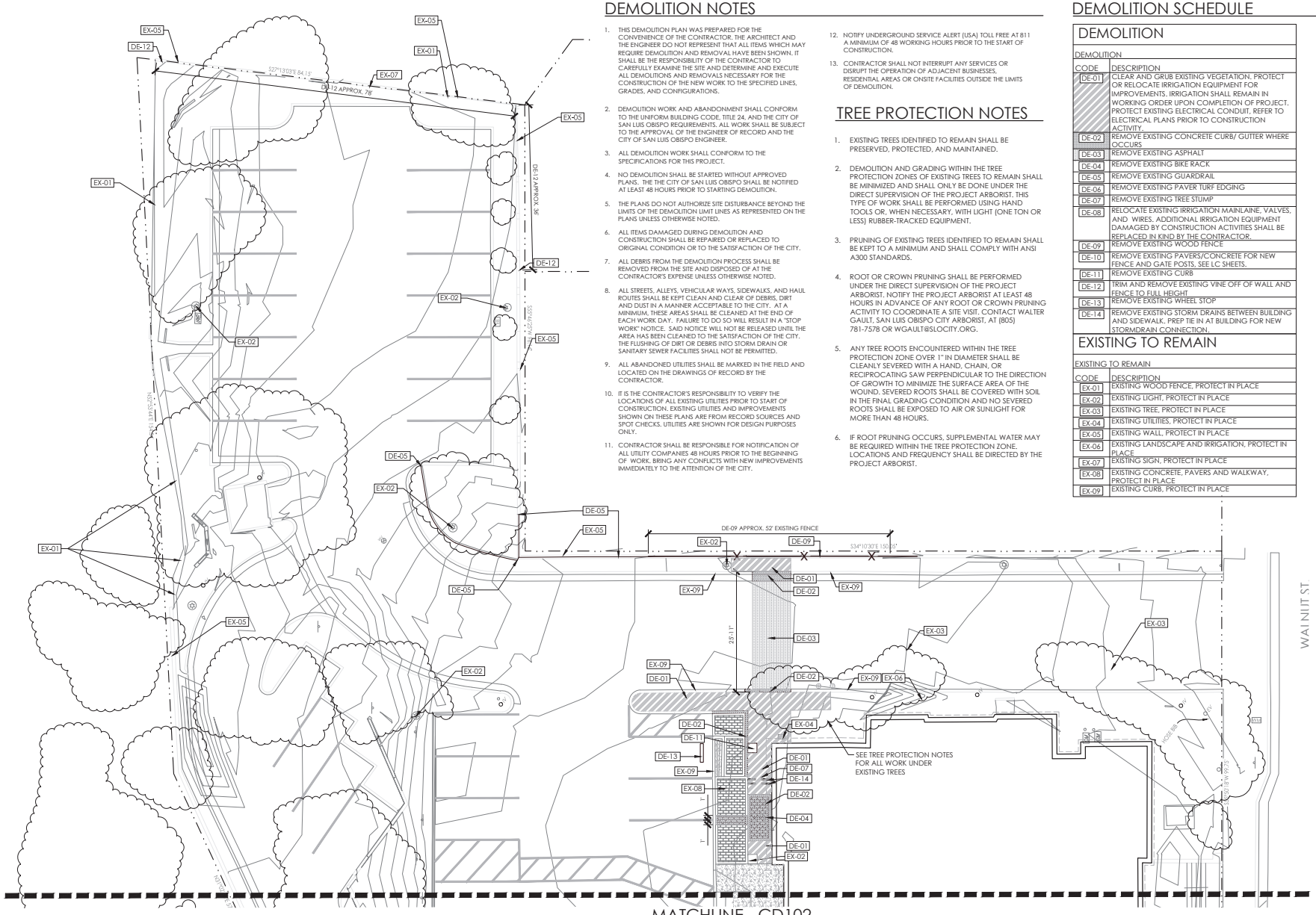

DEMOLITION NOTES

1. THIS DEMOLITION PLAN WAS PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ARCHITECT AND THE ENGINEER DO NOT REPRESENT THAT ALL ITEMS WHICH MAY REQUIRE DEMOLITION AND REMOVAL HAVE BEEN SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE SITE AND DETERMINE AND EXECUTE ALL DEMOLITIONS AND REMOVALS NECESSARY FOR THE CONSTRUCTION OF THE NEW WORK TO THE SPECIFIED LINES, GRADES, AND CONFIGURATIONS.
2. DEMOLITION WORK AND ABANDONMENT SHALL CONFORM TO THE UNIFORM BUILDING CODE, TITLE 24, AND THE CITY OF SAN LUIS OBISPO REQUIREMENTS. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER OF RECORD AND THE CITY OF SAN LUIS OBISPO ENGINEER.
3. ALL DEMOLITION WORK SHALL CONFORM TO THE SPECIFICATIONS FOR THIS PROJECT.
4. NO DEMOLITION SHALL BE STARTED WITHOUT APPROVED PLANS. THE THE CITY OF SAN LUIS OBISPO SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO STARTING DEMOLITION.
5. THE PLANS DO NOT AUTHORIZE SITE DISTURBANCE BEYOND THE LIMITS OF THE DEMOLITION LIMIT LINES AS REPRESENTED ON THE PLANS UNLESS OTHERWISE NOTED.
6. ALL ITEMS DAMAGED DURING DEMOLITION AND CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO ORIGINAL CONDITION OR TO THE SATISFACTION OF THE CITY.
7. ALL DEBRIS FROM THE DEMOLITION PROCESS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE UNLESS OTHERWISE NOTED.
8. ALL STREETS, ALLEYS, VEHICULAR WAYS, SIDEWALKS, AND HAUL ROUTES SHALL BE KEPT CLEAN AND CLEAR OF DEBRIS, DIRT AND DUST IN A MANNER ACCEPTABLE TO THE CITY. AT A MINIMUM, THESE AREAS SHALL BE CLEANED AT THE END OF EACH WORK DAY. FAILURE TO DO SO WILL RESULT IN A "STOP WORK" NOTICE. SAID NOTICE WILL NOT BE RELEASED UNTIL THE AREA HAS BEEN CLEANED TO THE SATISFACTION OF THE CITY. THE FLUSHING OF DIRT OR DEBRIS INTO STORM DRAIN OR SANITARY SEWER FACILITIES SHALL NOT BE PERMITTED.
9. ALL ABANDONED UTILITIES SHALL BE MARKED IN THE FIELD AND LOCATED ON THE DRAWINGS OF RECORD BY THE CONTRACTOR.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. EXISTING UTILITIES AND IMPROVEMENTS SHOWN ON THESE PLANS ARE FROM RECORD SOURCES AND SPOT CHECKS. UTILITIES ARE SHOWN FOR DESIGN PURPOSES ONLY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF ALL UTILITY COMPANIES 48 HOURS PRIOR TO THE BEGINNING OF WORK. BRING ANY CONFLICTS WITH NEW IMPROVEMENTS IMMEDIATELY TO THE ATTENTION OF THE CITY.
12. NOTIFY UNDERGROUND SERVICE ALERT (USA) TOLL FREE AT 811 A MINIMUM OF 48 WORKING HOURS PRIOR TO THE START OF CONSTRUCTION.
13. CONTRACTOR SHALL NOT INTERRUPT ANY SERVICES OR DISRUPT THE OPERATION OF ADJACENT BUSINESSES, RESIDENTIAL AREAS OR ONSITE FACILITIES OUTSIDE THE LIMITS OF DEMOLITION.

TREE PROTECTION NOTES

1. EXISTING TREES IDENTIFIED TO REMAIN SHALL BE PRESERVED, PROTECTED, AND MAINTAINED.
2. DEMOLITION AND GRADING WITHIN THE TREE PROTECTION ZONES OF EXISTING TREES TO REMAIN SHALL BE MINIMIZED AND SHALL ONLY BE DONE UNDER THE DIRECT SUPERVISION OF THE PROJECT ARBORIST. THIS TYPE OF WORK SHALL BE PERFORMED USING HAND TOOLS OR, WHEN NECESSARY, WITH LIGHT (ONE TON OR LESS) RUBBER-TRACKED EQUIPMENT.
3. PRUNING OF EXISTING TREES IDENTIFIED TO REMAIN SHALL BE KEPT TO A MINIMUM AND SHALL COMPLY WITH ANSI A300 STANDARDS.
4. ROOT OR CROWN PRUNING SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF THE PROJECT ARBORIST. NOTIFY THE PROJECT ARBORIST AT LEAST 48 HOURS IN ADVANCE OF ANY ROOT OR CROWN PRUNING ACTIVITY TO COORDINATE A SITE VISIT. CONTACT WALTER GAULT, SAN LUIS OBISPO CITY ARBORIST, AT (805) 781-7578 OR WGAULT@SLOCITY.ORG.
5. ANY TREE ROOTS ENCOUNTERED WITHIN THE TREE PROTECTION ZONE OVER 1" IN DIAMETER SHALL BE CLEANLY SEVERED WITH A HAND, CHAIN, OR RECIPROCATING SAW PERPENDICULAR TO THE DIRECTION OF GROWTH TO MINIMIZE THE SURFACE AREA OF THE WOUND. SEVERED ROOTS SHALL BE COVERED WITH SOIL IN THE FINAL GRADING CONDITION AND NO SEVERED ROOTS SHALL BE EXPOSED TO AIR OR SUNLIGHT FOR MORE THAN 48 HOURS.
6. IF ROOT PRUNING OCCURS, SUPPLEMENTAL WATER MAY BE REQUIRED WITHIN THE TREE PROTECTION ZONE. LOCATIONS AND FREQUENCY SHALL BE DIRECTED BY THE PROJECT ARBORIST.

DEMOLITION SCHEDULE

DEMOLITION

CODE	DESCRIPTION
DE-01	CLEAR AND GRUB EXISTING VEGETATION. PROTECT OR RELOCATE IRRIGATION EQUIPMENT FOR IMPROVEMENTS. IRRIGATION SHALL REMAIN IN WORKING ORDER UPON COMPLETION OF PROJECT. PROTECT EXISTING ELECTRICAL CONDUIT, REFER TO ELECTRICAL PLANS PRIOR TO CONSTRUCTION ACTIVITY.
DE-02	REMOVE EXISTING CONCRETE CURB/ GUTTER WHERE OCCURS
DE-03	REMOVE EXISTING ASPHALT
DE-04	REMOVE EXISTING BIKE RACK
DE-05	REMOVE EXISTING GUARDRAIL
DE-06	REMOVE EXISTING PAVER TURF EDGING
DE-07	REMOVE EXISTING TREE STUMP
DE-08	RELOCATE EXISTING IRRIGATION MAINLAINE, VALVES, AND WIRES. ADDITIONAL IRRIGATION EQUIPMENT DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR.
DE-09	REMOVE EXISTING WOOD FENCE
DE-10	REMOVE EXISTING PAVERS/CONCRETE FOR NEW FENCE AND GATE POSTS, SEE LC SHEETS.
DE-11	REMOVE EXISTING CURB
DE-12	TRIM AND REMOVE EXISTING VINE OFF OF WALL AND FENCE TO FULL HEIGHT
DE-13	REMOVE EXISTING WHEEL STOP
DE-14	REMOVE EXISTING STORM DRAINS BETWEEN BUILDING AND SIDEWALK. PREP TIE IN AT BUILDING FOR NEW STORMDRAIN CONNECTION.

EXISTING TO REMAIN

CODE	DESCRIPTION
EX-01	EXISTING WOOD FENCE, PROTECT IN PLACE
EX-02	EXISTING LIGHT, PROTECT IN PLACE
EX-03	EXISTING TREE, PROTECT IN PLACE
EX-04	EXISTING UTILITIES, PROTECT IN PLACE
EX-05	EXISTING WALL, PROTECT IN PLACE
EX-06	EXISTING LANDSCAPE AND IRRIGATION, PROTECT IN PLACE
EX-07	EXISTING SIGN, PROTECT IN PLACE
EX-08	EXISTING CONCRETE, PAVERS AND WALKWAY, PROTECT IN PLACE
EX-09	EXISTING CURB, PROTECT IN PLACE

0 5 10 20 30 feet
1"=10'

CITY OF SAN LUIS OBISPO

PROJECT TITLE:
1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE:
DEMOLITION PLAN

90% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT
LANCE WIERSCHEM
07.31.2025
EXPIRATION DATE
3924
STATE OF CALIFORNIA

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
SCALE:	AS NOTED
DATE:	SEPTEMBER, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	CD101

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NOTES

1. SEE CD101 FOR DEMOLITION AND TREE PROTECTION NOTES.

DEMOLITION SCHEDULE

DEMOLITION

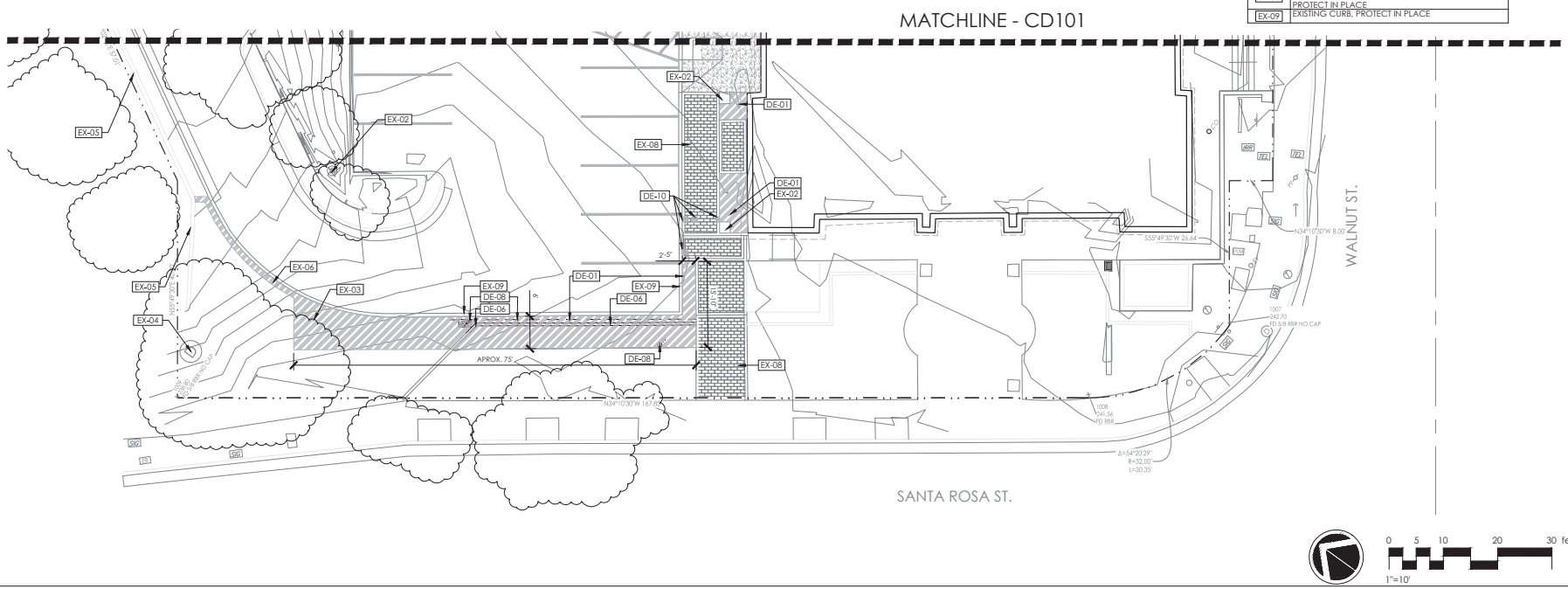
DEMOLITION

CODE	DESCRIPTION
DE-01	CLEAR AND GRUB EXISTING VEGETATION. PROTECT OR RELOCATE IRRIGATION EQUIPMENT FOR IMPROVEMENTS. IRRIGATION SHALL REMAIN IN WORKING ORDER UPON COMPLETION OF PROJECT. PROTECT EXISTING ELECTRICAL CONDUIT, REFER TO ELECTRICAL PLANS PRIOR TO CONSTRUCTION ACTIVITY.
DE-02	REMOVE EXISTING CONCRETE CURB/ GUTTER WHERE OCCURS
DE-03	REMOVE EXISTING ASPHALT
DE-04	REMOVE EXISTING BIKE RACK
DE-05	REMOVE EXISTING GUARDRAIL
DE-06	REMOVE EXISTING PAVER TURF EDGING
DE-07	REMOVE EXISTING TREE STUMP
DE-08	RELOCATE EXISTING IRRIGATION MAINLAINE, VALVES, AND WIRES. ADDITIONAL IRRIGATION EQUIPMENT DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR.
DE-09	REMOVE EXISTING WOOD FENCE
DE-10	REMOVE EXISTING PAVERS/CONCRETE FOR NEW FENCE AND GATE POSTS, SEE LC SHEETS.
DE-11	REMOVE EXISTING CURB
DE-12	TRIM AND REMOVE EXISTING VINE OFF OF WALL AND FENCE TO FULL HEIGHT
DE-13	REMOVE EXISTING WHEEL STOP
DE-14	REMOVE EXISTING STORM DRAINS BETWEEN BUILDING AND SIDEWALK. PREP TIE IN AT BUILDING FOR NEW STORMDRAIN CONNECTION.

EXISTING TO REMAIN

EXISTING TO REMAIN

CODE	DESCRIPTION
EX-01	EXISTING WOOD FENCE, PROTECT IN PLACE
EX-02	EXISTING LIGHT, PROTECT IN PLACE
EX-03	EXISTING TREE, PROTECT IN PLACE
EX-04	EXISTING UTILITIES, PROTECT IN PLACE
EX-05	EXISTING WALL, PROTECT IN PLACE
EX-06	EXISTING LANDSCAPE AND IRRIGATION, PROTECT IN PLACE
EX-07	EXISTING SIGN, PROTECT IN PLACE
EX-08	EXISTING CONCRETE, PAVERS AND WALKWAY, PROTECT IN PLACE
EX-09	EXISTING CURB, PROTECT IN PLACE



PROJECT TITLE: **1106 WALNUT FENCING IMPROVEMENTS**

SHEET TITLE: **DEMOLITION PLAN**

90% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT
LANCE WIERSCHEM LICENSED
07-31-2026
STATE OF CALIFORNIA

DESIGNED BY:

DRAWN BY:

CHECKED BY:

APPROVED BY:

SCALE: AS NOTED

DATE: SEPTEMBER, 2024

CITY SPECIFICATION NO. 2000577-02

PLAN FILE NO. / LOCATION 2504-05-PS23

SHEET NO. CD102

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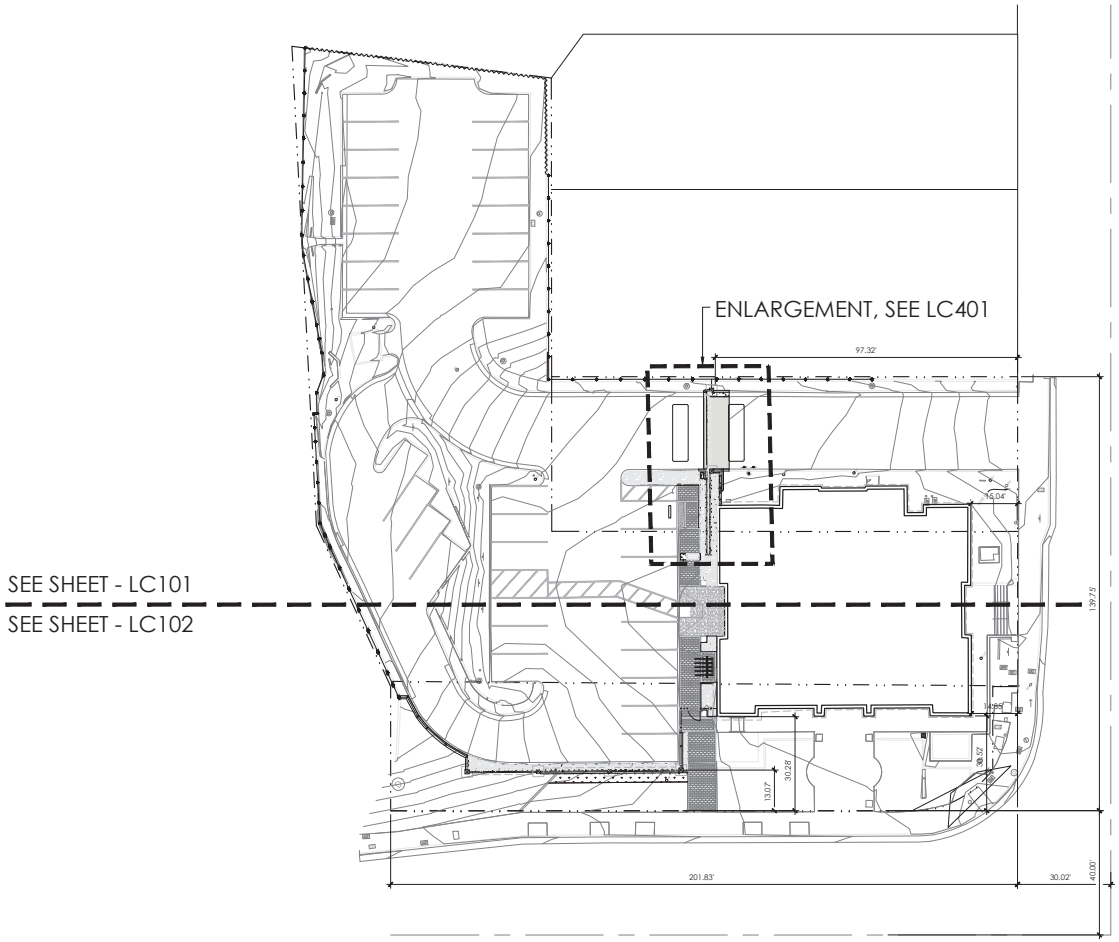
PROJECT INFORMATION

SITE INFORMATION

STREET ADDRESS:	1106 WALNUT ST., SAN LUIS OBISPO, CA
APN:	001-207-039
ZONING:	O (OFFICE)
LOT SIZE:	.87 AC
LAND USE:	
EXISTING USE:	OFFICE
PROPOSED USE:	OFFICE



0 10 20 40 60 feet

1"=20'

PROJECT TITLE: 1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE: SITE REFERENCE PLAN

90% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT
LANCE WIERSCHEM LIC. NO. 6107
07-31-2024
STATE OF CALIFORNIA

DESIGNED BY:

DRAWN BY:

CHECKED BY:

APPROVED BY:

SCALE: AS NOTED

DATE: SEPTEMBER, 2024

CITY SPECIFICATION NO. 2000577-02

PLAN FILE NO. / LOCATION 2504-05-PS23

SHEET NO. LC001

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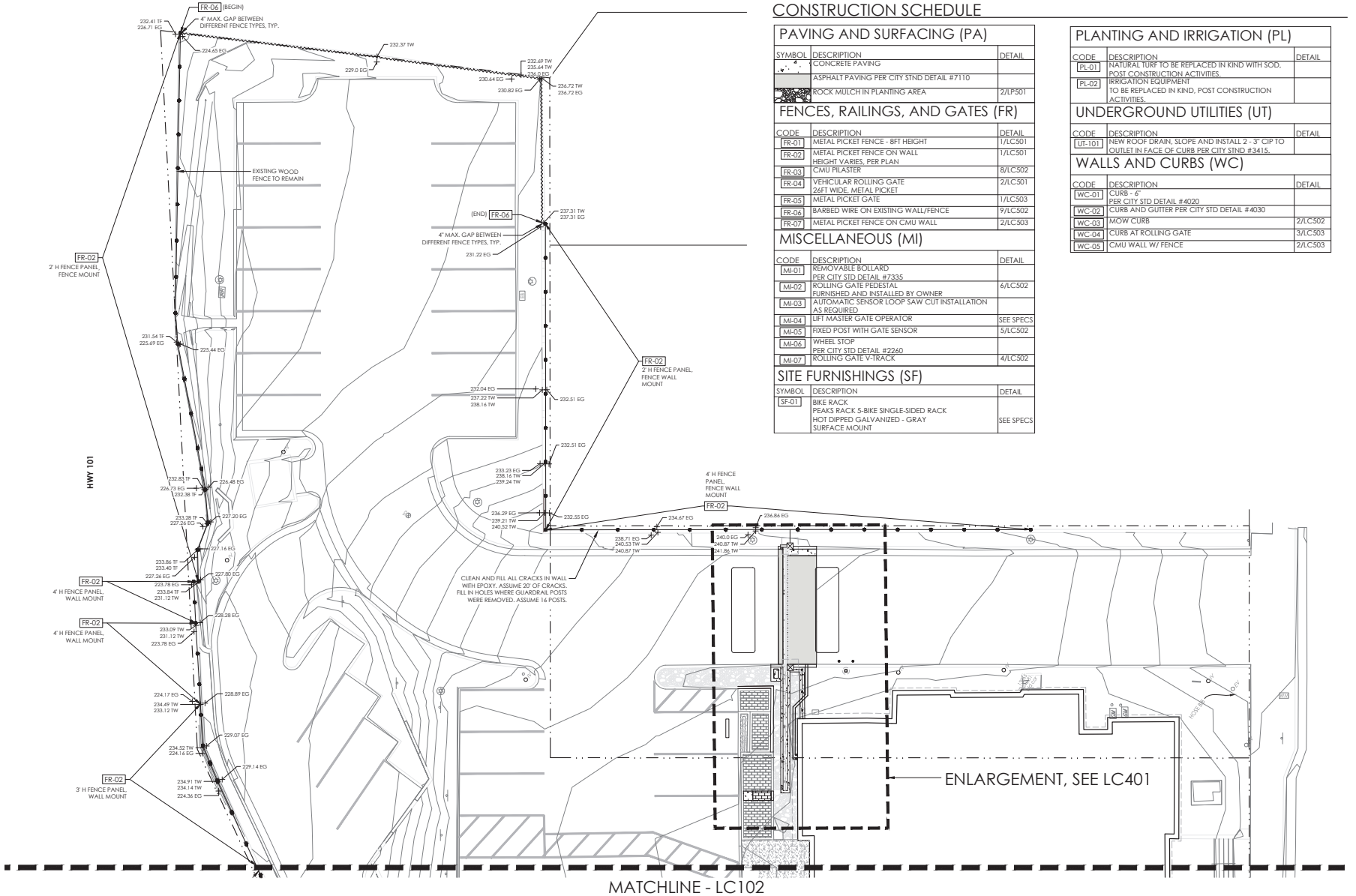

CONSTRUCTION SCHEDULE

PAVING AND SURFACING (PA)

SYMBOL	DESCRIPTION	DETAIL
	CONCRETE PAVING	
	ASPHALT PAVING PER CITY STND DETAIL #7110	
	ROCK MULCH IN PLANTING AREA	2/LP501

FENCES, RAILINGS, AND GATES (FR)

CODE	DESCRIPTION	DETAIL
FR-01	METAL PICKET FENCE - 8FT HEIGHT	1/LC501
FR-02	METAL PICKET FENCE ON WALL HEIGHT VARIES, PER PLAN	1/LC501
FR-03	CMU PILASTER	8/LC502
FR-04	VEHICULAR ROLLING GATE 26FT WIDE, METAL PICKET	2/LC501
FR-05	METAL PICKET GATE	1/LC503
FR-06	BARBED WIRE ON EXISTING WALL/FENCE	9/LC502
FR-07	METAL PICKET FENCE ON CMU WALL	2/LC503

MISCELLANEOUS (MI)

CODE	DESCRIPTION	DETAIL
MI-01	REMOVABLE BOLLARD PER CITY STD DETAIL #7335	
MI-02	ROLLING GATE PEDESTAL FURNISHED AND INSTALLED BY OWNER	6/LC502
MI-03	AUTOMATIC SENSOR LOOP SAW CUT INSTALLATION AS REQUIRED	
MI-04	LIFT MASTER GATE OPERATOR	SEE SPECS
MI-05	FIXED POST WITH GATE SENSOR	5/LC502
MI-06	WHEEL STOP PER CITY STD DETAIL #2260	
MI-07	ROLLING GATE V-TRACK	4/LC502

SITE FURNISHINGS (SF)

SYMBOL	DESCRIPTION	DETAIL
SF-01	BIKE RACK PEAKS RACK 5-BIKE SINGLE-SIDED RACK HOT DIPPED GALVANIZED - GRAY SURFACE MOUNT	SEE SPECS

PLANTING AND IRRIGATION (PL)

CODE	DESCRIPTION	DETAIL
PL-01	NATURAL TURF TO BE REPLACED IN KIND WITH SOD, POST CONSTRUCTION ACTIVITIES.	
PL-02	IRRIGATION EQUIPMENT TO BE REPLACED IN KIND, POST CONSTRUCTION ACTIVITIES.	

UNDERGROUND UTILITIES (UT)

CODE	DESCRIPTION	DETAIL
UT-101	NEW ROOF DRAIN, SLOPE AND INSTALL 2 - 3" CIP TO OUTLET IN FACE OF CURB PER CITY STND #3415.	

WALLS AND CURBS (WC)

CODE	DESCRIPTION	DETAIL
WC-01	CURB - 6" PER CITY STD DETAIL #4020	
WC-02	CURB AND GUTTER PER CITY STD DETAIL #4030	
WC-03	MOW CURB	2/LC502
WC-04	CURB AT ROLLING GATE	3/LC503
WC-05	CMU WALL W/ FENCE	2/LC503

CITY OF SAN LUIS OBISPO

PROJECT TITLE:
1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE:
CONSTRUCTION PLAN

90% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT — LANCE WINDSOR — 6/30/2026 — STATE OF CALIFORNIA

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
SCALE:	AS NOTED
DATE:	SEPTEMBER, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	LC101

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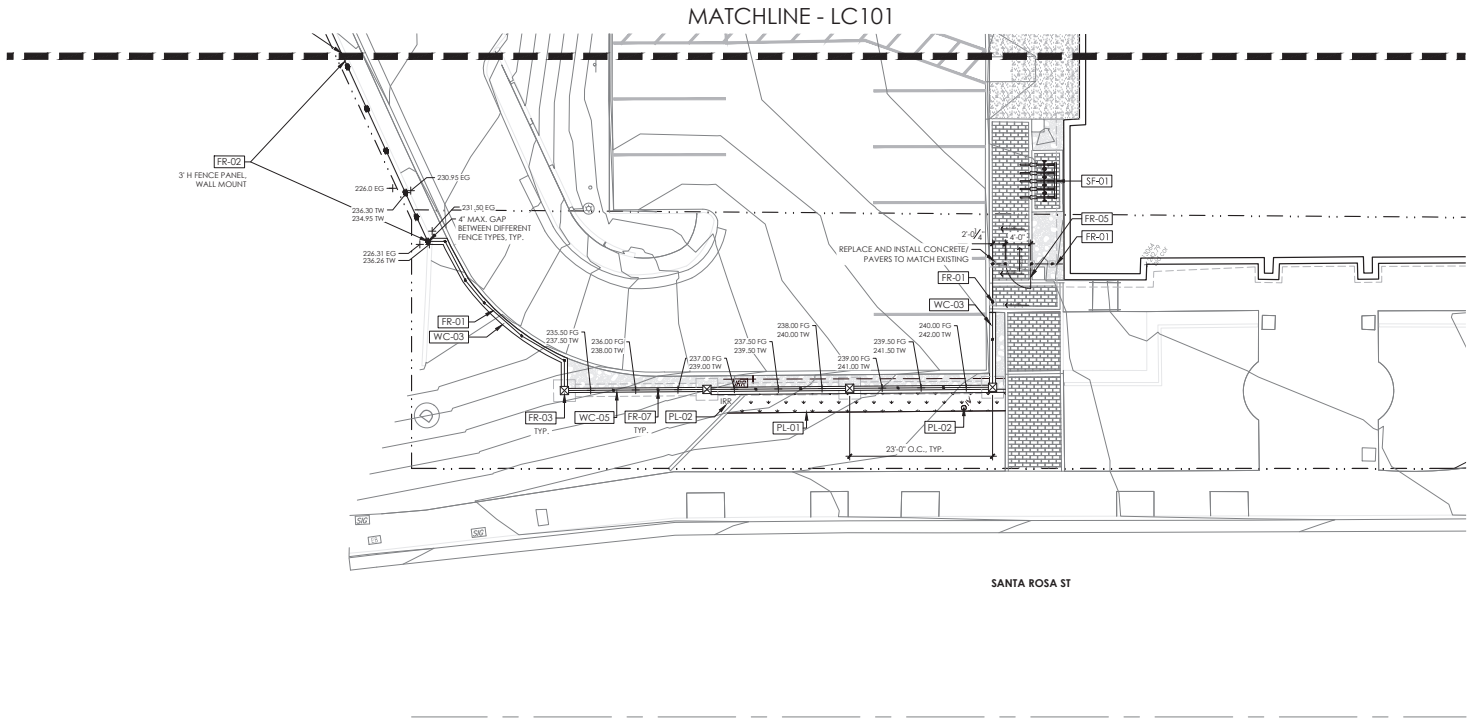


CONSTRUCTION SCHEDULE

PAVING AND SURFACING (PA)

SYMBOL	DESCRIPTION	DETAIL
	CONCRETE PAVING	
	ASPHALT PAVING PER CITY STND DETAIL #7110	
	ROCK MULCH IN PLANTING AREA	2/LP501

FENCES, RAILINGS, AND GATES (FR)

CODE	DESCRIPTION	DETAIL
FR-01	METAL PICKET FENCE - 8FT HEIGHT	1/LC501
FR-02	METAL PICKET FENCE ON WALL HEIGHT VARIES, PER PLAN	1/LC501
FR-03	CMU PILASTER	8/LC502
FR-04	VEHICULAR ROLLING GATE 26FT WIDE, METAL PICKET	2/LC501
FR-05	METAL PICKET GATE	1/LC503
FR-06	BARBED WIRE ON EXISTING WALL/FENCE	9/LC502
FR-07	METAL PICKET FENCE ON CMU WALL	2/LC503

MISCELLANEOUS (MI)

CODE	DESCRIPTION	DETAIL
MI-01	REMOVABLE BOLLARD PER CITY STD DETAIL #7335	
MI-02	ROLLING GATE PEDESTAL FURNISHED AND INSTALLED BY OWNER	6/LC502
MI-03	AUTOMATIC SENSOR LOOP SAW CUT INSTALLATION AS REQUIRED	
MI-04	LIFT MASTER GATE OPERATOR	SEE SPECS
MI-05	FIXED POST WITH GATE SENSOR	5/LC502
MI-06	WHEEL STOP PER CITY STD DETAIL #2260	
MI-07	ROLLING GATE V-TRACK	4/LC502

SITE FURNISHINGS (SF)

SYMBOL	DESCRIPTION	DETAIL
SF-01	BIKE RACK PEAKS RACK 5-BIKE SINGLE-SIDED RACK HOT DIPPED GALVANIZED - GRAY SURFACE MOUNT	SEE SPECS

PLANTING AND IRRIGATION (PL)

CODE	DESCRIPTION	DETAIL
PL-01	NATURAL TURF TO BE REPLACED IN KIND WITH SOD, POST CONSTRUCTION ACTIVITIES.	
PL-02	IRRIGATION EQUIPMENT TO BE REPLACED IN KIND, POST CONSTRUCTION ACTIVITIES.	

UNDERGROUND UTILITIES (UT)

CODE	DESCRIPTION	DETAIL
UT-101	NEW ROOF DRAIN, SLOPE AND INSTALL 2 - 3" CIP TO OUTLET IN FACE OF CURB PER CITY STND #3415.	

WALLS AND CURBS (WC)

CODE	DESCRIPTION	DETAIL
WC-01	CURB - 6" PER CITY STD DETAIL #4020	
WC-02	CURB AND GUTTER PER CITY STD DETAIL #4030	
WC-03	MOW CURB	2/LC502
WC-04	CURB AT ROLLING GATE	3/LC503
WC-05	CMU WALL W/ FENCE	2/LC503

0 5 10 20 30 feet
1"=10'

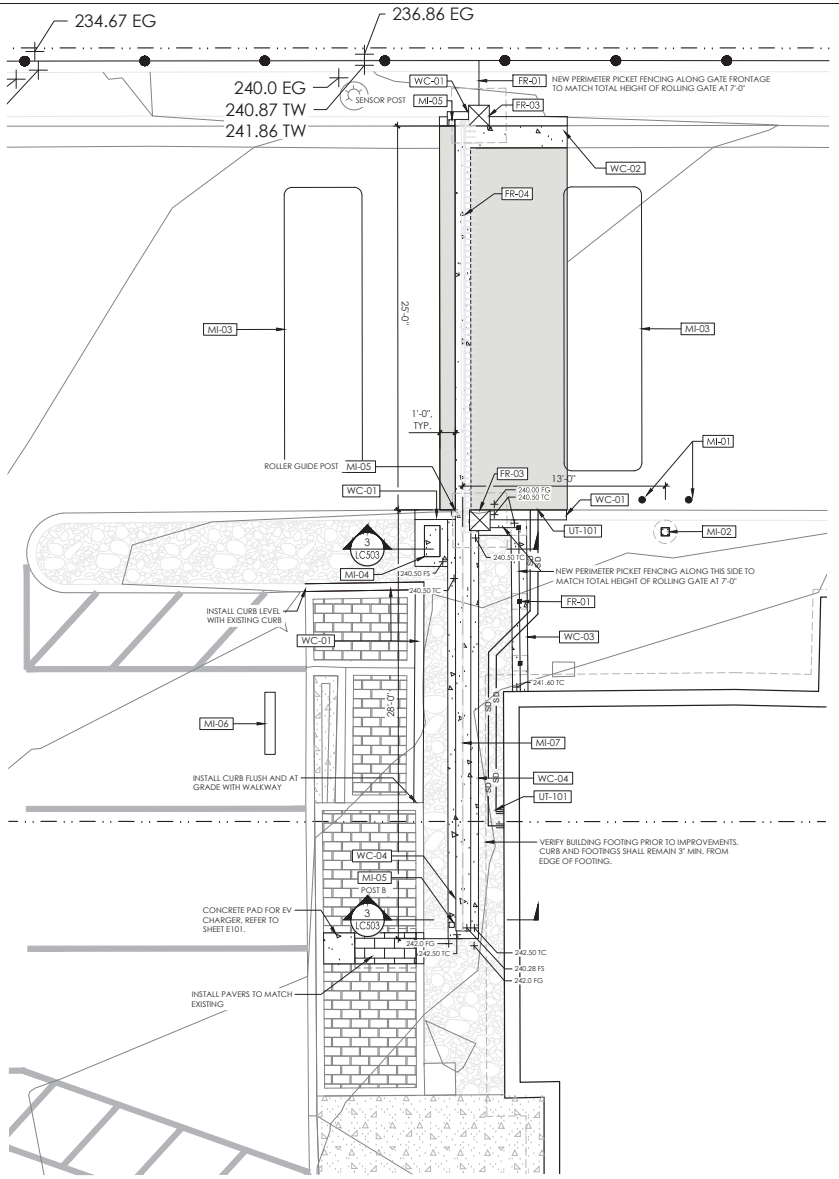
PROJECT TITLE: **1106 WALNUT FENCING IMPROVEMENTS**

SHEET TITLE: **CONSTRUCTION PLAN**

90% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT LANCE WIERSCHEM LIC. NO. 07-31-2026 STATE OF CALIFORNIA

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED
DATE: SEPTEMBER, 2024
CITY SPECIFICATION NO. 2000577-02
PLAN FILE NO. / LOCATION 2504-05-PS23
SHEET NO. LC102



CONSTRUCTION SCHEDULE

PAVING AND SURFACING (PA)

SYMBOL	DESCRIPTION	DETAIL
	CONCRETE PAVING	
	ASPHALT PAVING PER CITY STND DETAIL #7110	
	ROCK MULCH IN PLANTING AREA	2/LP501

FENCES, RAILINGS, AND GATES (FR)

CODE	DESCRIPTION	DETAIL
FR-01	METAL PICKET FENCE - 8FT HEIGHT	1/LC501
FR-02	METAL PICKET FENCE ON WALL HEIGHT VARIES, PER PLAN	1/LC501
FR-03	CMU PILASTER	8/LC502
FR-04	VEHICULAR ROLLING GATE 26FT WIDE, METAL PICKET	2/LC501
FR-05	METAL PICKET GATE	1/LC503
FR-06	BARBED WIRE ON EXISTING WALL/FENCE	9/LC502
FR-07	METAL PICKET FENCE ON CMU WALL	2/LC503

MISCELLANEOUS (MI)

CODE	DESCRIPTION	DETAIL
MI-01	REMOVABLE BOLLARD PER CITY STD DETAIL #7335	
MI-02	ROLLING GATE PEDESTAL FURNISHED AND INSTALLED BY OWNER	6/LC502
MI-03	AUTOMATIC SENSOR LOOP SAW CUT INSTALLATION AS REQUIRED	
MI-04	LIFT MASTER GATE OPERATOR	SEE SPECS
MI-05	FIXED POST WITH GATE SENSOR	5/LC502
MI-06	WHEEL STOP PER CITY STD DETAIL #2260	
MI-07	ROLLING GATE V-TRACK	4/LC502

SITE FURNISHINGS (SF)

SYMBOL	DESCRIPTION	DETAIL
SF-01	BIKE RACK PEAKS RACK 5-BIKE SINGLE-SIDED RACK HOT DIPPED GALVANIZED - GRAY SURFACE MOUNT	SEE SPECS

PLANTING AND IRRIGATION (PL)

CODE	DESCRIPTION	DETAIL
PL-01	NATURAL TURF TO BE REPLACED IN KIND WITH SOD, POST CONSTRUCTION ACTIVITIES.	
PL-02	IRRIGATION EQUIPMENT TO BE REPLACED IN KIND, POST CONSTRUCTION ACTIVITIES.	

UNDERGROUND UTILITIES (UT)

CODE	DESCRIPTION	DETAIL
UT-101	NEW ROOF DRAIN, SLOPE AND INSTALL 2 - 3" CIP TO OUTLET IN FACE OF CURB PER CITY STND #3415.	

WALLS AND CURBS (WC)

CODE	DESCRIPTION	DETAIL
WC-01	CURB - 6" PER CITY STD DETAIL #4020	
WC-02	CURB AND GUTTER PER CITY STD DETAIL #4030	
WC-03	MOW CURB	2/LC502
WC-04	CURB AT ROLLING GATE	3/LC503
WC-05	CMU WALL W/ FENCE	2/LC503

0 2 4 8 12 feet
1"=4'

PROJECT TITLE:
1106 WALNUT FENCING IMPROVEMENTS

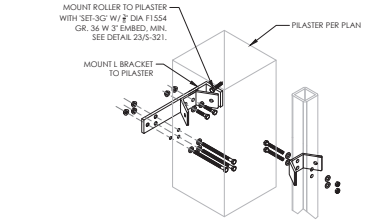
SHEET TITLE:
ROLLING GATE ENLARGEMENT

90% CONSTRUCTION DOCUMENTS

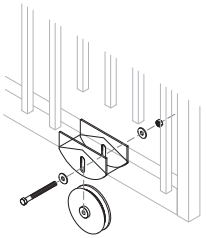
LICENSED LANDSCAPE ARCHITECT
LAURIE WEIRSCHEM
07.31.2026
STATE OF CALIFORNIA

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
SCALE:	AS NOTED
DATE:	SEPTEMBER, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	LC401

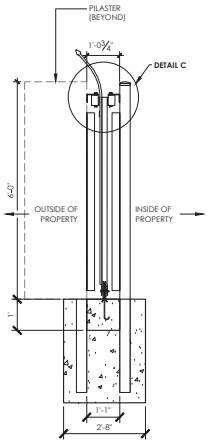
M:\2401\2504-05-PS23\LO-PO-MJ\Building Fencing\Landscape Architecture\Total LS Con\Docs\Sheet Files\LC-2504-05.dwg, LC401, Sep 12, 2024 - 10:23am, LWeirschem



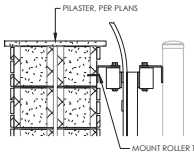
DETAIL A -
GATE RECIEVER, ISO VIEW
(ADD IN PILASTER CONNECTION?)



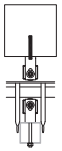
DETAIL B -
ROLLER HARDWARE, ISO VIEW



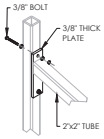
SECTION



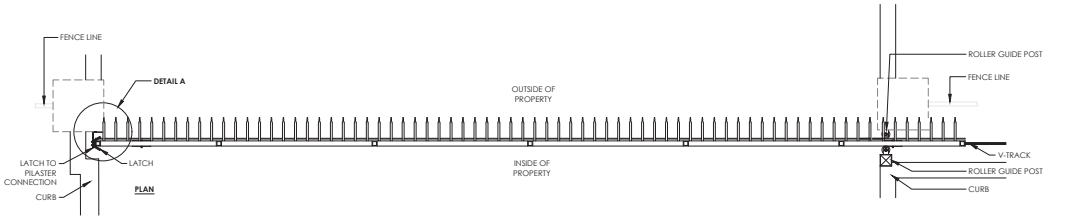
DETAIL C -
UPPER TRACK, SIDE VIEW SEE DETAIL 23/S-321.



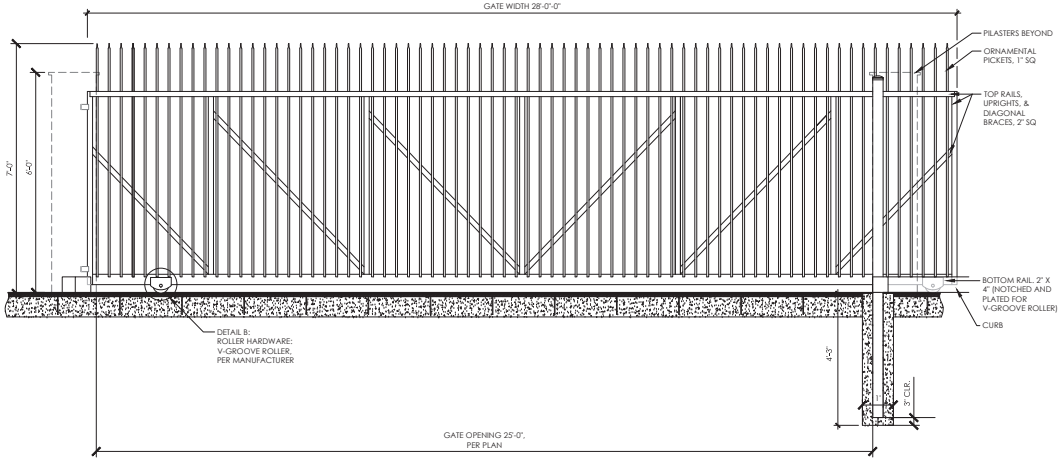
TOP VIEW



DETAIL D -
CROSS BRACE, ISO VIEW



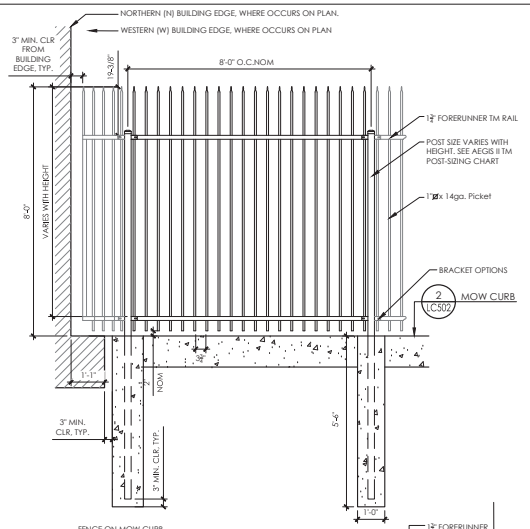
PLAN



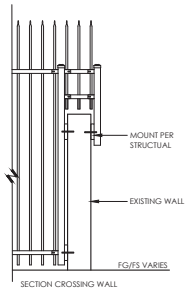
ELEVATION

2 VEHICULAR ROLLING GATE

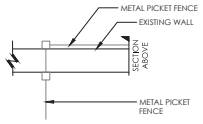
1/2" = 1'-0"



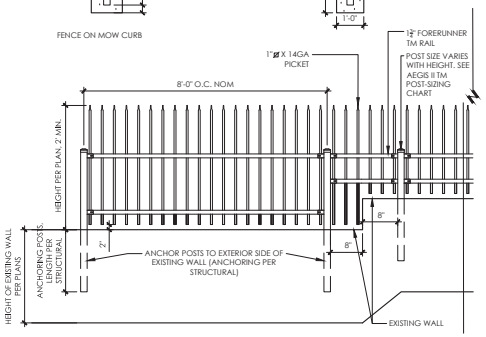
FENCE ON MOW CURB



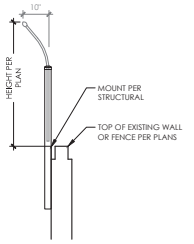
SECTION CROSSING WALL



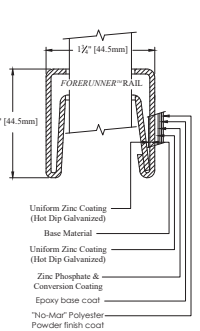
PLAN VIEW CROSSING WALL

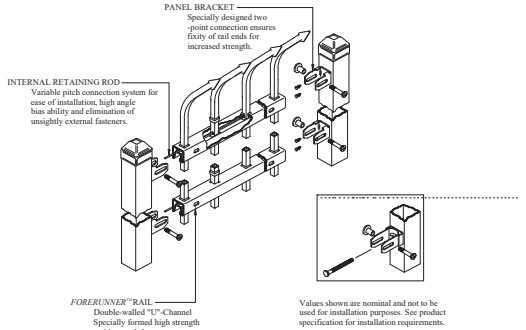


METAL PICKET FENCE ON EXISTING WALL OR FENCE



SECTION AT EXISTING WALL





Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.

NOTES:

1. POST SIZE DEPENDS ON FENCE HEIGHT AND WIND LOADS. SEE AEGIS II TM POST SIZING CHART.
2. ADDITIONAL HEIGHTS AVAILABLE ON REQUEST.
3. THIRD RAIL OPTIONAL.
4. PANELS ALSO AVAILABLE FOR 6' ON CENTER POST SPACING

1 METAL PICKET FENCE

1/2" = 1'-0"

RRM-2500-2504.05-19

PROJECT TITLE:
1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE:
CONSTRUCTION DETAILS

90% CONSTRUCTION DOCUMENTS

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED
DATE: SEPTEMBER, 2024
CITY SPECIFICATION NO.: 2000577-02
PLAN FILE NO. / LOCATION: 2504-05-PS23
SHEET NO.: LC501

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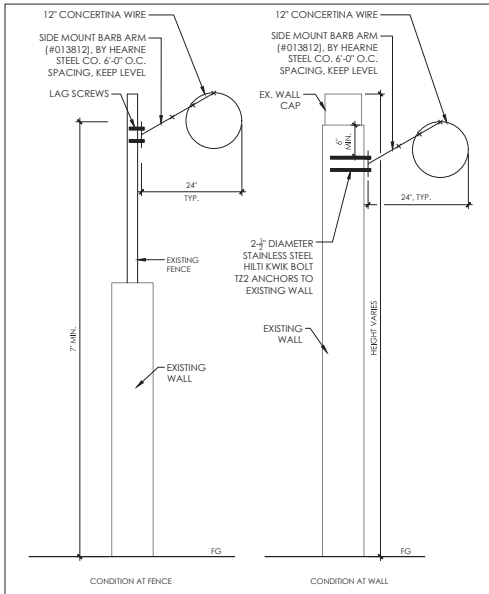
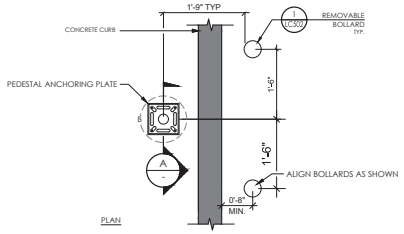
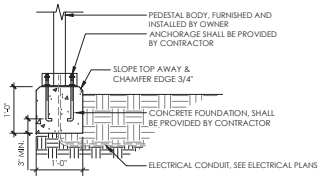
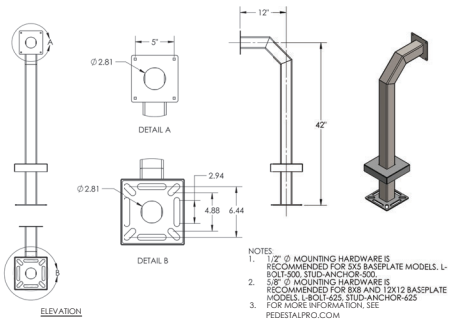


9 BARBED WIRE ON EXISTING WALL/FENCE

1" = 1'-0" RRM-2500-2504.05-111

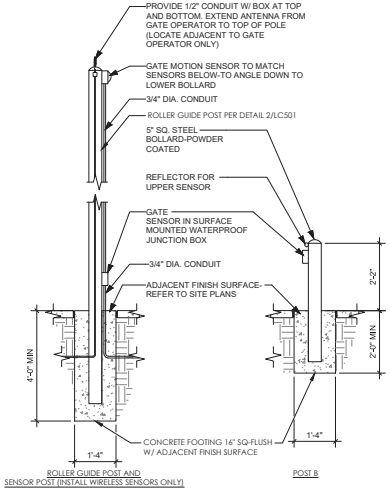






6 ROLLING GATE PEDESTAL

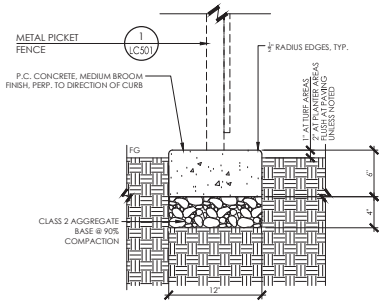
3/4" = 1'-0" RRM-2500-2504.05-101



NOTE: CONTRACTOR IS RESPONSIBLE TO INSTALL ALL SENSING DEVICES AND SAFETY MECHANISMS COMPLYING WITH UL 325. SEE SPECIFICATION 32 3119.

5 FIXED POST W/ GATE SENSOR

1/2" = 1'-0" RRM-2500-2504.05-99

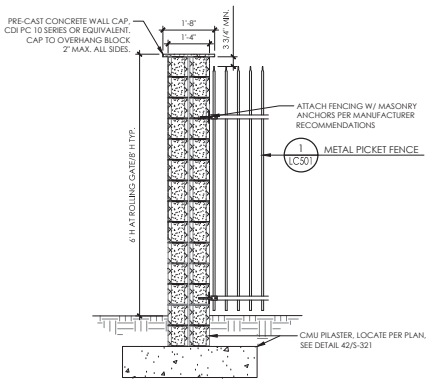


NOTES:

A. PROVIDE CONTRACTION JOINT EVERY 10' MAX.
B. PROVIDE EXPANSION JOINT EVERY 20' MAX.
C. SPACE JOINTS EVENLY BETWEEN BEGINNING AND END POINTS.

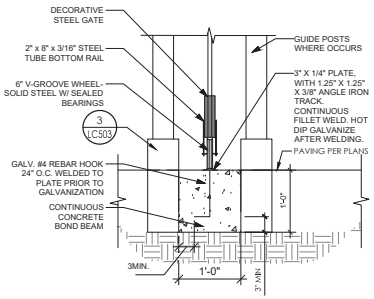
2 MOW CURB

1 1/2" = 1'-0" RRM-2500-2504.05-09



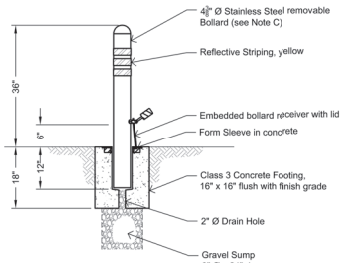
8 CMU PILASTER

1/2" = 1'-0" RRM-2500-2504.05-103



4 ROLLING GATE V-TRACK

1" = 1'-0" RRM-2500-2504.05-98



NOTES

A. PROVIDE KNOX-BOX PADLOCKS PER CITY FIRE DEPT.
B. PROVIDE 5'-0" CLEAR SPACING BETWEEN BOLLARDS (5'-3" O.C.) FOR BICYCLING FACILITIES. FOR ALL OTHER INSTALLATIONS PROVIDE 4'-0" CLEAR SPACING BETWEEN BOLLARDS (4'-3" O.C.).
C. RELIANCE FOUNDRY R-8902 OR APPROVED EQUAL.
D. ENGINEERS AND ARCHITECTS ARE ENCOURAGED TO SUBMIT ALTERNATE DESIGNS THAT ARE CONSISTENT WITH THESE DESIGN FEATURES, AND THE PROJECTS WHERE THE BOLLARDS ARE TO BE USED.
E. YELLOW REFLECTIVE TAPE SHALL BE PLACED ON EACH FACE OF BOLLARD AS DIRECTED BY ENGINEER.
F. FOR BICYCLING FACILITIES, PROVIDE PATHWAY STRIPING THAT CONFORMS TO CA MUTCD.

1 REMOVABLE BOLLARD

3/4" = 1'-0" RRM-2500-2504.05-97

CITY OF SAN LUIS OBISPO

PROJECT TITLE:
1106 WALNUT FENCING IMPROVEMENTS

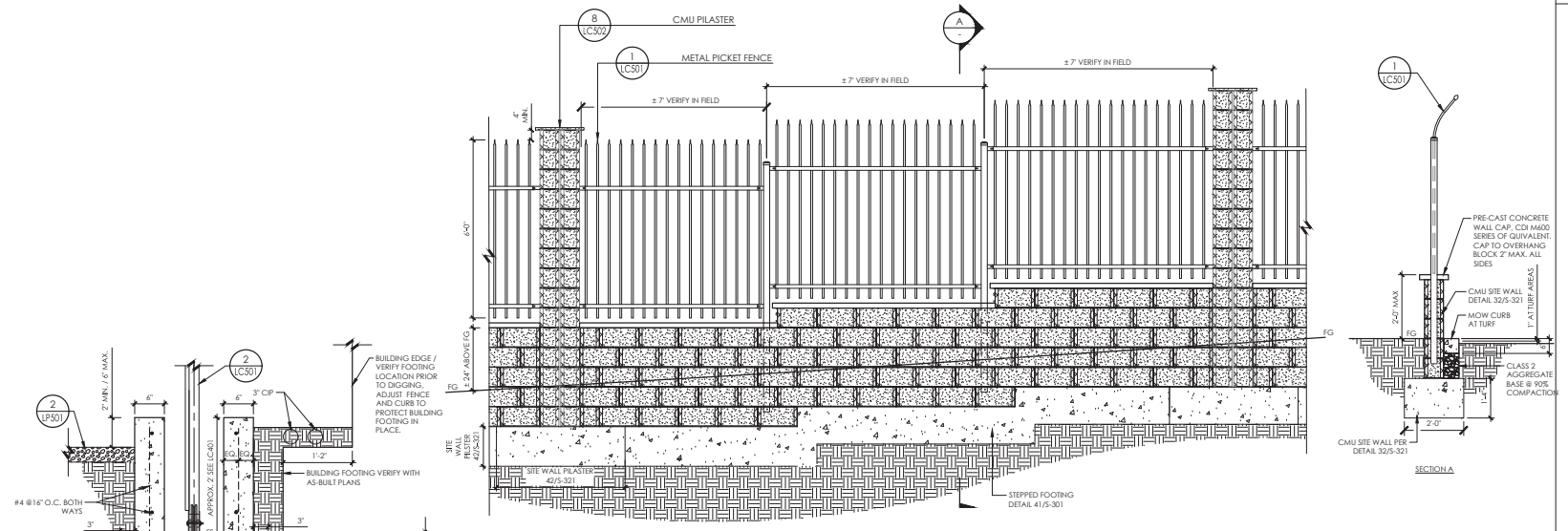
SHEET TITLE:
CONSTRUCTION DETAILS

90% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT — LANE WIRSCHEM — No. 6407 — STATE OF CALIFORNIA

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
SCALE:	AS NOTED
DATE:	SEPTEMBER, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	LC502

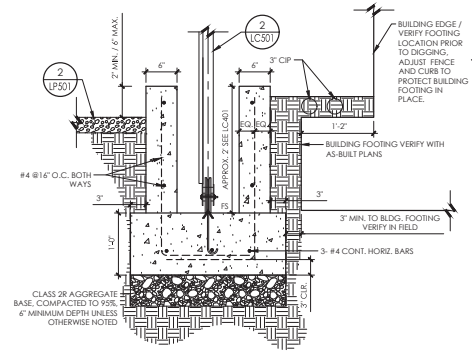
N:\2401\2504-05-PS23_SLO-PD-N-Building Fencing\Landscape Architecture\Civil\Task L2-Con Docs\Sheet Files\LC 2504-05.dwg, LC502, Sep 12, 2024 - 10:24am, LDWirschem



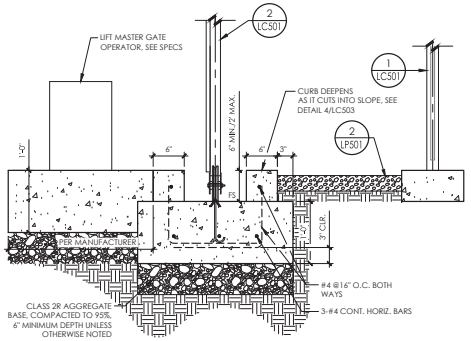
2 METAL PICKET FENCE ON CMU WALL

1/2" = 1'-0"

RRM-2500-2504.05-106



CONDITION WHERE RETAINING

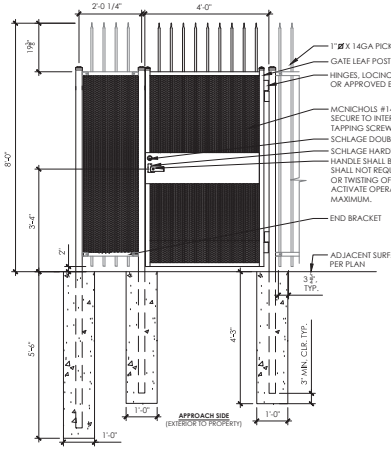


CONDITION AT DRIVEWAY

3 CURB AT ROLLING GATE

1" = 1'-0"

RRM-2500-2504.05-114



1 METAL PICKET GATE

1/2" = 1'-0"

RRM-2500-2504.05-110

PROJECT TITLE:

1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE:

CONSTRUCTION DETAILS

90% CONSTRUCTION DOCUMENTS

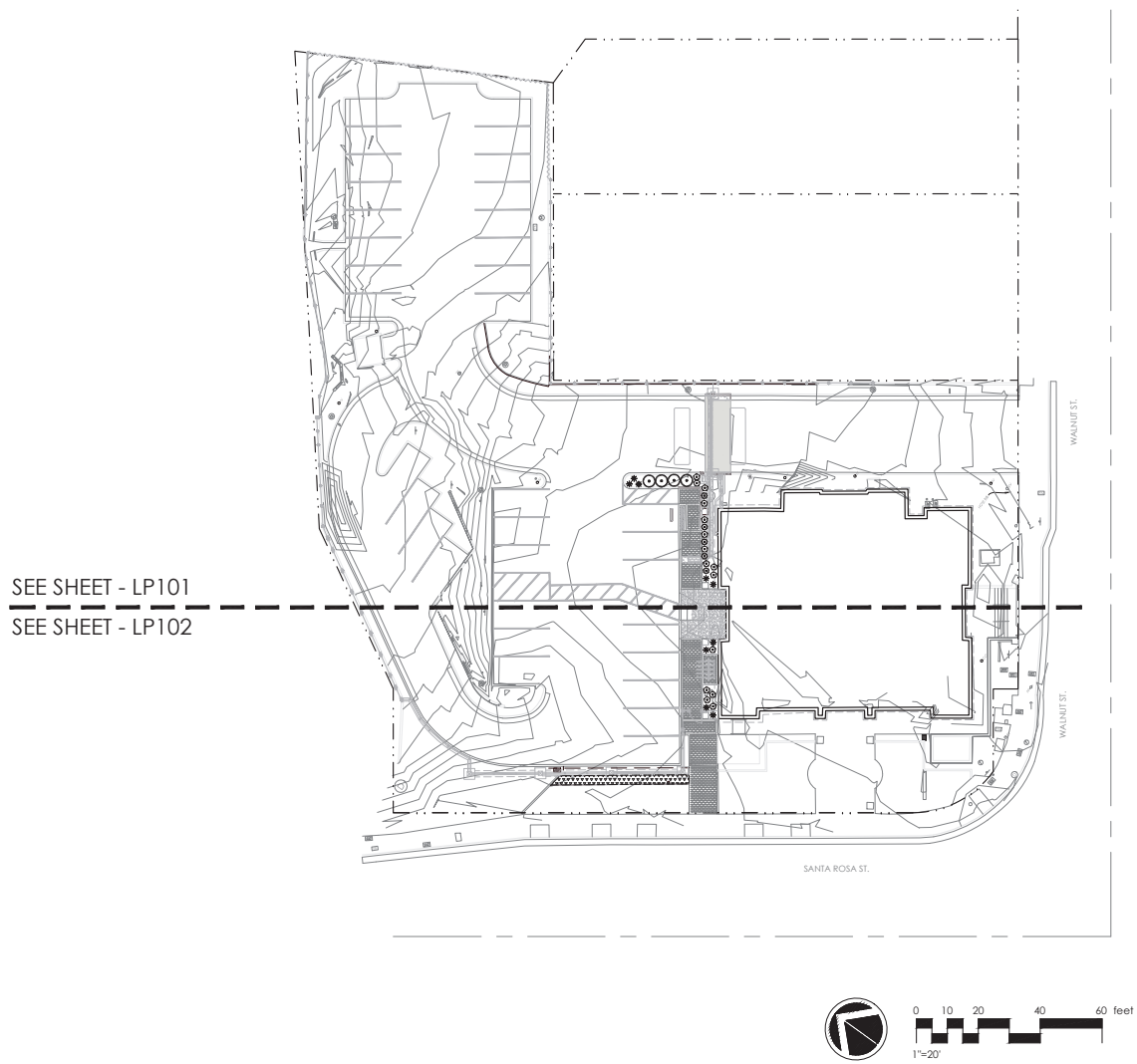
LICENSED LANDSCAPE ARCHITECT — STATE OF CALIFORNIA

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
SCALE:	AS NOTED
DATE:	SEPTEMBER, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	LC503

N:\2401\2504-05-PS23_BLD-PD-M-Building Fencing\Landscape Architecture\Task L2-ConDocs\Sheet Files\LC 2504-05.dwg, LC503, Sep 12, 2024 - 10:25am, LDWerscham

PLANTING NOTES

1. CONTRACTOR SHALL SUBMIT LABELED PHOTOS OF ALL PLANT MATERIAL, TREES AND GROUNDCOVERS. PHOTOS SHALL BE OF THE SPECIFIED CONTAINER SIZE. PHOTOS SHALL BE SUBMITTED AS A COMPLETE SUBMITTAL PACKAGE FOR REVIEW AND APPROVAL. INCLUDE PHOTOS OF ANY SUBSTITUTES, CLEARLY LABELED.
2. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL PLANT MATERIAL AS SHOWN ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS.
3. PLANT SCHEDULE ON THE DRAWINGS SHALL BE USED AS A GUIDE ONLY. CONTRACTOR SHALL TAKEOFF AND VERIFY SIZES AND QUANTITIES BY PLAN CHECK. NOTIFY PROJECT LANDSCAPE ARCHITECT OF ANY MAJOR DISCREPANCIES.
4. UNLESS DESIGNATED ON THE DRAWINGS OTHERWISE, ALL STRUCTURAL AND HARDSCAPE IMPROVEMENTS SHALL BE CONSTRUCTED AND FINISHED AHEAD OF PLANTING.
5. ADJUST PLANT MATERIAL AS NECESSARY AROUND UTILITY LOCATIONS. NOTIFY PROJECT LANDSCAPE ARCHITECT OF ANY MAJOR CONFLICTS OR NECESSARY ADJUSTMENTS.
6. SOILS SHALL BE PREPARED AND AMENDED PER THE SPECIFICATIONS. SOIL AMENDMENTS AND PREPARATION SHALL CONFORM TO STATE AB1881 AND LOCAL WATER EFFICIENT LANDSCAPE ORDINANCES. ALL WORK ON THE IRRIGATION SYSTEM INCLUDING OPERATIONAL TESTS, AND BACKFILLING OF TRENCHES SHALL BE COMPLETED AHEAD OF PLANTING.
7. LOCATIONS OF ALL PLANT MATERIAL SHALL BE REVIEWED ON SITE BY THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO PLANTING. THE REPRESENTATIVE RESERVES THE RIGHT TO MAKE ANY ADJUSTMENTS, SUBSTITUTIONS, ADDITIONS, AND DELETIONS TO THE PLANT LAYOUT AS WORK PROGRESSES.
8. ALL PLANTING AREAS TO RECEIVE 3" THICK MIN. LAYER OF ROCK MULCH. SEE SPECIFICATIONS FOR MULCH TYPE. PROVIDE SAMPLE FOR APPROVAL.
9. THESE PLANS COMPLY WITH THE CRITERIA OF THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE AND THE CRITERIA HAVE BEEN APPLIED FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLAN.



PROJECT TITLE: 1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE: SITE REFERENCE PLAN

90% CONSTRUCTION DOCUMENTS

DESIGNED BY:

DRAWN BY:

CHECKED BY:

APPROVED BY:

SCALE: AS NOTED

DATE: SEPTEMBER, 2024

CITY SPECIFICATION NO. 2000577-02

PLAN FILE NO. / LOCATION 2504-05-PS23

SHEET NO. LP001

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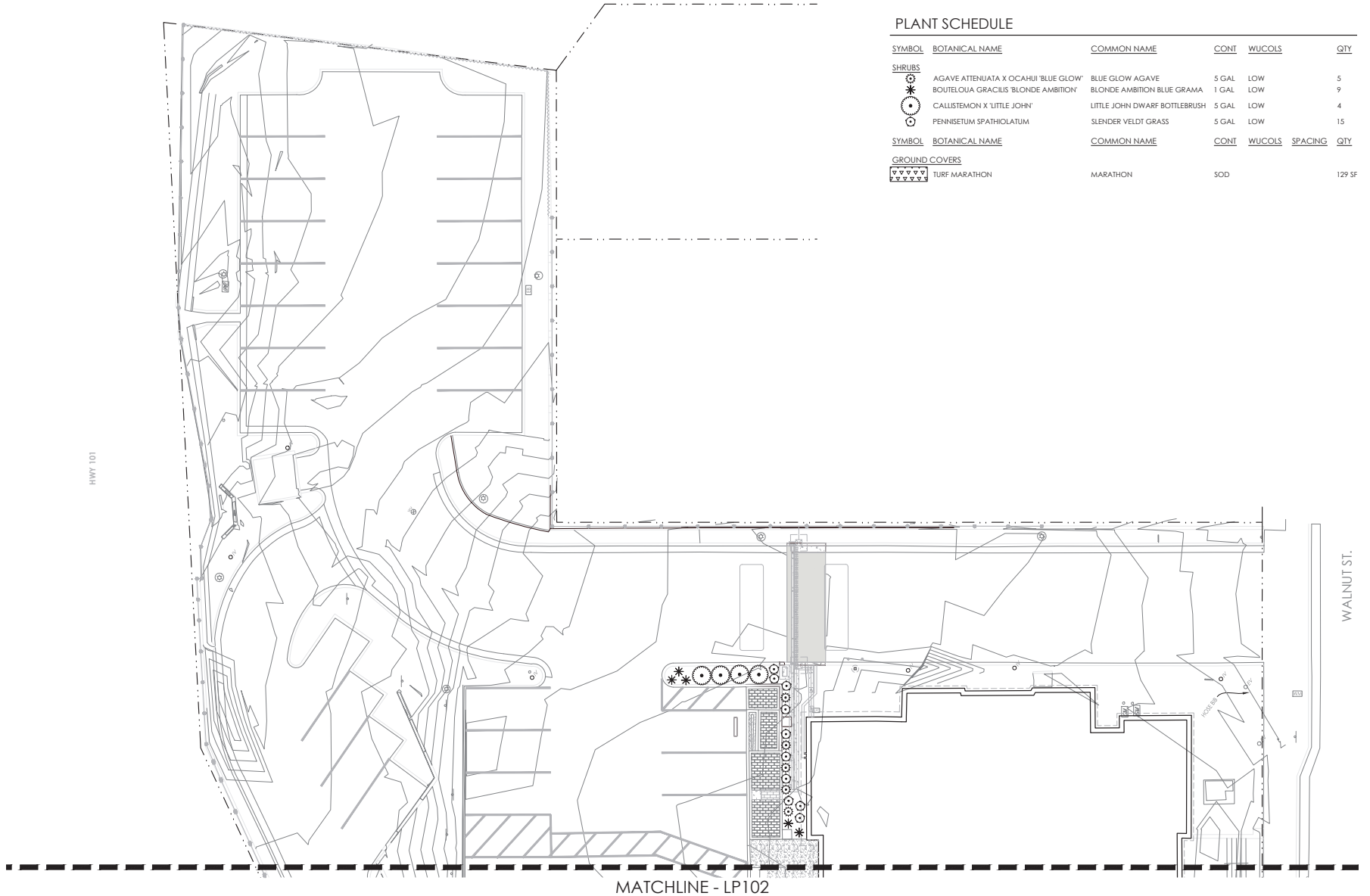


PLANT SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS		QTY
SHRUBS						
	AGAVE ATTENUATA X OCAHUI 'BLUE GLOW'	BLUE GLOW AGAVE	5 GAL	LOW		5
	BOUTELOUA GRACILIS 'BLONDE AMBITION'	BLONDE AMBITION BLUE GRAMA	1 GAL	LOW		9
	CALLISTEMON X 'LITTLE JOHN'	LITTLE JOHN DWARF BOTTLEBRUSH	5 GAL	LOW		4
	PENNISETUM SPATHIOLATUM	SLENDER VELDT GRASS	5 GAL	LOW		15
SYMBOL	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	SPACING	QTY
GROUND COVERS						
	TURF MARATHON	MARATHON	SOD			129 SF

PROJECT TITLE: **1106 WALNUT FENCING IMPROVEMENTS**

SHEET TITLE: **PLANTING PLAN**

90% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT
LANDE WIERSCHEM LICENSED
07-31-2024
EXPIRING 2026
STATE OF CALIFORNIA

DESIGNED BY:

DRAWN BY:

CHECKED BY:

APPROVED BY:

SCALE: AS NOTED

DATE: SEPTEMBER, 2024

CITY SPECIFICATION NO. 2000577-02

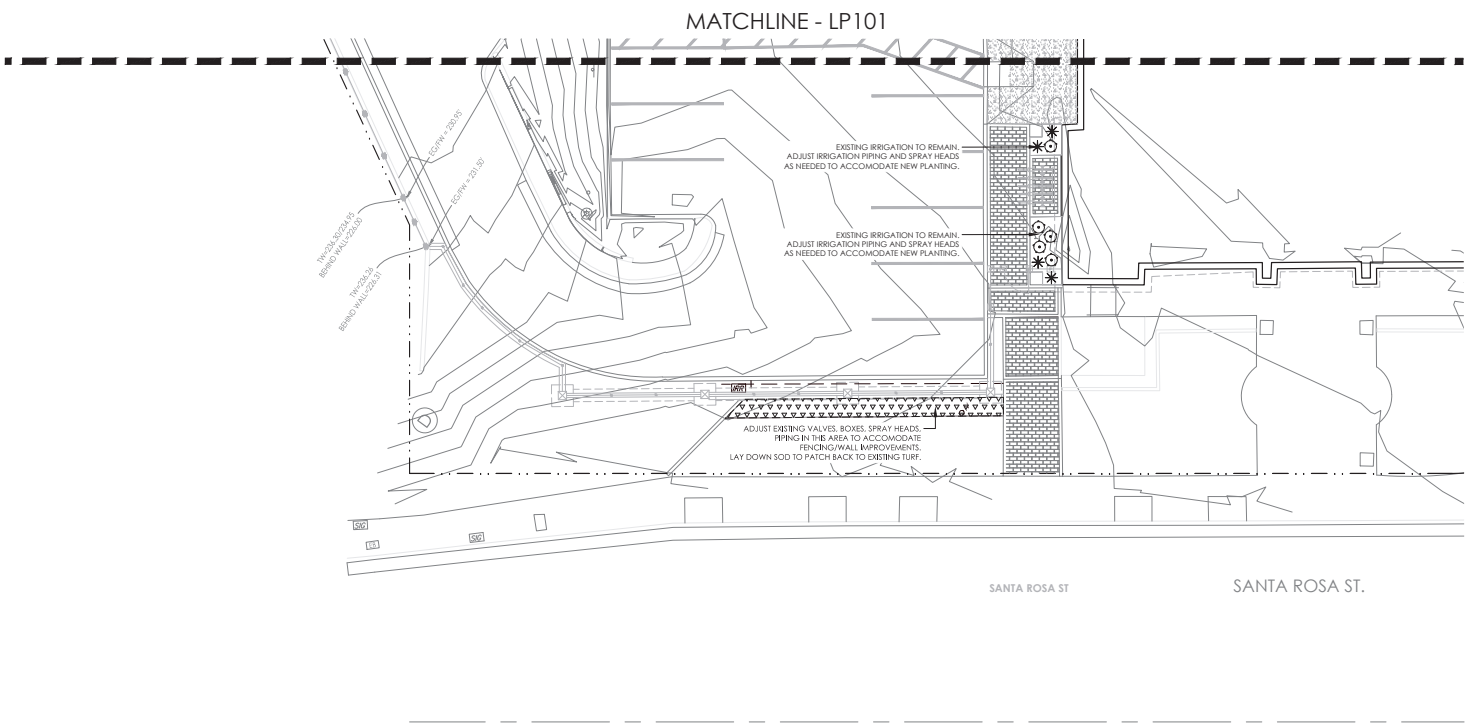
PLAN FILE NO. / LOCATION 2504-05-PS23

SHEET NO. LP101

N:\2400\2504-05-PS23-SLO-PD-N-Building-Fencing\Landscape-Architecture\Task-L2-ConDocs\Sheet-Files\LP-2504-05.dwg, LP101, Sep 04, 2024 7:23pm, LDWierschem

PLANT SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS		QTY	DETAIL
SHRUBS							
	AGAVE ATTENUATA X OCAHUI 'BLUE GLOW'	BLUE GLOW AGAVE	5 GAL	LOW		5	1/LP501
	BOUTELOUA GRACILIS 'BLONDE AMBITION'	BLONDE AMBITION BLUE GRAMA	1 GAL	LOW		9	1/LP501
	CALLISTEMON X 'LITTLE JOHN'	LITTLE JOHN DWARF BOTTLEBRUSH	5 GAL	LOW		4	1/LP501
	PENNISETUM SPATHIOLATUM	SLENDER VELDT GRASS	5 GAL	LOW		15	1/LP501
SYMBOL	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	SPACING	QTY	DETAIL
GROUND COVERS							
	TURF MARATHON	MARATHON	SOD			129 SF	



0 5 10 20 30 feet

1"=10'

PROJECT TITLE: **1106 WALNUT FENCING IMPROVEMENTS**

SHEET TITLE: **PLANTING PLAN**

90% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT LANCE WIERSCHEM LICENSE NO. 02-31-2006 STATE OF CALIFORNIA

DESIGNED BY:

DRAWN BY:

CHECKED BY:

APPROVED BY:

SCALE: AS NOTED

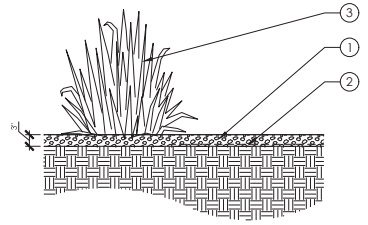
DATE: SEPTEMBER, 2024

CITY SPECIFICATION NO. 2000577-02

PLAN FILE NO. / LOCATION 2504-05-PS23

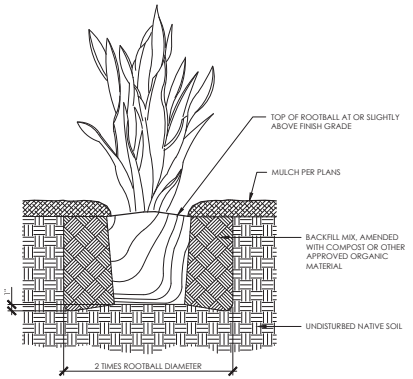
SHEET NO. LP102

N:\2400\2504-05-PS23-SLO-PD-N-Building-Fencing\Landscape-Architecture\Task-L2-ClanDocs\Sheet-Files\LP-2504-05.dwg, LP102, Sep 04, 2024 7:23pm, LDWierschem



1 CRUSHED ROCK MULCH PER PLANS
2 FILTER FABRIC
3 PLANTING PER PLANS

2 ROCK MULCH IN PLANTING AREA
1 1/2" = 1'-0"
RRM-2500-2504.05-11



1 SHRUB PLANTING
1 1/2" = 1'-0"
RRM-2500-2504.05-70

PROJECT TITLE: 1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE: PLANTING DETAILS

90% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT
LARE WIERSCHEM LICENSED
07-31-2024
STATE OF CALIFORNIA

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED
DATE: SEPTEMBER, 2024
CITY SPECIFICATION NO. 2000577-02
PLAN FILE NO. / LOCATION 2504-05-PS23
SHEET NO. LP501

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SYMBOLS

- DETAIL REFERENCE BUBBLE WITH LEADER
- DETAIL REFERENCE BUBBLE
- FULL HEIGHT SECTION INDICATOR
- ELEVATION OF WALL OR FRAME
- NORTH ARROW
- TOP/BOTTOM OF ELEVATIONS
- SLOPE
- WELDED WIRE FABRIC (WWF LAYER)
- STEPPED SURFACE; FLOOR DEPRESSION
- SLOPED SURFACE
- STEPPED FOOTING
- BOTTOM STEPPED FOOTING
- INDICATES SHEAR TYPE AND LENGTH, PER SHEAR WALL SCHEDULE
- INDICATES SPAN AND DIRECTION OF PREFABRICATED ROOF TRUSS (BY OTHERS)
- INDICATES SPAN AND DIRECTION OF ROOF RAFTER OR FLOOR JOIST WITH WEB STIFFENER
- INDICATES SPAN AND DIRECTION OF ROOF RAFTER OR FLOOR JOIST
- INDICATES EXTENTS OF FRAMING OR OTHER STRUCTURAL ELEMENT
- INDICATES HEADER @ OPENING PER HEADER SCHEDULE
- EARTH LAYER
- INDICATES SAND OR GROUT
- INDICATES GRAVEL
- STEEL IN CROSS SECTION
- INDICATES BEARING WALL
- SHADED AREA INDICATES CALIFORNIA FRAMING
- SHADED AREA INDICATES FOOTPRINT OF FLOOR ABOVE
- STEEL HSS TUBE COLUMN
- STEEL HSS OR PIPE COLUMN
- WIDE FLANGE STEEL COLUMN
- WOOD POST
- INDICATES TOP PLATE SPLICE NAILING PER SCHEDULE
- INDICATES SHEAR WALL STRAP / HOLDOWN TYPE PER SCHEDULE
- INDICATES PAD FOOTING TYPE PER SCHEDULE
- INDICATES CONTINUOUS FOOTING TYPE PER SCHEDULE
- ANGLE BRACE
- DOUBLE ANGLE BRACE
- DRAG STRUT CONNECTION
- FULL HEIGHT STIFFENER CONNECTION
- MOMENT CONNECTION
- MEMBER SPLICE
- TOP OF STEEL ± ELEVATION
- NUMBER OF EVENLY SPACED SHEAR STUDS
- SPECIAL STUD SPACING SEE TYPICAL STEEL DETAILS
- BEAM CAMBER AT MID-SPAN

WALL TYPES

- INDICATES PLYWOOD SIDE FOR SHEARWALL
- INDICATES BEARING WOOD WALL BELOW
- INDICATES BEARING WOOD WALL ABOVE
- INDICATES NON-BEARING WOOD WALL BELOW
- INDICATES NON-BEARING WOOD WALL ABOVE
- INDICATES EXISTING BEARING WOOD WALL
- INDICATES EXISTING NON-BEARING WOOD WALL
- INDICATES BEARING CMU WALL BELOW
- INDICATES BEARING CMU WALL ABOVE
- INDICATES NON-BEARING CMU WALL BELOW
- INDICATES NON-BEARING CMU WALL ABOVE
- INDICATES EXISTING BEARING CMU WALL
- INDICATES EXISTING NON-BEARING CMU WALL
- INDICATES BEARING CONCRETE WALL BELOW
- INDICATES BEARING CONCRETE WALL ABOVE
- INDICATES NON-BEARING CONCRETE WALL BELOW
- INDICATES NON-BEARING CONCRETE WALL ABOVE
- INDICATES EXISTING BEARING CONCRETE WALL
- INDICATES EXISTING NON-BEARING CONCRETE WALL

SHEET INDEX

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S-301	TYPICAL CONCRETE DETAILS
S-321	MASONRY DETAILS

ABBREVIATIONS

A & B	ABOVE AND BELOW
AB	ANCHOR BOLT
ABV	ABOVE
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURAL EXPOSED STRUCTURAL STEEL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	ENGINEERED WOOD ASSOCIATION (FORMERLY THE AMERICAN PLYWOOD ASSOCIATION)
APPVD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL; ARCHITECT
AWPA	AMERICAN WOOD PRESERVERS ASSOCIATION
AWS	AMERICAN WELDING SOCIETY
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT OR B	BOTTOM
BRC	BRACE
BRG	BEARING
BTWN	BETWEEN
CANT	CANTILEVER
CAM OR C	CAMBER
CC	CENTER TO CENTER
CG	CENTER OF GRAVITY
CIP	CAST-IN-PLACE
CJ	CONSTRUCTION JOINT; CONTROL JOINT
CL	CENTER LINE
CLR	CLEARANCE; CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPRESSION
CONC	CONCRETE
CONN	CONNECTION; CONNECT
CONSTR	CONSTRUCTION
CONT	CONTINUE; CONTINUOUS
CONTR	CONTRACTOR
CJP	COMPLETE JOINT PENETRATION WELD
CTR	CENTER
CTSK	COUNTERSINK; COUNTERSUNK
CU FT	CUBIC FOOT
d	PENNY (NAIL OR BAR DIA)
DBL	DOUBLE
DEPT	DEPARTMENT
DET	DETAIL
DF	DOUGLAS FIR/LARCH
DIA OR Ø	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION
DN	DOWN
DO	DO OVER
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMBED	EMBEDMENT
EN	EDGE NAIL
ENGR	ENGINEER
EQ	EQUAL OR EQUIV ALENT
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXIST or (E)	EXISTING
EXT	EXTERIOR
FDN	FOUNDATION
FIN	FINISH
FJ	FLOOR JOIST
FLG	FLANGE
FLR	FLOOR
FN	FIELD NAIL
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FRMG	FRAMING
FT	FOOT; FEET
FTA	FLOOR TIE ABOVE
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GLB	GLUED LAMINATED BEAM
GR	GRADE
GRND	GROUND
H or HORIZ	HORIZONTAL
HDR	HEADER
HGR	HANGER
HP	HIGH POINT
HSH	HORIZONTALLY SLOTTED HOLES
HT	HEIGHT
ID	INSIDE DIAMETER
IF	INSIDE FACE
I-JST	I-JOIST
IN	INCH
INCL	INCLUDE
INFO	INFORMATION
INSP	INSPECTION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIPS
KS	KING STUD
KP	KING POST
KSI	KIPS PER SQUARE INCH
LB(S) OR #	POUND(S)
LF	LINEAL FOOT
LIN	LINEAL; LINEAR
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LSH	LONG SLOTTED HOLES
LSL	LAMINATED STRAND LUMBER
LT WT	LIGHTWEIGHT
LVL	LEVEL OR LAMINATED VENEER LUMBER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM; MINUTE
MISC	MISCELLANEOUS
(N)	NEW
N	NORTH
NO or #	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OSB	ORIENTED STRAND BOARD
P/A	POST ABOVE
PARA OR //	PARALLEL
PC	PRECAST; PIECE
PERP	PERPENDICULAR
PI	PLYWOOD INDEX
PL OR PL.	PLATE
PL	PROPERTY LINE
PLF	POUNDS PER LINEAL FOOT
PLCS	PLACES
PLY	PLYWOOD
PROP	PROPERTY
PT	PRESSURE TREATED
PW	PLATE WASHER
PJP	PARTIAL JOINT PENETRATION WELD
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PVMT	PAVEMENT
#	POUND; NUMBER
REF	REFERENCE
REINF	REINFORCE; REINFORCING
REQD	REQUIRED
RF	ROOF
RR	ROOF RAFTER
Ø	ROUND; DIAMETER
SCHED	SCHEDULE
SECT	SECTION
SEP	SEPARATION
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SOG	SLAB ON GRADE
SN	SHEAR NAIL
SPCG	SPACING
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
SSL	SHORT SLOTTED HOLES
STD	STANDARD
STGR	STAGGER
STIFF	STIFFENERS
STIRR	STIRRUP
STL	STEEL
STRUCT	STRUCTURAL
SW	SHEAR WALL
SYM	SYMMETRICAL
TB	TIE BEAM
T & B	TOP AND BOTTOM
T & G	TONGUE & GROOVE
TO	TOP OF
TOC	TOP OF CURB; TOP OF CONCRETE
TOF	TOP OF FOOTING
TEMP	TEMPERATURE; TEMPORARY
THRU	THROUGH
THK	THICKNESS/THICK
THR	THREADED
TOP or T	TOP
TOS	TOP OF STEEL/TOP OF SLAB
TOW	TOP OF WALL
TS	TRIMMER STUD
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UT	ULTRA-SONIC TEST
VERT	VERTICAL
VSH	VERTICAL SLOTTED HOLES
W/	WITH
W/O	WITHOUT
WO	WHERE OCCURS
WD	WOOD
WP	WORK POINT; WATERPROOF
WWF	WELDED WIRE FABRIC

STRUCTURAL STEEL SHAPES

W	W SHAPE
C	AMERICAN STD CHANNEL SHAPE
MC	MISC. CHANNEL SHAPE
L	ANGLE SHAPE
WT, ST, MT	STRUCT TEE SHAPE
PIPE	STANDARD PIPE SHAPE
PIPE-X	EXTRA STRONG PIPE SHAPE
PIPE-XX	DBL EXTRA STRONG PIPE SHAPE
HSS	HOLLOW STRUCTURAL SECTION

CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE: SHEET INDEX, ABBREVIATIONS, & SYMBOLS

100% CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER — JESSICA M. MEADOWS — No. 84,884 — STRUCTURAL — STATE OF CALIFORNIA

DESIGNED BY:	
DRAWN BY:	J. LONG
CHECKED BY:	J. MEADOWS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	AUGUST 23, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	S-101

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MASONRY

1. MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF "SPECIFICATION FOR MASONRY STRUCTURES" (TMS 402-16) PUBLISHED BY THE MASONRY SOCIETY AND WITH CHAPTER 21 OF THE CODE.

2. CONCRETE MASONRY UNITS SHALL COMPLY WITH SECTION 2103.1 OF THE CODE AND BE HOLLOW LOAD BEARING CONFORMING TO ASTM C90 AND MEET THE FOLLOWING REQUIREMENTS:

WALL DESIGN STRENGTH	NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS	DENSITY
f'm = 2,000 PSI	2,000 PSI MINIMUM	MEDIUM WIEGHT
f'm = 2,500 PSI	3,250 PSI MINIMUM	MEDIUM WIEGHT

3. MORTAR SHALL CONFORM TO SECTION 2103.2 OF THE CODE AND ASTM C270 AND HAVE THE FOLLOWING PROPERTIES AND STRENGTHS:

WALL DESIGN STRENGTH	MORTAR TYPE	MORTAR 28 DAY COMPRESSIVE STRENGTH
f'm = 2,000 PSI	S	2,000 PSI MINIMUM
f'm = 2,500 PSI	M	2,500 PSI MINIMUM

SEE NOTES UNDER "TEST AND INSPECTION REQUIREMENTS" FOR TESTING REQUIREMENTS.

4. GROUT SHALL COMPLY WITH SECTION 2103.3 OF THE CODE AND ASTM C476. GROUT SHALL MEET THE FOLLOWING REQUIREMENTS:

WALL DESIGN STRENGTH	COMPRESSIVE STRENGTH	GROUT 28 DAY MIX DESIGN
f'm = 2,000 PSI	2,000 PSI	3 PARTS SAND 2 PARTS PEA GRAVEL 1 PART PORTLAND CEMENT 8-11 INCH SLUMP
f'm = 2,500 PSI	-	SUBMIT MIX DESIGN

SEE NOTES UNDER "TEST AND INSPECTION REQUIREMENTS" FOR TESTING REQUIREMENTS.

5. MORTAR AND GROUT COMPONENTS SHALL CONFORM WITH THE FOLLOWING:

COMPONENT	ASTM	NOTES
SAND	ASTM C144	
LIME	ASTM C207	
PORTLAND CEMENT	ASTM C150	TYPE I or II, LOW ALKALI, < 6 MONTHS OLD
PEA GRAVEL	ASTM C301	

6. ADMIXTURES SHALL NOT BE USED IN GROUT EXCEPT BY SPECIFIC CONSENT OF SEOR. SEE NOTES UNDER "TEST AND INSPECTION REQUIREMENTS" FOR TESTING REQUIREMENTS.

7. REINFORCING BARS - SEE NOTES UNDER "REINFORCING STEEL" FOR REQUIREMENTS.

8. PROVIDE A MINIMUM OF 1/2" CLEAR BETWEEN MAIN REINFORCING AND MASONRY UNITS.

9. ALL CELLS SHALL BE GROUTED SOLID.

10. DESIGN f'm = 2,000 PSI FOR CMU CONSTRUCTION, TYPICAL. PRISM TESTING SHALL BE PERFORMED AS PER THE REQUIREMENTS OF PROJECT SPECIFICATIONS. SEE ALSO NOTES UNDER "TEST AND INSPECTION REQUIREMENTS" FOR REQUIREMENTS.

11. USE RUNNING BOND PATTERN UNO BY ARCHITECT. USE OPEN ENDED UNITS FOR STACKED BOND PATTERN.

12. USE OF "HIGH-LIFT" GROUT CONSTRUCTION IS SUBJECT TO APPROVAL BY SEOR AND JURISDICTION. MAX GROUT LIFT HEIGHT SHALL BE 5'-4" IN ACCORDANCE WITH TMS 602-16 ARTICLE 3.5D. GROUT LIFT HEIGHT MAY BE INCREASED TO 12'-8" IF THE FOLLOWING CONDITIONS ARE MET:
   A. MASONRY HAS CURED FOR AT LEAST 4 HOURS
   B. GROUT SLUMP IS MAINTAINED BETWEEEN 10" - 11"
   C. NO BOND BEAMS OCCUR BETWEEN TOP AND BOTTOM OF POUR HEIGHT
   D. CLEANOUTS ARE PROVIDED AT 32" MAX OC FOR CLEANING AND INSPECTION PRIOR TO GROUTING PER TMS 602-16 ARTICLE 3.2F.

13. CONSOLIDATE GROUT AT TIME OF PLACEMENT USING MECHANICAL VIBRATION OR USE A SELF CONSOLIDATING GROUT

14. EMBEDDED PIPES AND CONDUITS
   A. CONDUITS, PIPES AND SLEEVES MAY BE EMBEDDED IN MASONRY ONLY IF COMPLYING WITH THE FOLLOWING REQUIREMENTS:
      a. THEY SHALL BE SPACED NO CLOSER THAN 3 DIAMETERS ON CENTER
      b. THE MAXIMUM AREA OF VERTICAL PIPES, CONDUITS, OR SLEEVES PLACED IN MASONRY COLUMNS OR PILASTERS SHALL NOT EXCEED 2 PERCENT OF THE CROSS SECTION
      c. THE MAXIMUM NUMBER OF PIPES ALLOWED IN A CELL FOR WALLS IS THE FOLLOWING:

WALL THICKNESS	REINFORCED CELL	UN-REINFORECED CELL
8"	(2) ½" Ø (1) ¾" Ø	(3) ½" Ø (2) ¾" Ø (1) 1" Ø
12"	(4) ½" Ø (3) ¾" Ø (2) 1" Ø (1) 1¼" Ø	(5) ½" Ø (4) ¾" Ø (3) 1" Ø (2) 1¼" Ø

      d. WRAP PIPES AND FITTINGS WITH ¼" FOAM TAPE MIN.
   B. PIPES SHALL NOT BE EMBEDDED IN MASONRY WHEN:
      a. CONTAINING LIQUID GAS OR VAPORS AT TEMPERATURES HIGHER THAN 150° F
      b. UNDER PRESSURE IN EXCESS OF 55 PSI
      c. CONTAINING WATER OR OTHER LIQUIDS SUBJECT TO FREEZING
   C. ALUMINUM PIPES SHALL NOT BE EMBEDDED IN CMU

15. ALL INTERIOR EXPOSED CORNERS TO BE BULL NOSE BLOCK PROFILE, NOT REQUIRED AT EXTERIOR OR SPLICE FACE CONDTIONS, FIELD GRIND CORNERS TO ACCEPTED.

REINFORCING STEEL

1. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 19 OF THE CODE AND WITH THE PROVISIONS OF ACI 318-19, ASTM A706, GRADE 60 UNO. ASTM A615 GR 60 STEEL MAY BE SUBSTITUTED FOR ASTM A706 GR60 STEEL PER ACI 318-19 SECTION 20.2.2.5 PROVIDED THE FOLLOWING CONDITIONS ARE MET:
   A. THE ACTUAL YIELD STRENGTH BASED ON MILL TESTS DOES NOT EXCEED THE SPECIFIED YIELD STRENGTH BY MORE THAN 18,000 PSI.
   B. THE RATIO OF THE ACTUAL ULTIMATE TENSILE STRESS TO THE ACTUAL YIELD STRENGTH IS NOT LESS THAN 1.25.
   C. WHERE REINFORCEMENT COMPLYING WITH ASTM A615 IS TO BE WELDED, CHEMICAL TESTS SHALL BE PERFORMED TO DETERMINE WELDABILITY IN ACCORDANCE WITH SECTION 26.6.4 OF ACI 318-19.

2. BARS SHALL BE CLEAN OF RUST, GREASE, OR OTHER MATERIALS LIKELY TO IMPAIR BOND. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.

3. WELDED WIRE REINFORCEMENT (WWR), PLAIN OR DEFORMED, SHALL CONFORM TO ASTM A185. WELDED DEFORMED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A1064. ALL WWR FOR STAIR PANS AND ALL WWR FOR CONCRETE FILL ON METAL DECK TO BE PLAIN WWR. PROVIDE LAPS PER ACI 318-19 SECTION 25.5.3 OR 25.5.4 MINIMUM. WWR SHALL BE SUPPORTED ON APPROVED CHAIRS.

4. REINFORCING BAR LAP SPLICES SHALL BE MADE AS INDICATED ON THE DRAWINGS. LAP ALL HORIZONTAL BARS AT CORNERS AND INTERSECTIONS. STAGGER ALL SPLICES UNLESS NOTED OTHERWISE ON PLANS.
   A. MINIMUM LAP SPLICE LENGTH FOR REINFORCING STEEL BARS IN CONCRETE SHALL BE PER ACI 318-19 SECTION 25.5.2 AND THE REINFORCING SCHEDULE ON THE DRAWINGS.
   B. MINIMUM LAP SPLICE LENGTH FOR REINFORCING STEEL BARS IN MASONRY SHALL BE PER TMS 042-16 SECTION 6.1.6.1.1 AND THE REINFORCING SCHEDULE ON THE DRAWINGS.

5. ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE. ALL REINFORCING CONFORMING TO DIFFERING ASTM SPECIFICATIONS AND/OR OF DIFFERING GRADES SHALL BE CLEARLY MARKED TO DIFFERENTIATE THEM FROM OTHER REINFORCING STEEL IF CONCURRENTLY PRESENT ON SITE.

6. WHERE WELDING OF REINFORCING IS APPROVED BY THE STRUCTURAL ENGINEER, IT SHALL BE DONE BY AWS CERTIFIED WELDERS USING E80XX OR APPROVED ELECTRODES. WELDING PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF STRUCTURAL WELDING CODE- REINFORCING STEEL", AWS-D1.4-15. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706.

7. REINFORCING STEEL SHALL BE ACCURATELY PLACED, ADEQUATELY SUPPORTED AND SHALL BE SECURED AGAINST DISPLACEMENT, AND TIED BEFORE THE CONCRETE IS PLACED DURING CONSTRUCTION WITHIN PERMITTED TOLERANCES. ADEQUATE SUPPORTS ARE ALSO NECESSARY TO KEEP THE REINFORCING STEEL AT THE PROPER DISTANCE FROM THE FORMS. USE WIRE BAR SUPPORTS, PRECAST CONCRETE SUPPORTS, SPACERS, BOLSTERS, REINFORCEMENT OR OTHER MEANS OF SUPPORT PER THE "CRSI MANUAL OF STANDARD PRACTICE", LATEST EDITION.

8. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE "CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.

9. COMPLETE AND DETAILED REINFORCING PLACEMENT DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE ARCHITECT FOR APPROVAL BY THE SEOR PRIOR TO FABRICATION IN ACCORDANCE WITH THE SPECIFICATIONS AND APPLICABLE CODES. THESE DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE PRIOR TO PLACING OF CONCRETE. THE REINFORCING PLACEMENT DRAWINGS SHALL INCLUDE ALL PRIMARY REINFOREMENT, LAP SPLICES, TIES, DOWELS, HEADED U-DOWELS, EMBED PLATES, ANCHOR BOLTS, ETC. AREAS OF CONGESTION SHALL BE DETAILED SUFFICIENTLY TO DEMONSTRATE THAT PLACEMENT OF REBAR MEETS SPACING REQUIREMENTS OF ACI 318-19.

10. MILL TEST REPORTS FOR GRADE 60 BARS SHALL BE SUBMITTED TO THE INSPECTOR OF RECORD PRIOR TO PLACEMENT OF CONCRETE PER ACI 318-19 SECTION 26.13.2.3 OF THE CODE.

11. WHEN REQ'D, INSPECTION OF CONCRETE SHALL INCLUDE INSPECTION DURING INSTALLATION OF REINFORCING STEEL. INSPECTION SHALL BE SCHEDULED SO THAT PLACEMENT OF REINFORCING STEEL, CONDUIT, SLEEVES, AND EMBEDDED ITEMS MAY BE CORRECTED PRIOR TO PLACEMENT OF OVERLYING GRIDS OR REINFORCING STEEL.

12. CONCRETE PROTECTION FOR REINFORCEMENT

THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT IN CAST-IN-PLACE CONCRETE (NON-PRESTRESSED):	MINIMUM COVER, IN.
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3
B. CONCRETE EXPOSED TO EARTH OR WEATHER: NO.6 THROUGH NO. 18 BAR NO.5 BAR, W31 OR D31 WIRE & SMALLER	 2 1½"
C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: SLABS, WALLS, JOISTS: NO.14 AND NO.18 BARS NO.11 BAR & SMALLER BEAMS, COLUMNS: PRIMARY REINFORCEMENT TIES, STIRRUPS, SPIRALS	 1½" ¾" 1½"

13. MECHANICAL BAR SPLICE CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-19 SECTION 25.5.7 USE OF MECHANICAL CONNECTIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. SPLICES MUST BE TESTED AS INDICATED IN THE CONCRETE REINFORCEMENT SPECIFICATION. ACCEPTABLE PRODUCTS INCLUDE:

    LENTON STANDARD COUPLERS (IAPMO-ES 0129)
    LENTON FORM SAVERS, TYPE SA (IAPMO-ES 0129)
    LENTON WELDABLE HALF COUPLERS (IAPMO-ES 0129)
    LENTON LOCK COUPLERS PER (IAPMO-ES 0129)

    NOTE THAT REBAR ATTACHED TO PLATE USING LENTON WELDABLE HALF COUPLERS SHALL BE ASTM A706 PER IAPMO-ES 0129.

    ALL MECHANICAL BAR SPLICE CONNECTIONS IN SPECIAL STRUCTURAL WALLS, SPECIAL MOMENT FRAMES AND CONCRETE DIAPHRAGMS SHALL BE TYPE 2 CONFORMING TO THE REQUIREMENTS OF ACI 318-19 SECTION 18.2.7 & 18.12.7.4

EXISTING CONDITIONS

1. ALL INFORMATION SHOWN ON THE PLANS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE FROM PLANS SUPPLIED BY THE OWNER, BUT WITHOUT GUARANTEE OF ACCURACY.

2. WHERE ACTUAL CONDITIONS ARE NOT IN ACCORDANCE WITH THE INFORMATION PRESENTED, THE ARCHITECT AND/OR STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY. NO MODIFICATIONS OF THE PLANS FOR NEW CONSTRUCTION SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT.

EXISTING UNDERGROUND UTILITIES

1. THE ARCHITECT AND ENGINEERS ARE NOT RESPONSIBLE FOR THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES WHETHER OR NOT SHOWN ON THE DRAWINGS. DRAWINGS, IF ANY, IS APPROXIMATE. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THE SITE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND/OR STRUCTURAL ENGINEER SHOULD ANY SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES WHICH MAY RESULT FROM HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ALL EXISTING UNDERGROUND UTILITIES.

3. AN UNDERGROUND SERVICE ALERT INQUIRY IDENTIFICATION NUMBER MUST BE OBTAINED AT LEAST TWO WORKING DAYS BEFORE STARTING WORK WITH THIS PERMIT.
   A. FOR PROJECTS IN SOUTHERN CALIFORNIA TELEPHONE NO. 1-800-422-4133.
   B. FOR PROJECTS IN NORTHERN CALIFORNIA TELEPHONE NO. 1-800-227-2600.

CONCRETE

1. ALL CONCRETE CONSTRUCTION SHALL CONFORM WITH CHAPTER 19 OF THE CODE AND WITH THE PROVISIONS OF ACI 318-19.

2. CONCRETE MATERIALS SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

MATERIAL	ASTM STANDARD
PORTLAND CEMENT (TYPE II)[A]	C150
CONCRETE AGGREGATES (HARDROCK)	C33
CONCRETE AGGREGATES (LIGHTWEIGHT)[C]	C330
WATER[B]	C1602
COAL FLY ASH OR POZOLLAN (CLASS F)	C618
NATURAL OR MANUFACTURED SAND	C33
SLAG	C989

   A. FOR SOILS WITH HIGH CONCENTRATIONS OF SULFATES (EXPOSURES S2 OR S3 PER ACI 318-19 TABLE 19.3.2.1) PORTLAND CEMENT SHALL BE TYPE V. VERIFY WITH PROJECT GEOTECHNICAL REPORT.
   B. WATER SHOULD ONLY BE ADDED AT THE BATCH PLANT. IN NO CASE SHALL THE DESIGN WATER/ CEMENT RATIO BE EXCEEDED.
   C. PUMICE AGGREGATE SHALL NOT BE USED.

3. CONCRETE MIXES SHALL BE PROPORTIONED BASED ON SECTION 26.4.3 OF ACI 318-19, WHICH REFERENCES ACI 301-20 ARTICLE 4.2.3. MIX DESIGNS SHALL INCLUDE DOCUMENTATION OF MIX AVERAGE COMPRESSIVE STRENGTH THROUGH FIELD TEST DATA OR TRAIL MIXTURES IN ACCORDANCE WITH ACI 301-20 ARTICLE 4.2.3.4. SCHEDULE OF STRUCTURAL CONCRETE STRENGTHS AND LOCATIONS (UNO):

LOCATION IN STRUCTURE	MINIMUM STRENGTH (PSI)	DENSITY (PCF)	MAX SLUMP (IN±1)	MAX WATER/CEMENT RATIO	SLAG/ FLY ASH[A] (MAX)
CONCRETE FOUNDATIONS	3,000	150	4	0.5	0.25

   A. AS MEASURED BY CEMENTITIOUS WEIGHT

4. READY MIXED CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C94 OR C685.

5. DEPOSITING AND CONVEYING OF CONCRETE SHALL CONFORM TO SECTION 26.5 OF ACI 318-19 AND PROJECT SPECIFICATIONS.

6. ALL CONCRETE SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED SHALL BE CLEANED AND ROUGHENED TO 1/4" AMPLITUDE.

7. ALL REINFORCING BARS, ANCHOR BOLT HOLDOWNS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED AND TIED IN POSITION PRIOR TO PLACING CONCRETE. IN NO CASE SHALL ANY REINFORCING BARS, ANCHOR BOLTS, HOLDOWNS OR OTHER CONCRETE INSERTS BE "WET SET" OR "WET-STABBED" INTO CONCRETE DURING THE POUR.

8. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. CORING IN CONCRETE IS NOT PERMITTED WITHOUT SEOR APPROVAL. NOTIFY THE SEOR IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS. SEE THE DRAWINGS FOR ADDITIONAL RESTRICTIONS ON THE PLACEMENT OF OPENINGS IN SLABS AND WALLS.

9. PIPES EMBEDDED IN CONCRETE:
   A. CONCRETE
      a. PIPES LARGER THAN 1-1/2" DIAMETER SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY SEOR.
      b. NO CONDUITS SHALL BE PLACED IN CONCRETE FILL OVER METAL DECK.
      c. PIPES SHALL NOT DISPLACE OR INTERRUPT REINFORCING BARS.
      d. DO NOT STACK CONDUITS, SPACE EMBEDDED PIPES AND CONDUITS AT A MINIMUM OF 3 DIAMETERS CLEAR FROM OTHER EMBEDDED PIPES/CONDUITS AND REBAR.

DESIGN INFORMATION

1. WIND DESIGN DATA (2022 CBC SECTION 1603.1.4) :

WIND DESIGN DATA		
PARAMETER	VALUE	REFERENCE
ULTIMATE DESIGN WIND SPEED (3-SEC GUST)	V_{ULT} = 102 MPH	2022 CBC FIG. 1609.3
NOMINAL DESIGN WIND SPEED (3-SEC GUST)	V_{ASD} = 82 MPH	2022 CBC 1609.3.1
EXPOSURE CATEGORY	C	2022 CBC 1609.4.3
INTERNAL PRESSURE COEFFICIENT:	GCpi = ± 0.18	ASCE 7-16 TABLE 26.13-1

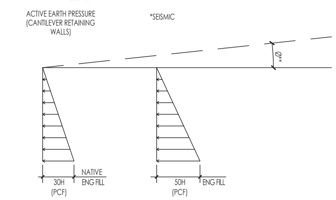
2. EARTHQUAKE DESIGN DATA (2022 CBC SECTION 1603.1.5):

SITE AND OCCUPANCY PARAMETERS		
PARAMETER	VALUE	REFERENCE
RISK CATEGORY	IV	2022 CBC TABLE 1604.5
SEISMIC IMPORTANCE FACTOR	I = 1.5	ASCE 7-16 TABLE 1.5-2
MAPPED SPECTRAL RESPONSE ACCELERATIONS:	S_S = 1.064 g S_1 = 0.392 g	2022 CBC 1613.2.1
SITE CLASS	D (DEFAULT)	2022 CBC 1613.2.2
SPECTRAL RESPONSE COEFFICIENTS:	S_{DS} = 0.851 g S_{D1} = 0.499 g	2022 CBC 1613.2.4

3. GEOTECHNICAL INFORMATION (2022 CBC SECTION 1603.1.6):
   REFER TO FOUNDATION GENERAL NOTES

FOUNDATION

1. LATERAL EARTH PRESSURES:



* SEISMIC SOIL PRESSURE APPLIES TO WALLS GREATER THAN 6 FEET IN HEIGHT MEASURED FROM TOP OF FOUNDATION
** FOR SLOPING BACKFILL ADD 1 PCF FOR EVERY 2 DEG. (ACTIVE CASE) AND 1.5 PCF FOR EVERY 2 DEG (AT REST)50H

2. SPREAD OR CONTINUOUS FOOTINGS:

ELEMENT	ALLOWABLE BEARING CAPACITY (PSF)[A]	ALLOWABLE LATERAL RESISTANCE[B]	
		PASSIVE RESISTANCE (PSF/FT BELOW GRADE)	FRICTION RESISTANCE (COEFFICIENT OF FRICTION)
BUILDING FOUNDATION	1,500	100	0.25

NOTES:
   A. THE ALLOWABLE CAPACITY MAY BE INCREASED BY ONE-THIRD WHEN CONSIDERING LOADS OF SHORT DURATION SUCH AS WIND OR SEISMIC FORCES.
   B. THE ALLOWABLE LATERAL RESISTANCE CAN BE TAKEN AS THE SUM OF THE FRICTIONAL RESISTANCE AND PASSIVE RESISTANCE WITH THE LESSER REDUCED BY 33 PERCENT.
   C. THE UPPER 6 INCHES OF SOIL NOT PROTECTED BY PAVEMENT SHALL BE NEGLECTED WHEN CALCULATING PASSIVE RESISTANCE.
   D. COMPACTED FILL SHOULD BE PREPARED PER SECTION 6.0 GEOTECHNICAL EVALUATION REPORT

3. WHERE NOT SHOWN ON THE DRAWINGS, CONTRACTOR TO PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED AND SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS, AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.

4. CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER AND/OR SEEPAGE.

5. ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE OR GROUT HAS ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL BRACE OR PROTECT ALL BUILDING AND PIT WALLS BELOW GRADE FROM LATERAL LOADS UNTIL ATTACHING FLOORS ARE COMPLETELY IN PLACE AND HAVE ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS AND INSTALLATION OF SUCH BRACING.

6. EXCAVATIONS SHALL BE CUT SQUARE AND SMOOTH, WITH LEVEL BOTTOMS.

7. FOOTING BACKFILL AND UTILITY TRENCH BACKFILL WITHIN BUILDING AREA SHALL BE MECHANICALLY COMPACTED IN LAYERS IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION REPORT AND APPROVED BY THE GEOTECHNICAL ENGINEER. FLOODING WILL NOT BE PERMITTED. ALL FILLS USED TO SUPPORT FOUNDATIONS SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER REPRESENTATIVE PER SECTION 1705.6 OF THE CODE.

8. ALL ABANDONED FOOTINGS, UTILITIES, ETC. SHALL BE REMOVED. NEW FOOTINGS MUST EXTEND INTO UNDISTURBED SOILS.

9. PIPES WITHIN THE ZONE OF INFLUENCE OF BUILDING OR SITE ELEMENT FOUNDATIONS SHALL BE INCREASED IN LEAN CONCRETE AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER OF RECORD.

GENERAL

ALL WORK SHALL BE PREFORMED IN CONFORMANCE WITH THESE PLANS, SPECIAL PROVISIONS PREPARED FOR THIS PROJECT, AND THE 2020 CITY OF SAN LUIS OBISPO STANDARD SPECIFICATIONS AND ENGINEERING STANDARDS, IN CONJUNCTION WITH THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND STANDARD PLANS, 2015 EDITION (UNREVISED), AND LATEST EDITION OF CALIFORNIA MUTCD.

   A. 2022 CALIFORNIA BUILDING CODE, PART 2, VOLUME 2 OF 2, AND TITLE 24 C.C.R. 2022 EDITION AND LATEST REVISIONS (INCLUDING SUPPLEMENTS AND ERRATA) HEREIN REFERRED TO AS "THE CODE".
   B. ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING THE STATE OF CALIFORNIA DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (CAL/OSHA).

2. ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND CITY PRIOR TO START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE CITY OR ARCHITECT.

3. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.

4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES. IN NO INSTANCE SHALL DIMENSIONS BE SCALED FROM THE DRAWINGS.

5. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
   A. PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC., EXCEPT AS SHOWN OR NOTED.
   B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
   C. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
   D. SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES, ANCHOR BOLTS FOR MOTOR MOUNTS.

7. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT ETC. THE CONTRACTOR IS RESPONSIBLE FOR PROVISION OF TEMPORARY SHORING AND OTHER CONSTRUCTION AIDS, INCLUDING ALL ENGINEERING OF SUCH SYSTEMS, FOR TEMPORARY SUPPORT OF NEW AND/OR EXISTING STRUCTURAL ELEMENTS AS REQUIRED FOR ERECTION AND OTHER CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION (UNO). OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS OR CONCERN CONSTRUCTION MEANS AND METHODS OR CONSTRUCTION SAFETY.

8. BACKFILL SHALL NOT BE PLACED BEHIND EXTERIOR AND INTERIOR RETAINING WALLS UNTIL THE CONCRETE / CMU HAS ACHIEVED FULL DESIGN STRENGTH. FOR BRACED WALLS SUPPORTED BY STRUCTURAL DIAPHRAGMS. BACKFILL SHALL NOT BE PLACED BEHIND THE WALL UNTIL THE DIAPHRAGM HAS BEEN INSTALLED , AND FOR CONCRETE DIAPHRAGMS, HAS ACHIEVED FULL DESIGN STRENGTH.

9. THE CONTRACT STRUCTURAL DRAWINGS SHOW THE BUILDING IN ITS FINAL INTENDED POSITION. CONTRACTOR SHALL MAKE PROVISIONS IN THE LAYOUT OF THE BUILDING TO TAKE INTO ACCOUNTS SHRINKAGE, CREEP, SHORTENING, ETC..

10. OPENINGS, POCKETS, ETC., LARGER THAN 6" SHALL NOT BE PLACED IN CONCRETE SLABS, DECKS, WALLS, UNLESS SPECIALLY DETAILED ON THE STRUCTURAL DRAWINGS. NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC., LARGER THAN 6" NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT WHICH ARE LOCATED IN STRUCTURAL MEMBERS.

11. ASTM SPECIFICATIONS ON THE DRAWINGS SHALL BE THE VERSION REFERENCED IN CHAPTER 35 OF THE CODE OR AS REFERENCED IN THE APPLICABLE DESIGN STANDARD.

12. CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, THE STRUCTURAL ENGINEER AND CITY ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

13. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR PERMITTEE TO CONTACT "UNDERGROUND SERVICE ALERT OF NORTHERN/CENTRAL CALIFORNIA" BY PHONE AT 8-1-1 FORTY-EIGHT (48) HOURS PRIOR TO START OF CONSTRUCTION FOR LOCATION OF POWER, TELEPHONE, OIL, AND NATURAL GAS UNDERGROUND FACILITIES. CONTRACTOR OR PERMITEE SHALL ALSO CONTACT THE APPROPRIATE AGENCY FOR THE LOCATION OF CABLE T.V., WATER, SEWER, DRAINAGE OR UNDERGROUND FACILITIES.

14. THE CONTRACTOR SHALL ALLOW FOR SUFFICIENT TIME FOR THE ENGINEER OF RECORD TO THOROUGHLY REVIEW THE SUBMITTAL PACKAGES, IN ACCORDANCE WITH THE CITY'S STANDARD GUIDELINES.

DIMENSIONS

1. DIMENSIONS SHALL BE DEFINED TO INCLUDE BOTH HORIZONTAL DIMENSIONS AND VERTICAL DIMENSIONS (ELEVATIONS).

2. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE. DRAWINGS SHALL NOT BE SCALED.

3. SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS FOR FINISH FLOOR ELEVATIONS.

4. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES OR INCONSISTENCIES.

CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE: GENERAL NOTES

100% CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER JESSICA M. MEADOWS No. 6438 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	
DRAWN BY:	J. LONG
CHECKED BY:	J. MEADOWS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	AUGUST 23, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	S-102

N:\2400\2504-05-PS23-SLO-PD-N-Building-Fencing\Structural\ConDocs\Sheet-Files\2504-05-PS23 - S102.dwg, S102, Aug 23, 2024 10:11am, jdlong

TESTING CRITERIA FOR POST-INSTALLED ANCHORS IN CONCRETE / MASONRY

1. CONDUCT TESTING OF POST- INSTALLED ANCHORS PER SECTION 1901.3.4 OF THE CODE.

2. WHERE THE MANUFACTURER'S INSTALLATION INSTRUCTIONS OR APPLICABLE ICC-ES EVALUATION SERVICES REPORT CALL FOR THE APPLICATION OF AN INSTALLATION TORQUE, THE SPECIFIED TORQUE SHALL BE APPLIED WITH A CALIBRATED TORQUE WRENCH. THE SPECIFIED INSTALLATION TORQUE SHALL NOT BE EXCEEDED.

3. THE SPECIAL INSPECTOR SHALL BE ON THE JOBSITE DURING ANCHOR INSTALLATIONS AS REQUIRED PER CHAPTER 17 OF THE CODE, UNLESS OTHERWISE NOTED IN ICC-ES ESR, TO VERIFY ANCHOR, ANCHOR DIMENSIONS, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, HOLE DIMENSIONS, ANCHOR SPACING, EDGE DISTANCES, SLAB THICKNESS, ANCHOR EMBEDMENT, AND INSTALLATION TORQUE.

4. TEST LOAD: REQUIRED TEST LOADS SHALL BE DETERMINED BY ONE OF THE FOLLOWING METHODS:

   A. TWICE THE MAXIMUM ALLOWABLE TENSION LOAD OR ONE AND A QUARTER (1 1/4) TIMES THE MAXIMUM DESIGN STRENGTH PROVIDED BY THE ICC REPORT OR DETERMINED PER ACI 318. THE TENSION TEST LOAD NEED NOT TO EXCEED 80 PERCENT OF THE NOMINAL YIELD STRENGTH OF THE ANCHOR (0.8 As Fy). SEE STRUCTURAL DETAILS FOR DESIGN-BASED TENSION TEST LOADS FOR ADHESIVE ANCHORS.

   B. THE MANUFACTURER'S RECOMMENDED INSTALLATION TORQUE AS APPROVED BY THE ICC REPORT.

5. TENSION OR TORQUE TESTING OF POST-INSTALLED ANCHORS SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE IOR AND ENFORCEMENT AGENCY.

6. THE SPECIAL INSPECTOR SHALL SELECT ANCHORS FOR TESTING AT RANDOM.

7. TEST FREQUENCY:

APPLICATION	QUANTITY
STRUCTURAL	100% OF BOLTS
NON-STRUCTURAL (SUCH AS EQUIPMENT ANCHORAGE)	50%; ALTERNATE BOLTS IN A GROUP (TEST AT LEAST HALF OF THE ANCHORS IN GROUP)
SILL PLATE BOLTING	10% OF BOLTS

   EXCEPTIONS:

   A. UNDERCUT ANCHORS THAT ALLOW VISUAL CONFIRMATION OF FULL SET SHALL NOT REQUIRE TESTING.

   B. WHERE THE FACTORED DESIGN TENSION ON ANCHORS IS LESS THAN 100 LBS AND THOSE ANCHORS ARE CLEARLY NOTED ON THE APPROVED CONSTRUCTION DOCUMENTS.

   C. WHERE ADHESIVE ANCHOR SYSTEMS ARE USED TO INSTALL REINFORCING DOWEL BARS IN HARDENED CONCRETE, ONLY 25 PERCENT OF THE DOWELS SHALL BE TESTED IF ALL OF THE FOLLOWING CONDITIONS ARE MET:

   - THE DOWELS ARE USED EXCLUSIVELY TO TRANSMIT SHEAR FORCES ACROSS JOINTS BETWEEN EXISTING AND NEW CONCRETE.
   - THE NUMBER OF DOWELS IN ANY ONE MEMBER EQUALS OR EXCEEDS 12.
   - THE DOWELS ARE UNIFORMLY DISTRIBUTED ACROSS SEISMIC FORCE RESISTING MEMBERS (SUCH AS SHEAR WALLS, COLLECTORS, AND DIAPHRAGMS).

   D. TESTING OF SHEAR DOWELS ACROSS COLD JOINTS IN SLAB ON GRADE, WHERE THE SLAB IS NOT PART OF THE LATERAL FORCE-RESISTING SYSTEM SHALL NOT BE REQUIRED.

   E. TESTING IS NOT REQUIRED FOR POWER ACTUATED FASTENERS USED TO ATTACH TRACKS OF INTERIOR NON-SHEAR WALL PARTITIONS FOR SHEAR ONLY, WHERE THERE ARE AT LEAST THREE FASTENERS PER SEGMENT OF TRACK.

8. TEST METHODS: TEST LOADS MAY BE APPLIED BY ANY METHOD THAT WILL EFFECTIVELY TRANSMIT A MEASURABLE TENSION LOAD TO THE ANCHOR. ACCEPTABLE METHODS INCLUDE:

   A. USE OF HYDRAULIC JACK, WHEREBY EITHER UNCONFINED OR CONFINED TESTING SHALL BE ACCEPTABLE;

   B. USE OF CALIBRATED SPRING LOADED DEVICES; OR

   C. USE OF A CALIBRATED TORQUE WRENCH FOR TORQUE-CONTROLLED EXPANSION ANCHORS.

9. TEST ACCEPTANCE CRITERIA: ACCEPTANCE CRITERIA FOR POST-INSTALLED ANCHORS SHALL BE BASED ON THE ICC REPORT OR MANUFACTURER'S WRITTEN INSTRUCTION AS ACCEPTABLE TO OSHPD. FIELD TESTS SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:

   A. HYDRAULIC RAM METHOD: ANCHORS TESTED WITH A HYDRAULIC JACK OR SPRING LOADED DEVICES SHALL MAINTAIN THE TEST LOAD FOR A MINIMUM OF 15 SECONDS AND SHALL EXHIBIT NO DISCERNABLE MOVEMENT DURING THE TENSION TEST, E.G. AS EVIDENCED BY LOOSENING OF THE WASHER UNDER THE NUT. SCREW ANCHORS MAY BE LOOSENED A MAXIMUM ONE FULL TURN TO FACILITATE THE POSITIONING OF A TENSION TEST COLLAR.

   B. TORQUE WRENCH METHOD: ANCHORS TESTED WITH A CALIBRATED TORQUE WRENCH MUST ATTAIN THE SPECIFIED TORQUE WITHIN HALF (1/2) TURN OF THE NUT.

   EXCEPTIONS:

   - WEDGE OR SLEEVE TYPE: ONE-QUARTER (1/4) TURN OF THE NUT FOR A 3/8 INCH ANCHOR ONLY.
   - THREADED TYPE: ONE-QUARTER (1/4) TURN OF THE SCREW AFTER INITIAL SEATING OF THE SCREW HEAD.

10. IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME TYPE, INSTALLED BY THE SAME TRADE, AND NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME INITIAL TEST FREQUENCY.

11. REQUIRED TORQUE TEST LOADS SHALL BE EQUAL TO THE MANUFACTURER'S RECOMMENDED INSTALLATION TORQUE PROVIDED IN THE ICC-ESR FOR THE SPECIFIC ANCHOR. TEST TORQUE VALUES ARE SUMMARIZED IN THE TABLE BELOW:

SIMPSON		
LOCATION IN STRUCTURE	INSTALLATION TORQUE (FT-LBS) CONCRETE SUBSTRATE	
INCHES	SIMPSON STRONG-BOLT2 (ICC ES ESR 3037)	SIMPSON TITEN HD (ICC ES ESR-2713)
1/4	4	24
3/8	30	50
1/2	60	65
5/8	90	100
3/4	150	150

POST-INSTALLED ANCHORS IN CONCRETE / MASONRY

1. POST-INSTALLED ANCHOR CAPACITIES IN CONCRETE SHALL BE DETERMINED PER SECTION 1901.3 OF THE CODE AND ACI 318-19 CHAPTER 17 USING STRENGTH DESIGN.

2. POST INSTALLED ANCHORS IN CONCRETE AND MASONRY SHALL BE PREQUALIFIED FOR SEISMIC APPLICATIONS IN ACCORDANCE WITH THE FOLLOWING INSTALLATION OF POST-INSTALLED ANCHORS SHALL BE IN ACCORDANCE WITH THE LISTED APPLICABLE ICC EVALUATION REPORT.

SUBSTRATE MATERIAL	ANCHOR TYPE	ANCHOR PRODUCT	ICC EVALUATION REPORT	ACCEPTANCE CRITERIA
CONCRETE	EXPANSION ANCHORS	SIMPSON STRONGBOLT 2	ICC ESR-3037	AC193
CMU	EXPANSION ANCHORS	SIMPSON STRONGBOLT 2	IAPMO ES ER 240	AC01 OR AC106
CONCRETE	SCREW ANCHOR	SIMPSON TITEN HD	ICC ESR-2713	AC193
CMU	SCREW ANCHOR	SIMPSON TITEN HD	ICC ESR-1056	AC106
CONCRETE	ADHESIVE ANCHORS	SIMPSON SET-3G	ICC ESR-4057	AC193
CMU	ADHESIVE ANCHOR	SIMPSON SET-3G	ICC ESR-4844	AC58
CONCRETE	POWER ACTUATED FASTENER**	SIMPSON PDPAW	ICC ESR-2138	AC70

**LIMITATIONS OF USE OF POWER ACTUATED FASTENERS:
PER SECTION 13.4.5 OF ASCE 7-16 POWER ACTUATED FASTENERS IN CONCRETE OR STEEL SHALL NOT BE USED FOR SUSTAINED TENSION LOADS OR FOR BRACE APPLICATIONS IN SEISMIC UNLESS APPROVED FOR SEISMIC LOADING. POWER ACTUATED FASTENERS IN MASONRY SHALL NOT BE PERMITTED UNLESS APPROVED FOR SEISMIC LOADING.

EXCEPTION: POWER ACTUATED FASTENERS IN CONCRETE USED FOR SUPPORT OF ACOUSTICAL TILE OR LAY-IN PANEL SUSPENDED CEILING APPLICATIONS AND DISTRIBUTED SYSTEMS WHERE THE SERVICE LOAD ON ANY INDIVIDUAL FASTENER DOES NOT EXCEED 90 LB.

3. EXPANSION ANCHOR EMBEDMENTS IN THE DRAWINGS ARE MINIMUM "EFFECTIVE EMBEDMENTS" (hef) AS SHOWN IN THE ICC REPORT CORRESPONDING TO THE ANCHOR.

4. LOCATE ALL EXISTING REINFORCEMENT BY NON-DESTRUCTIVE MEANS (X-RAY, PACOMETER, GPR, ETC.) PRIOR TO DRILLING OR INSTALLING POST-INSTALLED ANCHORS. COORDINATE POST-INSTALLED ANCHOR LOCATIONS WITH LOCATIONS OF EXISTING REINFORCEMENT. DO NOT CUT OR DAMAGE EXISTING REINFORCEMENT.

5. ALL POST-INSTALLED ANCHORS USED IN DRY INTERIOR CONDITIONS SHALL BE CARBON STEEL, U.N.O

6. ALL POST-INSTALLED ANCHORS USED AT EXTERIOR CONDITIONS, EXPOSED TO THE ELEMENTS, OR USED IN A DAMP ENVIRONMENT (I.E. KITCHENS) SHALL BE STAINLESS STEEL, U.N.O.

7. WHERE POST-INSTALLED MECHANICAL ANCHORS ARE USED FOR NON-VIBRATION ISOLATED MECHANICAL EQUIPMENT RATED OVER 10 HP, THEY SHALL BE QUALIFIED IN ACCORDANCE WITH ACI 355.2.

8. IF THE CONCRETE CRACKS DURING THE INSTALLATION OF AN ANCHOR, THE ANCHOR SHALL BE REMOVED OR ABANDONED. FOR ABANDONED ANCHORS AND ABANDONED ANCHOR HOLES:

   A. FILL ALL EMPTY ABANDONED ANCHOR HOLES WITH A DRY-PACK MORTAR.

   B. FOR ABANDONED EXPANSION ANCHORS WHICH CANNOT BE REMOVED WITHOUT DAMAGING THE SUBSTRATE, CUT/BURN OFF THE END OF THE BOLT FLUSH WITH THE FACE OF CONCRETE/MASONRY AND THEN DRIVE ABANDONED ANCHOR TO BOTTOM OF HOLE. FILL REMAINDER OF HOLE WITH A DRY-PACK MORTAR.

   C. FOR ABANDONED ADHESIVE OR UNDERCUT ANCHORS WHICH CANNOT BE REMOVED WITHOUT DAMAGING THE SUBSTRATE, BURN OFF THE END OF THE BOLT/ROD 1" BELOW THE SURFACE OF CONCRETE/MASONRY AND FILL REMAINDER OF HOLE WITH A DRY-PACK MORTAR.

   D. ABANDONED ANCHOR HOLES (WHETHER FILLED WITH DRY-PACK OR CONTAINING ABANDONED ANCHORS) MAY NOT BE LOCATED ANY CLOSER THAN 3x DIAMETER CENTER-TO-CENTER TO ANY ANCHOR IN SERVICE. ANCHORS NOT MEETING THIS MINIMUM SPACING MAY HAVE REDUCED CAPACITY AND SHALL BE REVIEWED WITH THE SEOR.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED BY AN APPROVED AND LICENSED FABRICATOR IN ACCORDANCE WITH AISC 360-16 AND CHAPTER 22 OF THE CODE.

2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE ASTM DESIGNATION AS INDICATED BELOW (UNO):

STRUCTURAL STEEL MATERIALS	
SHAPE	ASTM/GRADE
W SHAPES, WT SHAPES	A992
PLATES (INCLUDING BASE PLATES)	A572
ANGLES, CHANNELS	A36
HSS	A500 GRB
HIGH STRENGTH BOLTES (AS NOTED ON DRAWINGS)	A325/F1852, A490SC/F2280SC A325SC/F1852SC
ANCHOR RODS (UNLESS NOTED ON DRAWINGS)	F1554 GR36
COMMON/MACHINE BOLTS	A307 GR A

3. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STEEL FOR REVIEW AND APPROVAL BY THE AOR AND SEOR PRIOR TO FABRICATION.

4. BOLT HOLES USED IN STEEL SHALL BE 1/16" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, EXCEPT AS NOTED.

5. ALL STRUCTURAL STEEL SURFACES THAT ARE ENCASED IN CONCRETE, MASONRY, SPRAY ON FIREPROOFING, OR ARE ENCASED BY BUILDING FINISH, SHALL BE LEFT UNPAINTED, EXCEPT AS REQUIRED FOR DESIGNATION OF PROTECTED ZONES.

6. PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED TO REINFORCED CONCRETE/MASONRY USING POST-INSTALLED ANCHORS, CONTRACTOR SHALL LOCATE ALL REINFORCEMENT AND CONFIRM CONSTRUCTABILTY OF ANCHOR LOCATIONS. SHOULD CONFLICTS WITH REINFORCEMENT OCCUR, CONTRACTOR SHALL COORDINATE AND SUBMIT ALTERNATE ANCHOR LOCATIONS AND REVISED STEEL FABRICATIONS TO SEOR FOR REVIEW AND APPROVAL. DO NOT CUT OR DAMAGE EXISTING REINFORCEMENT.

7. REFER TO ARCHITECTURAL DRAWINGS FOR STEEL FINISH. ALL STRUCTURAL STEEL AND MISCELLANEOUS METAL EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. PROTECT FIELD WELDS EXPOSED TO THE WEATHER VIA PRIME AND PAINT OR BRUSH / COLD GALVANIZING. REFER TO ARCH DRAWINGS FOR STEEL FINISH.

8. ALL ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) SHALL CONFORM TO REQUIREMENTS OF AISC 303-22.

9. ALL WELDING IS TO BE DONE BY CERTIFIED WELDERS USING E70XX ELECTRODES (UNO). ALL WELDS SHALL BE IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS AND THE CODE FOR WELDING IN BUILDING CONSTRUCTION (AWS D1.1-15) OF THE AMERICAN WELDING SOCIETY. SEE SPECIAL INSPECTIONS SECTION FOR WELDING INSPECTION REQUIREMENTS. ALL WELDING FOR ELEMENTS OF THE LATERAL FORCE RESISTING SYSTEM SHALL PER AWS D1.8-16.

10. THE CONTRACTOR SHALL SUBMIT ALL WELDING PROCEDURE SPECIFICATIONS FOR REVIEW AND APPROVAL BY SEOR. THE SUBMITTED WELDING PROCEDURES SHALL INCLUDE ONLY THOSE PROCEDURES RELEVANT TO THIS PROJECT. ALL WELDED JOINTS SHALL BE PREQUALIFIED PER AWS OR BE QUALIFIED BY TEST PER AWS. A PROCEDURE QUALIFICATION RECORD (PQR) SHALL BE INCLUDED WITH THE WPS IF THE WELDING PROCEDURE OR JOINT IS QUALIFIED BY TESTING. THE ELECTRODE MANUFACTURER AND PRODUCT/TRADE NAME SHALL BE IDENTIFIED IN THE WPS IN ADDITION TO THE AWS ELECTRODE CLASSIFICATION NAME. A COPY OF THE ELECTRODE MANUFACTURER'S TECHNICAL DATA SHEETS WITH THE RECOMMENDED WELDING PARAMETERS SHALL BE SUBMITTED WITH THE WPS.

11. 100 PERCENT ULTRASONIC TESTING IS REQUIRED FOR ALL COMPLETE JOINT PENETRATION GROOVE WELDS.

12. IF INTERMIXING OF WELD FILLER MATERIAL IS REQUIRED AT SPECIFIC WELDED JOINTS, AND IF ONE OF THE FILLER METALS IS FCAW-S, SUBMIT A WELDING PROCEDURE SPECIFICATION (WPS) AND QUALIFY BY TESTING.

13. DISCONTINUITIES IN WELDS CREATED BY ERRORS OR BY FABRICATION OR ERECTION OPERATIONS, SUCH AS TACK WELDS, ERECTION AIDS, AIR ARC GOUGING AND FLAME CUTTING SHALL BE REPAIRED AS REQUIRED BY SEOR.

CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE: GENERAL NOTES

100% CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER
JESSICA M. MEADOWS
No. 64[illegible]8
STRUCTURAL
STATE OF CALIFORNIA

DESIGNED BY:

DRAWN BY: J. LONG

CHECKED BY: J. MEADOWS

APPROVED BY:

SCALE: AS NOTED

DATE: AUGUST 23, 2024

CITY SPECIFICATION NO. 2000577-02

PLAN FILE NO. / LOCATION 2504-05-PS23

SHEET NO. S-103

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N:\2400\2504-05-PS23-SLO-PD-N-Building-Fencing\Structural\ConDocs\Sheet-Files\2504-05-PS23 - S104.dwg, S104, Aug 23, 2024 10:11am, jdlong

REQUIRED VERIFICATION AND INSPECTIONS

MASONRY
LEVEL 3 QUALITY ASSURANCE

MINIMUM TESTS

PRIOR TO CONSTRUCTION, VERIFY CERTIFICATES OF COMPLIANCE USED IN MASONRY CONSTRUCTION IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5

VERIFICATION OF f'_m AND f'_{AAC} IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.4 B PRIOR TO CONSTRUCTION AND FOR EVERY 5000 sq. ft. DURING CONSTRUCTION

VERIFICATION OF PROPORTIONS OF MATERIALS IN PREMIXED OR PREBLENDED MORTAR, PRESTRESSING GROUT, AND GROUT OTHER THAN SELF-CONSOLIDATION GROUT, AS DELIVERED TO THE PROJECT SITE

VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5 & 1.6.3 FOR SELF-CONSOLIDATING GROUT

MINIMUM **SPECIAL** INSPECTION

INSPECTION TASK	FREQUENCY [a]		REFERENCE FOR CRITERIA	
	CONT	PERIODIC	TMS 402	TMS 602
1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS		X		Art. 1.5
2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
a. PROPORTIONS OF SITE-PREPARED MORTAR		X		Art. 2.1, 2.6 A
b. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		X		Art. 2.4 B, 2.4 H
c. GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, ANCHOR BOLTS AND PRESTRESSING TENDONS AND ANCHORAGES		X	Art. 3.4, 3.6A	
d. PRESTRESSING TECHNIQUE		X		Art. 3.6 B
e. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X			Art. 2.1 C
f. SAMPLE PANEL CONSTRUCTION		X	Art. 1.6 D	
3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
a. GROUT SPACE	X			Art. 3.2 D, 3.2 F
b. PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGES		X	SEC. 10.8, 10.9	Art. 2.4, 3.6
c. PLACEMENT OF REINFORCEMENT, CONNECTORS AND ANCHOR BOLTS	X		SEC. 6.3.1, 6.3.6, 6.3.7	Art. 3.2 E, 3.4,
d. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS		X		Art. 2.6 B, 2.4 G.1.b
4. VERIFY DURING CONSTRUCTION:				
a. MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTALS		X		Art. 1.5
b. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION		X		Art. 3.3 B
c. SIZE AND LOCATION OF STRUCTURAL ELEMENTS		X		Art. 3.3 F
d. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION	X		SEC. 1.2.1(e), 6.1.4.3, 6.2.1	
e. WELDING OF REINFORCEMENT	X		SEC. 6.1.6.2	
f. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F)		X		Art. 1.8 C, 1.8 D
g. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	X			Art. 3.6 B
h. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X			Art. 3.5, 3.6 C
i. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X			Art. 3.3 B.9, 3.3 F.1.b
5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS	X			Art. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

(a) FREQUENCY REFERS TO THE FREQUENCY OF SPECIAL INSPECTION, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODIC DURING THE TASK LISTED, AS DEFINED IN THE TABLE
(b) REQUIRED FOR THE FIRST 5000 SQ FT OF AAC MASONRY
(c) REQUIRED AFTER THE FIRST 5000 SQ FT OF AAC MASONRY

REQUIRED VERIFICATION AND INSPECTIONS

CONCRETE CONSTRUCTION
CODE TABLE 1705.3

SPECIAL INSPECTION OR TEST	CONTINUOUS	PERIODIC	REFERENCED STANDARD	CBC REFERENCE
1. INSPECT REINFORCMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	—	X	ACI 318: CH 20, 25.2, 25.3, 26.6.1-26.6.3	—
2. REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706 b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" AND c. INSPECT ALL OTHER WELDS	— — X	X X —	AWS D1.4 ACI 318: 26.6.4	—
3. INSPECT ANCHORS CAST IN CONCRETE	—	X	ACI 318: 26.7	—
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS [b] (a) ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS (b) MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	X —	— X	ACI 318: 26.7.1 ACI 318: 26.7.1	— —
5. VERIFY USE OF REQUIRED MIX DESIGN	—	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	—	ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12	—
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	—	ACI 318: 26.5	—
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	—	X	ACI 318: 26.5.3-26.5.5	—
9. INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES; AND B. GROUTING OF BONDED PRESTRESSING TENDONS	X X	— —	ACI 318: 26.10	—
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	—	X	ACI 318: 26.9	—
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	—	X	ACI 318: 26.11.2	—
12. INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	—	X	ACI 318: 26.11.2 (b)	—
SPECIAL INSPECTIONS LISTED FOR CONCRETE ALSO APPLY TO GROUTING OPERATIONS.				

a. WHERE APPLICABLE, SEE SECTION 1705.13.

b. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

REQUIRED VERIFICATION AND INSPECTIONS

STEEL
WELDING

INSPECTION TASKS PRIOR TO WELDING *(AISC 360-16 N.5.4-1)*	QC	QA	AWS 2015 D1.1 REFERENCE
1. WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE	P	P	6.3
2. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAIALABLE	P	P	6.2
3. WPS AVAILABLE	P	P	-
4. MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O	6.2
5. WELDER IDENTIFICATION SYSTEM	O	O	6.4
6. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY) - JOINT PREPARATION - DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) - CLEANLINESS (CONDITION OF STEEL SURFACES) - TACKING (TACK WELD QUALITY AND LOCATION) - BACKING TYPE AND FIT (IF APPLICABLE)	O	O	6.5.2 5.22 5.15 5.18 5.10, 5.22.1.1
7. FIT-UP OF GROOVE WELDS OF HSS T-, Y-, AND K-JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY) - JOINT PREPARATION - DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) - CLEANLINESS (CONDITION OF STEEL SURFACES) - TACKING (TACK WELD QUALITY AND LOCATION)	P	O	- - - -
8. CONFIGURATION AND FINISH OF ACCESS HOLES	O	O	6.5.2, 5.1.7 & AISC 360-16 J1.6
9. FIT-UP OF FILLET WELDS - DIMENSIONS (ALIGNMENT, GAPS AT ROOT) - CLEANLINESS (CONDITION OF STEEL SURFACES) - TACKING (TACK WELD QUALITY AND LOCATION)	O	O	5.22.1 5.15 5.18
10. CHECK WELDING EQUIPMENT	O	—	6.2, 5.11
INSPECTION TASKS DURING WELDING *(AISC 360-16 N.5.4-2)*			
1. CONTROL AND HANDLING OF WELDING CONSUMABLES -PACKAGING -EXPOSURE CONTROL	O	O	6.2 5.3.1 5.3.2 (SMAW) 5.3.3 (SAW)
2. NO WELDING OVER CRACKED TACK WELDS	O	O	5.18
3. ENVIRONMENTAL CONDITIONS - WIND SPEED WITHIN LIMITS - PRECIPITATION AND TEMPERATURE	O	O	5.12.1 5.12.2
4. WPS FOLLOWED - SETTINGS ON WELDING EQUIPMENT - TRAVEL SPEED - SELECTED WELDING MATERIALS - SHIELDING GAS TYPE/FLOW RATE - PREHEAT APPLIED - INTERPASS TEMPERATURE MAINTAINED (MIN/MAX) - PROPER POSITIONS (F, V, H, OH)	O	O	6.3.3, 6.5.2, 5.5, 5.21 5.6, 5.7
5. WELDING TECHNIQUES - INTERPASS AND FINAL CLEANING - EACH PASS WITHIN PROFILE LIMITATIONS - EACH PASS MEETS QUALITY REQUIREMENTS	O	O	6.5.2, 6.5.3, 5.24 5.30.1
6. PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	P	P	-
INSPECTION TASKS AFTER WELDING *(AISC 360-16 N.5.4-3)*			
1. WELDS CLEANED	O	O	5.30.1
2. SIZE, LENGTH AND LOCATION OF WELDS	P	P	6.5.1
3. WELDS MEET VISUAL ACCEPTANCE CRITERIA - CRACK PROHIBITION - WELD/BASE-METAL FUSION - CRATER CROSS SECTION - WELD PROFILES - WELD SIZE - UNDERCUT - POROSITY	P	P	6.5.3 TABLE 6.1(1) TABLE 6.1(2) TABLE 6.1(3) TABLE 6.1(4), 5.24 TABLE 6.1(6) TABLE 6.1(7) TABLE 6.1(8)
4. ARC STRIKES	P	P	5.29
5. k-AREA	P	P	AISC 360-16 CA3.1c & J10.8
6. WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES [b]	P	P	-
7. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P	P	5.10, 5.31
8. REPAIR ACTIVITIES	P	P	6.5.3, 5.26
9. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P	6.5.4, 6.5.5
10. NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR	O	O	-

STEEL
BOLTING

INSPECTION TASKS PRIOR TO BOLTING *(AISC 360-16 N.5.6-1)*	QC	QA	2014 RCSC SPEC. REFERENCE
1. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P	2.1, 9.1
2. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O	FIGURE C-2.1, 9.1 (SEE ASTM STANDARDS)
3. CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)	O	O	2.3.2, 2.7.2, 9.1
4. CORRECT BOLTING DETAILS SELECTED FOR THE JOINT DETAIL.	O	O	4, 8
5. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS.	O	O	3, 9.1, 9.3
6. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED.	P	O	7, 9.2
7. PROTECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	O	O	2.2, 8, 9.1
INSPECTION TASKS DURING BOLTING *(AISC 360-16 N.5.6-2)*			
1. FASTENER ASSEMBLIES, PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED.	O	O	8.1, 9.1
2. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRE-TENSIONING OPERATION	O	O	8.1, 9.1
3. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O	8.2, 9.2
4. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES.	O	O	8.2, 9.2
INSPECTION TASKS AFTER BOLTING *(AISC 360-16 N.5.6-3)*			
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P	—

STATEMENT OF SPECIAL INSPECTIONS

1. THIS STATEMENT OF SPECIAL INSPECTIONS HAS BEEN PREPARED PURSUANT TO SECTION 1704.3 OF THE CODE . THIS SECTION DETAILS BOTH REQUIRED SPECIAL INSPECTIONS AND TESTS INCLUDING TESTING PER SECTION 1705 OF THE CODE. THE FOLLOWING SHALL BE OBSERVED DURING THEIR IMPLEMENTATION:

   A. GENERAL:
      a. STRUCTURAL VERIFICATIONS, INSPECTIONS AND TESTS SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 17 OF THE CODE AND/OR THE APPLICABLE REFERENCE STANDARD.

   B. OWNER REQUIREMENTS:
      a. THE OWNER OR OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN SECTION 1705 OF THE CODE AND IN THIS STATEMENT OF INSPECTIONS.

   C. SPECIAL INSPECTOR QUALIFICATIONS:
      a. THE SPECIAL INSPECTIONS SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING HIS OR HER COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING. THE EXPERIENCE OR TRAINING SHALL BE CONSIDERED RELEVANT WHEN THE DOCUMENTED EXPERIENCE OR TRAINING IS RELATED IN COMPLEXITY TO THE SAME TYPE OF SPECIAL INSPECTION ACTIVITIES FOR PROJECTS OF SIMILAR COMPLEXITY AND MATERIAL QUANTITIES.

   D. CONTRACTOR REQUIREMENTS:
      a. SPECIAL INSPECTION IS IN ADDITION TO THE CONTRACTOR'S QUALITY CONTROL INSPECTIONS AND TESTING. THE CONTRACTOR'S QUALITY CONTROL INSPECTIONS AND TESTING SHALL OCCUR PRIOR TO SPECIAL INSPECTION AND REPORTS SHALL BE AVAILABLE TO THE SPECIAL INSPECTOR.
      b. THE CONTRACTOR SHALL ENSURE THAT THE WORK FOR WHICH SPECIAL INSPECTION IS REQUIRED REMAINS ACCESSIBLE AND EXPOSED FOR SPECIAL INSPECTION PURPOSES UNTIL COMPLETION OF THE REQUIRED SPECIAL INSPECTION.
      c. ANY CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE MAIN WIND OR SEISMIC FORCE RESISTING SYSTEM SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.

   E. SPECIAL INSPECTOR REPORT REQUIREMENTS:
      a. THE SPECIAL INSPECTOR SHALL KEEP RECORD OF INSPECTIONS
      b. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND TO THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD.
      c. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS.
      d. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
      e. IF NOT CORRECTED DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD PRIOR TO THE COMPLETION OF THAT PHASE OF WORK.
      f. A FINAL REPORT DOCUMENTING SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED SHALL BE SUBMITTED TO THE BUILDING OFFICIAL.

SUBMITTALS

1. THE FOLLOWING SUBMITTALS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER:
   A. REINFORCING STEEL
   B. CONCRETE MIX DESIGNS FOR ALL CONCRETE STRENGTHS 3,000 PSI AND ABOVE
   C. MASONRY INCLUDING BLOCKS, GROUT AND MORTAR

2. BEFORE SUBMITTING EACH SUBMITTAL, (INCLUDES SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND SIMILAR SUBMITTALS), THE CONTRACTOR SHALL HAVE:
   A. REVIEWED AND COORDINATED EACH SUBMITTAL WITH OTHER SUBMITTALS AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS. THIS INCLUDES THE CONTRACTOR REVIEWING AND VERIFYING THAT THE SUBMITTAL IS COORDINATED AMONG ALL CONSTRUCTION TRADES:
   B. DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, QUANTITIES, DIMENSIONS , SPECIFIED PERFORMANCE AND DESIGN CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR INFORMATION
   C. DETERMINED AND VERIFIED ALL INFORMATION RELATIVE TO THE CONTRACTOR'S RESPONSIBILITIES FOR MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS.
   D. REVIEWED AND VERIFIED THAT THE ARCHITECT'S OR ENGINEER'S COMMENTS FROM PREVIOUS SUBMITTAL ROUNDS HAVE BEEN ADDRESSED.

3. EACH SUBMITTAL SHALL BEAR A STAMP OR SPECIFIC WRITTEN CERTIFICATION THAT THE CONTRACTOR HAS SATISFIED THEIR OBLIGATIONS UNDER THE CONTRACT DOCUMENTS WITH RESPECT TO THE CONTRACTOR'S REVIEW AND APPROVAL OF THAT SUBMITTAL.

4. THE CONTRACTOR'S OBLIGATION TO PERFORM AND COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS SHALL BE ABSOLUTE:
   a. REVIEW AND APPROVAL OF SHOP DRAWINGS BY THE ARCHITECT AND/OR ENGINEER DOES NOT CONSTITUTE APPROVAL OF A CHANGE REQUEST, SUBSTITUTION OR MODIFICATION TO THE CONTRACT DRAWINGS.
   b. THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED OF CHANGE REQUESTS, SUBSTITUTIONS OR MODIFICATIONS TO THE CONTRACT DRAWINGS IN WRITING BEFORE AND SEPARATE FROM THE SUBMITTAL PRIOR TO SUBMISSION.

5. FABRICATION FOR ITEMS IN THESE DOCUMENTS SHALL NOT COMMENCE UNTIL THE SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE ENGINEER.

6. THE CONTRACTOR SHALL ALLOW SUFFICIENT TIME FOR THE ENGINEER OF RECORD TO THOROUGHLY REVIEW SUBMITTAL PACKAGES (10 WORKING DAYS, MINIMUM).

CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE: SPECIAL INSPECTION & TESTS

100% CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER
JESSICA M. MEADOWS
No. 6438
STRUCTURAL
STATE OF CALIFORNIA

DESIGNED BY:

DRAWN BY: J. LONG

CHECKED BY: J. MEADOWS

APPROVED BY:

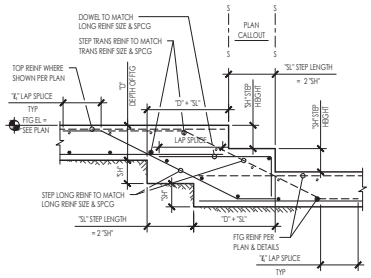
SCALE: AS NOTED

DATE: AUGUST 23, 2024

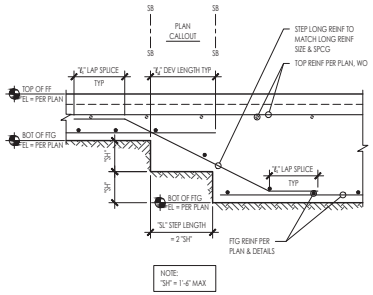
CITY SPECIFICATION NO. 2000577-02

PLAN FILE NO. / LOCATION 2504-05-PS23

SHEET NO. S-104

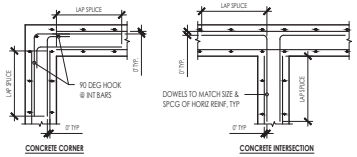


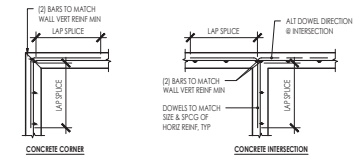
STEP FOOTING — NTS — 41



STEPPED FOOTING (BOTTOM ONLY) — NTS — 42

43

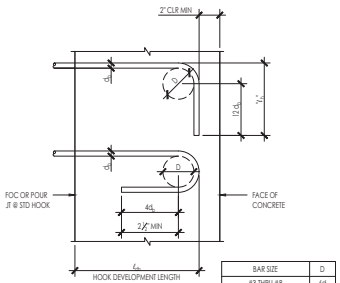




NOTE: REINFORCEMENT SHOWN ON WALL ELEVATION(S), BOUNDARY REINFORCING DETAILS, AND OTHER SPECIFICALLY REFERENCED DETAILS SHALL TAKE PRECEDENCE OVER REINFORCEMENT SHOWN HERE.

CONC REINF @ INTERSECTION — NTS — 32

33



BAR SIZE	D
#3 THRU #8	6d
#9 THRU #11	8d

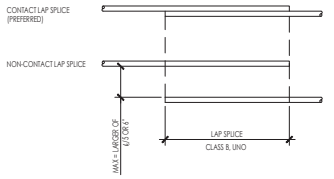
STANDARD HOOK DEVELOPMENT LENGTH ℓ_{dh}"

BAR SIZE	D	ℓ_{dh}"	NORMAL WEIGHT		
			2,500	3,000	4,000
#3	2 1/4"	6"	0'-9"	0'-9"	0'-8"
#4	3"	8"	1'-0"	0'-11"	0'-10"
#5	3 3/4"	10"	1'-3"	1'-2"	1'-0"
#6	4 1/2"	12"	1'-6"	1'-5"	1'-3"
#7	5 1/4"	1'-2"	1'-9"	1'-8"	1'-5"
#8	6"	1'-4"	2'-0"	1'-10"	1'-7"
#9	9 1/2"	1'-7 1/2"	2'-3"	2'-1"	1'-10"
#10	10 3/4"	1'-10"	2'-7"	2'-4"	2'-1"
#11	12"	2'-0 1/2"	2'-10"	2'-7"	2'-3"

NOTES:
1. ALL HOOKED BARS SHALL EXTEND AS FAR AS POSSIBLE WITH A MINIMUM 2" END COVER AND WITH EMBEDMENT NOT LESS THAN SHOWN ON THE SCHEDULE UNLESS NOTED OTHERWISE ON PLANS.
2. MINIMUM SIDE COVER = 2$\frac{1}{2}$".
3. FOR LIGHTWEIGHT CONCRETE MULTIPLY LENGTHS IN SCHEDULE BY 1.3.

REINF HOOK DEVELOPMENT LENGTH AND BENDS — NTS — 22

23

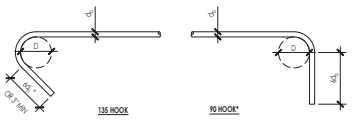


REINFORCING TENSION DEVELOPMENT LENGTH AND LAP SPLICE SCHEDULE

BAR SIZE	DEVELOPMENT LENGTH, ℓ_d (CLASS A LAP SPLICE)			LAP SPLICE, ℓ_s (CLASS B LAP SPLICE)		
	f'c (psi)			f'c (psi)		
	2,500	3,000	4,000	2,500	3,000	4,000
#3	1'-6"	1'-5"	1'-3"	2'-0"	1'-10"	1'-7"
#4	2'-0"	1'-10"	1'-7"	2'-8"	2'-5"	2'-1"
#5	2'-6"	2'-4"	2'-0"	3'-3"	3'-0"	2'-7"
#6	3'-0"	2'-9"	2'-5"	3'-11"	3'-7"	3'-2"
#7	4'-5"	4'-0"	3'-6"	5'-9"	5'-2"	4'-6"
#8	5'-0"	4'-7"	4'-0"	6'-6"	5'-11"	5'-2"
#9	5'-8"	5'-2"	4'-6"	7'-4"	6'-9"	5'-10"
#10	6'-5"	5'-10"	5'-1"	8'-3"	7'-7"	6'-7"
#11	7'-1"	6'-6"	5'-7"	9'-2"	8'-5"	7'-3"

NOTES:
1. VALUES ABOVE ARE FOR REINFORCEMENT WITH THE FOLLOWING PARAMETERS:
   A. GRADE 60 REINFORCEMENT
   B. NORMAL WEIGHT CONCRETE
      a. FOR LIGHTWEIGHT CONCRETE MULTIPLY THE VALUES ABOVE BY 1.3
   C. NON-EPOXY COATED REINFORCEMENT
   D. HORIZONTAL BARS WITHOUT 12" OF CONCRETE BELOW (BOTTOM BARS), AND VERTICAL BARS
      a. FOR TOP BARS WITH 12" OR MORE OF CONCRETE BELOW THE BAR MULTIPLY THE VALUES ABOVE BY 1.3
   E. CLEAR SPACING NOT LESS THAN d_b, CLEAR COVER NOT LESS THAN d_b AND STIRRUPS THROUGH L_d NOT LESS THAN MIN
      OR
      CLEAR SPACING NO LESS THAN 2d_b AND CLEAR COVER NOT LESS THAN db
      a. FOR OTHER SPACING AND COVER CONDITIONS MULTIPLY THE VALUES ABOVE BY 1.5
   F. REINFORCEMENT NOT IN SHEAR WALLS
      a. FOR REINFORCEMENT IN SHEAR WALLS MULTIPLY THE VALUES ABOVE BY 1.25
2. THE MULTIPLIERS LISTED IN NOTE 1 ABOVE ARE CUMULATIVE INCREASES IN DEVELOPMENT/LAP SPLICE LENGTH.
3. ALL LAP SPLICES REFERENCED IN THE PLANS SHALL BE CLASS B UNLESS NOTED OTHERWISE.
4. WHEN REINFORCING BARS OF TWO SIZES ARE LAP-SPLICED IN TENSION, USE THE LARGER OF THE TENSION CLASS B, LAP SPLICE LENGTH (ℓ_s) OF THE SMALLER BAR, AND THE CLASS A, TENSION DEVELOPMENT LENGTH (ℓ_d) OF THE LARGER BAR.

REINF DEVELOPMENT LENGTH AND SPLICES — NTS — 12



BAR SIZE	D
#3	1$\frac{1}{2}$"
#4	2"
#5	2$\frac{1}{2}$"

* PROVIDE 10d_b EXTENSIONS IN LIEU OF 6d_b AT ALL FRAME COLUMNS, GIRDERS, SHEAR WALLS AND SHEAR WALL BOUNDARY MEMBERS

REINF TIES AND STIRRUPS — NTS — 13

CITY OF SAN LUIS OBISPO

1106 WALNUT FENCING IMPROVEMENTS

TYPICAL CONCRETE DETAILS

100% CONSTRUCTION DOCUMENTS

PROJECT TITLE:

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER — JESSICA M. MEADOWS — No. 84,844 — STRUCTURAL — STATE OF CALIFORNIA

DESIGNED BY:	
DRAWN BY:	J. LONG
CHECKED BY:	J. MEADOWS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	AUGUST 23, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	S-301

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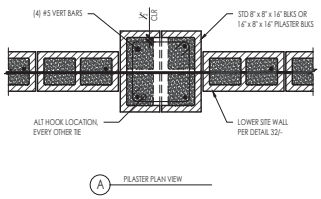
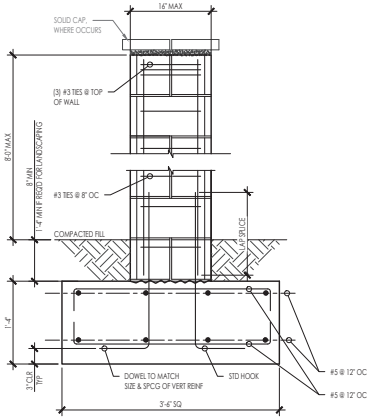
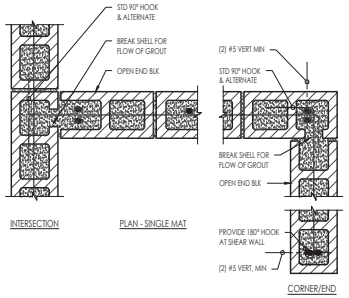
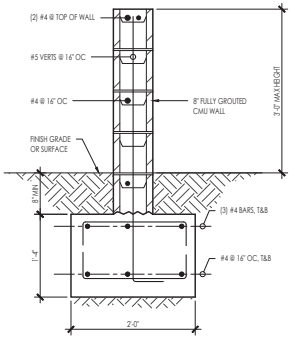




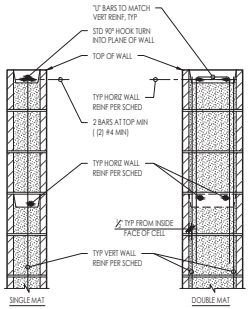
CMU PILASTER — 1" = 1'-0" — 42



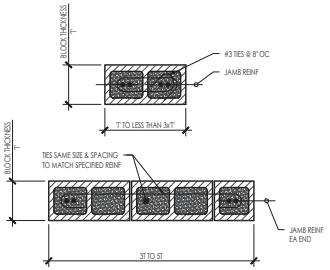
MASONRY WALL CORNER DETAIL — NTS — 31



CMU SITE WALL — 1" = 1'-0" — 32

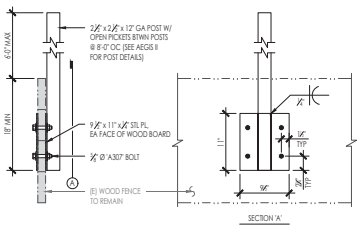


TYP REINF AT TOP OF WALL — NTS — 21

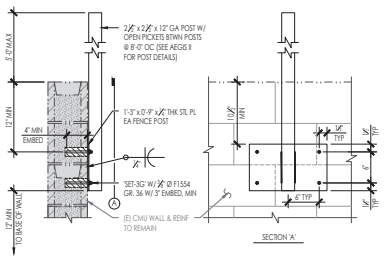


NOTE:
TIE MAY BE TURNED UP AS NECESSARY TO FIT INSIDE WALL BREAK WEBS AND/OR INTERIOR FACE SHELL AS REQUIRED

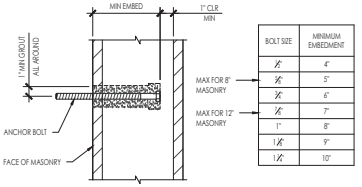
CONCRETE MASONRY WALL PIERS — NTS — 22



FENCE ATTACHMENT TO (E) WOOD WALL — 1" = 1'-0" — 43



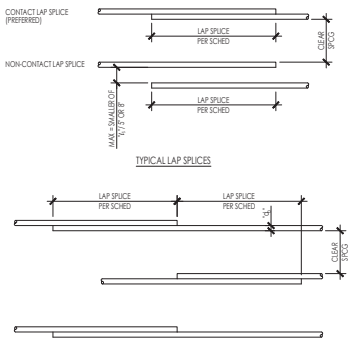
FENCE ATTACHMENT TO (E) CMU WALL — 1" = 1'-0" — 33



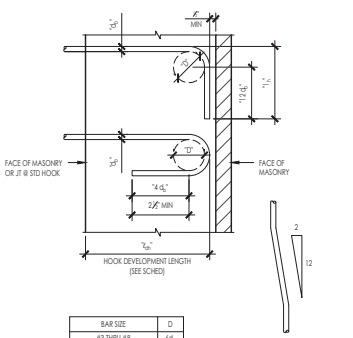
BOLT SIZE	MINIMUM EMBEDMENT
½"	4"
⅝"	5"
¾"	6"
⅞"	7"
1"	8"
1¼"	9"
1½"	10"

NOTES:
1. MINIMUM BOLT SPACING SHALL BE 16 BOLT DIAMETERS WITH A MINIMUM EDGE DISTANCE OF 12 DIAMETERS, UNLESS NOTED OTHERWISE.
2. PROVIDE AN ADDITIONAL 2" OF EMBEDMENT FOR ANCHOR BOLTS LOCATED IN THE TOP OF COLUMNS.
3. ANCHOR BOLTS SHALL BE HEX HEADED WITH THE DIMENSIONS OF THE HEX CONFORMING TO ANSI/ASME B18.2.1 BENT BAR ANCHORS SHALL NOT BE USED.

MASONRY ANCHOR BOLT SCHEDULE — NTS — 23



BAR SIZE	D
#3	1½"
#4	2"
#5	2½"



BAR SIZE	D
#3 THRU #8	6d_b
#9 THRU #11	8d_b

TYPICAL COLUMN BAR OFFSET

BAR SIZE	DEVELOPMENT LENGTH (td) OR LAP SPLICE LENGTH (ls)	HOOK DEVELOPMENT LENGTH (le)	D	L
#3	2'-3"	0'-5"	2½	5"
#4	3'-0"	0'-7"	3	8"
#5	3'-9"	0'-9"	3¾	10"
#6	4'-6"	0'-10"	4½	1'-0"
#7	5'-3"	0'-12"	5¼	1'-2"
#8	6'-0"	1'-1"	6	1'-4"
#9	6'-9"	1'-3"	9½	1'-7½"

NOTES:
1. USE DEVELOPMENT LENGTH (td) AND SPLICE LENGTH (ls) INDICATED IN SCHEDULE FOR ALL DOWEL LENGTHS NOT SHOWN ON PLANS UNLESS OTHERWISE PERMITTED BY THE SEOR AND JURISDICTION AGENCY
2. DEVELOPMENT LENGTHS (td) AND SPLICE LENGTHS (ls) INDICATED IN SCHEDULE CORRESPOND TO GRADE 60 BARS IN 1,500 OR 2,500 psi NORMAL WEIGHT MASONRY
3. THIS SCHEDULE SHALL BE USED WHERE DEVELOPMENT AND SPLICE LENGTHS ARE NOT SPECIFICALLY DETAILS AND DIMENSIONED ON THE DRAWINGS
4. WHERE BARS OF DIFFERENT SIZES ARE LAP SPLICED, SPLICE LENGTH SHALL BE THE SPLICE LENGTH OF THE SMALLER BARS
5. NOTE THAT THE LAP SPLICES SHOWN ACCOUNT FOR THE INCREASE IN LAP SPLICE IN REGIONS OF MOMENT WHERE THE DESIGN TENSILE STRESSES IN THE REINFORCEMENT ARE GREATER THAN 80 PERCENT OF THE ALLOWABLE STEEL TENSION STRESS, Fs
6. D = FINISHED INSIDE BEND DIAMETER
7. d_b = NOMINAL BAR DIAMETER

MASONRY-LAP SPLICE / DEVELOPMENT LENGTH SCHED — NTS — 13

CITY OF SAN LUIS OBISPO

1106 WALNUT FENCING IMPROVEMENTS

MASONRY DETAILS

PROJECT TITLE:

SHEET TITLE:

100% CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER — JESSICA M. MEADOWS — STRUCTURAL — STATE OF CALIFORNIA

DESIGNED BY:	
DRAWN BY:	J. LONG
CHECKED BY:	J. MEADOWS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	AUGUST 23, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	S-321

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GENERAL NOTES

1. CODE COMPLIANCE: ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH CODES, STANDARDS, AND ORDINANCES AS SET FORTH BY THE AUTHORITIES HAVING JURISDICTION AND THEIR LATEST ADOPTED EDITIONS (IN EFFECT AT TIME OF BUILDING PERMIT APPLICATION) OF THE FOLLOWING PUBLICATIONS:

   A. ALL WORK SHALL COMPLY WITH 2020 NATIONAL ELECTRICAL CODE (NEC) AS AMENDED BY THE 2022 CALIFORNIA ELECTRICAL CODE (CEC), 2022CALIFORNIA BUILDING CODE (CBC), 2022 CALIFORNIA ENERGY CODE (CEnC), CALIFORNIA FIRE CODE (CFC), 2022 CALIFORNIA MECHANICAL CODE (CMC), 2022 CALIFORNIA GREEN BUILDING STANDARDS (CGBC), AND ADOPTED ORDINANCES.

   B. AMERICANS WITH DISABILITIES ACT (ADA).

2. SAFETY: THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL EQUIPMENT IN A SAFE AND RESPONSIBLE MANNER. KEEP DEAD FRONT EQUIPMENT IN PLACE WHILE EQUIPMENT IS ENERGIZED. CONDUCT ALL CONSTRUCTION OPERATIONS IN A SAFE MANNER FOR EMPLOYEES AS WELL AS OTHER WORKPERSONS OR ANYONE VISITING THE JOB SITE. PROVIDE BARRIERS, FLAGS, TAPE, ETC. AS REQUIRED FOR SAFETY. THE CONTRACTOR SHALL HOLD ALL PARTIES HARMLESS OF NEGLIGENT SAFETY PRACTICES, WHICH MAY CAUSE INJURY TO OTHERS ON OR NEAR THE JOB SITE.

3. FIRE RATED ASSEMBLIES SHALL MAINTAIN RATINGS AS SPECIFIED IN THE CALIFORNIA BUILDING CODE CHAPTER 7. CONTRACTOR SHALL PROVIDE AND INSTALL PHYSICAL ENCLOSURE AROUND FIXTURES, PANELS, ETC. AS REQUIRED. ALL ASSEMBLIES TO BE PENETRATED SHALL BE INSTALLED WITH APPLICABLE THROUGH-PENETRATION FIRESTOP SYSTEM AS DETERMINED BY UL CLASSIFICATION. BEFORE CONSTRUCTION, VERIFY AND COMPLY WITH REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION.

4. LABEL PANELS, CABINETS, BACKBOARDS, MAIN DEVICES, SAFETY SWITCHES, CONTACTORS AND OTHER SPECIFICALLY DESIGNATED EQUIPMENT SHOWN ON PLANS. USE ENGRAVED LAMINATED PLASTIC NAMEPLATES ATTACHED BY SCREWS OR RIVETS. FOR FEEDERS, NEATLY AND INDELIBLY LABEL CONDUIT DESTINATIONS ON BOTH VISIBLE ENDS OF CONDUIT RUNS WHERE CONDUITS TERMINATE AT DESIGNATED ENCLOSURES, STRUCTURES OR EQUIPMENT (INCLUDING PULL AND SPLICE BOXES).

5. THE ISSUANCE OF A PERMIT SHALL NOT PREVENT THE BUILDING OFFICIAL FROM REQUIRING THE CORRECTION OF ERROS ON THESE PLANS OR FROM PREVENTING ANY VIOLATION OF THE CODES ADOPTED BY THE CITY, RELEVANT LAWS, ORDINANCES, RULES AND/OR REGULATIONS.

RATED WALLS/ASSEMBLIES NOTES

1. IN FIRE-RESISTANCE RATED WALLS, DETAIL THROUGH PENETRATIONS AND MEMBRANE PENETRATION PER CBC 714.4 AS NOTED BELOW:
   A. STEEL, FERROUS OR COPPER PIPES MAY PENETRATE FIRE-RESISTANCE RATED WALLS, PROVIDED THE OPENING IS PROTECTED AS FOLLOWS: (CBC 714.4.1)
   i. ITEM PENETRATING CONCRETE OR MASONRY WALLS IS A MAXIMUM 6 INCHES NOMINAL DIAMETER AND THE AREA OF THE OPENING THROUGH THE WALL DOES NOT EXCEED 144 SQUARE INCHES, CONCRETE, GROUT OR MORTAR IS PERMITTED WHERE IT IS INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE F IRE-RESISTANCE RATING; OR
   ii. WHEN THE ANNULAR SPACE IS PROTECTED WITH MATERIAL THAT MEETS ASTM E 119 OR UL 263.
   B. PENETRATIONS SHALL BE FIRE-STOPPED BY A SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479, AND SHALL HAVE AN F RATING OF NOT LESS THAN THE REQUIRED FIRE-RESISTANCE RATING OF THE WALL PENETRATED. (CBC 714.4.1.2)
   C. MEMBRANE PENETRATIONS OF MAXIMUM 2-HOUR FIRE-RESISTANCE RATED WALLS BY STEEL ELECTRICAL BOXES ARE PERMITTED, PROVIDED THAT EACH DOES NOT ESCEED 16 SQUARE INCHES IN AREA AND THE TOTAL AREA OF SUCH OPENING DOES NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA, AND THE SPACE BETWEEN THE WALL MEMBRANE AND THE BOX DOES NOT EXCEED $\frac{1}{8}$ INCH. ADDITIONALLY, OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES (CBC 714.4.2 EXCEPTION 1).
   D. MEMBRANE PENETRATIONS BY LISTED ELECTRICAL BOXES OF ANY MATERIAL ARE PERMITTED, PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE RATED ASSEMBLIES, AND THE SPACE BETWEEN THE WALL MEMBRANE AND THE BOX DOES NOT EXCEED 1/8 INCH UNLESS LISTED OTHERWISE. ADDITIONALLY, OUTLET BOXES ON OPPOSED SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES. (CBC 714.4.2 EXCEPTION 2)
   E. A FIRE SPRINKLER SHALL BE PERMITTED TO BE UNPROTECTED PROVIDED SUCH SPACE IS COVERED BY A METAL ESCUTCHEON PLATE. (CBC 714.4.2 EXCEPTION 5)
   F. WHERE WALLS ARE PENETRATED BY OTHER MATERIALS OR OPENINGS LARGER THAN THOSE MENTIONED ABOVE, THEY MUST BE QUALIFIED BY TEST IN ACCORDANCE WITH CBC 714.4.2 EXCEPTION 2.

2. IN FIRE-RESISTANCE HORIZONTAL ASSEMBLIES , DETAIL THROUGH PENETRATIONS AND MEMBRANE PENETRATION PER CBC 714.5 AS NOTED BELOW:
   A. STEEL, FERROUS OR COPPER CONDUITS MAY PENETRATE FIRE-RESISTANCE RATED FLOOR ASSEMBLY WHEN THE ANNULAR SPACE IS PROTECTED WITH MATERIAL THAT MEETS ASTM E 119 OR UL 263 (CBC 714.5.1 EXCEPTION 1)
   B. PENETRATING ITEMS, AS NOTED ABOVE, WITH A MAXIMUM 6 INCHES NOMINAL DIAMETER SHALL NOT BE LIMITED TO THE PENETRATION OF A SINGLE FIRE-RESISTANCE RATED FLOOR ASSEMBLY, PROVIDED THAT THE AREA OF THE OPENINGS DOES NOT EXCEED 144 SQUARE INCHES IN ANY 100 SQUARE FEET OF FLOOR AREA. (CBC 714.4.1.1 EXCEPTION 1)
   C. PENETRATIONS SHALL BE FIRE-STOPPED BY A SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479. THE SYSTEM SHALL HAVE AN F RATING AND T RATING OF NOT LESS THAN 1-HOUR BUT NOT LESS THAN THE REQUIRED FIRE-RESISTANCE RATING OF THE FLOOR PENETRATED (CBC 714.5.1)
   D. MEMBRANE PENETRATIONS BY LISTED ELECTRICAL OUTLET BOXES ARE PERMITTED PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE RATED ASSEMBLIES, AND THE SPACE BETWEEN THE CEILING MEMBRANE AND THE BOX DOES NOT EXCEED 1/8 INCHESUNLESS LISTED OTHERWISE. (CBC 714.5.2 EXCEPTION 4)
   E. A FIRE SPRINKLER SHALL BE PERMITTED TO BE UNPROTECTED PROVIDED SUCH SPACE IS COVERED BY A METAL ESCUTCHEON PLATE. (CBC 714.5.2 EXCEPTION 5)

3. JOINTS INSTALLED IN OR BETWEEN FIRE-RESISTANCE RATED WALL, FLOOR OR FLOOR/CEILING ASSEMBLIES AND ROOFS OR ROOF/CEILING ASSEMBLIES SHALL BE PROTECTED AN APPROVED FIRE-RESISTANT JOINT SYSTEM WITH A FIRE-RESISTANCE RATING NOT LESS THAN THAT OF THE ASSEMBLY IN WHICH IT IS INSTALLED. PROVIDE DETAILS (CBC 7145.1)

4. FIRE DOORS AND FIRE-PROTECTION RATED GLAZING SHALL BEAR LABELS AS REQURIED BY CBC 716.2.9 AND 716.3.5.

5. FIRE DAMPERS SHALL BE THE MINIMUM FIRE PROTECTION RATING SPECIFIED IN CBC TABLE 717.3.2.1 FOR THE TYPE OF PENETRATION (CBC 717.3.2.1)

6. PROVIDE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS AND CEILING RADIATION DAMPERS SHALL BE PROVIDE AS PRESCRIBED IN CBC 717.

DEMOLITION NOTES

A. REFER TO LANDSCAPE DEMOLITION SHEETS FOR ADDITIONAL INFORMATION.

B. EQUIPMENT SHOWN TO BE REMOVED IS SHOWN FOR REFERENCE ONLY. INFORMATION WAS OBTAINED FROM ORIGINAL BUILDING DRAWINGS AND LIMITED FIELD INVESTIGATION AND MAY NOT REPRESENT ALL ELECTRICAL DEMOLITION. FIELD VERIFY CONDITIONS AND DISCONNECT/REMOVE ALL EQUIPMENT AS REQUIRED TO MEET THE INTENT OF THAT SHOWN ON THE LIGHTING AND POWER/SIGNAL DRAWINGS.

C. ALL ELECTRICAL EQUIPMENT SHOWN ON DRAWING (OR REQUIRED) TO BE DEMOLISHED SHALL BE DISCONNECTED, REMOVED AND DISPOSED OF BY ELECTRICAL CONTRACTOR. NO EQUIPMENT (RACEWAYS, BOXES, CABLING, ETC.) SHALL BE ABANDONED IN PLACE AND COVERED BY NEW CONSTRUCTION.

D. SCHEDULE ANY OUTAGES WITH OWNER PRIOR TO DE-ENERGIZATION OF ANY BRANCH CIRCUITS OR FEEDERS.

POWER NOTES

A. FUSING: ALL FUSIBLE SAFETY DISCONNECT SWITCHES SHALL BE PROVIDED WITH DUAL-ELEMENT TIME DELAY TYPE FUSES SIZED AND RATED PER EQUIPMENT MANUFACTURERS' RECOMMENDATIONS. VERIFY WITH EQUIPMENT NAMEPLATE BEFORE INSTALLATION.

B. INSTALL SEPARATE NEUTRALS FOR EACH 120V BRANCH CIRCUIT.

C. MOTOR OVERLOAD PROTECTION: WHERE REQUIRED BY NEC ARTICLE 430 PART C AND NOT SHOWN ON PLAN OR PROVIDED INTEGRAL WITH EQUIPMENT, PROVIDE AND INSTALL THERMAL OVERLOAD PROTECTION FOR ALL MOTORS.

D. DEVICE LOCATIONS SHOWN ARE SCHEMATIC AND APPROXIMATE. EXACT LOCATIONS SHALL BE FIELD VERIFIED DURING ROUGH-IN WITH ARCHITECTURAL ELEVATIONS, CASEWORK SHOP DRAWINGS, FURNITURE, ETC. AND SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT WITH OTHER EQUIPMENT.

E. ALL NEW OUTLETS MUST BE TAMPER PROOF.

F. ALL 15 AND 20AMPERE RECEPTACLES FOR BOTH DAMP AND WET LOCATIONS REQUIRED TO BE LISTED WEATHER-RESISTANT (WR) TYPE PER CEC 406.9 (A) AND (B)

G. CEC 406.9(A) RECEPTACLES IN DAMP LOCATIONS: RECEPTACLES INSTALLED OUTDOORS IN A LOCATION PROTECTED FROM THE WEATHER OR IN OTHER DAMP LOCATIONS SHALL BE AN ENCLOSURE FOR THE RECEPTACLE THAT IS WEATHERPROOF WHEN THE RECEPTACLE IS COVERED (ATTACHMENT PLUG CAP NOT INSERTED AND RECEPTACLE COVERS CLOSE)

H. CEC 406.9(B) RECEPTACLES OF 15 AND 20AMP, 125 AND 250 VOLTS INSTALLED IN A WET LOCATION SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED. AN OUTLET BOX HOOD INSTALLED FOR THIS PURPOSE SHALL BE LISTED AND SHALL BE IDENTIFIED AS 'EXTRA-DUTY" OTHER LISTED PRODUCTS, ENCLOSURES, OR ASSEMBLIES PROVIDING WEATHERPROOF PROTECTION THAT DO NOT UTILIZE AN OUTLET BOX HOOD NEED TO BE MARKED "EXTRA DUTY"

   EXCEPTION: 15 AND 20AMP, 125 THROUGH 250 VOLT RECEPTACLES INSTALLED IN A WET LOCATION AND SUBJECT TO ROUTINE HIGH-PRESSURE SPRAY WASHING SHALL BE PERMITTED TO HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHEN THE ATTACHMENT PLUG IS REMOVED.

CONDUIT SYSTEMS NOTES

CONDUIT SYSTEMS USED ON THIS PROJECT SHALL BE AS FOLLOWS

1. PVC SCHEDULE 40 - underground/below slab with GRS elbows and risers tape wrapped).
2. ELECTRICAL METALLIC CONDUIT (EMT) - above grade/slab in building construction and where exposed above 8'-0" aff.
3. GALVANIZED RIGID STEEL (GRS) - where exposed below 8'-0" aff. and/or where subject to physical damage.
4. FLEXIBLE STEEL CONDUIT - above ceilings and/or concealed in building construction (seal tight flex required in exterior locations).
6. MC CABLE ALLOWED WITHIN WALLS AND ABOVE T-BAR CEILING.

REFER TO SECTION 260533 & 260500 OF SPECIFICATIONS FOR ADDITIONAL INFORMATION. CONDUITS SHALL BE MINIMUM 3/4" UNLESS OTHERWISE NOTED. CONDUIT SIZES, WHERE NOT NOTED ON THE DRAWINGS, SHALL BE SIZED FOR MAXIMUM 40% FILL PER CEC 310-6.

ADDITIONAL CONDUIT REQUIREMENTS.

- ROUTE CONDUIT(S) BELOW GRADE OR ABOVE CEILING SO THAT WALL OUTLETS, DEVICES, AND CONDUITS IN ALL EXPOSED BRICK WALL LOCATIONS SHALL BE RECESSED MOUNTED INSIDE BRICK. LOCATE DEVICES AT CELL WITH REINFORCEMENT CENTER AT BRICK AND/OR ONE CELL OVER AWAY FROM JAMB. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR CMU WALL LOCATIONS SECTIONS, AND DETAILS.
- REFER TO ELECTRICAL DETAILS FOR METAL PIPE PENETRATION THRU FIRE RATED WALL. PENETRATION OF FIRE-RESISTIVE WALLS AND FLOOR CEILINGS SHALL BE PROTECTED AS REQUIRED IN CBC SECTION 714.
- REFER TO ELECTRICAL DETAIL FOR DEVICE INSTALLATION FOR FIRE RATED WALLS.
- NO CONDUITS OR PIPING IN ANY SPACE SHALL BE EXPOSED AT THE CEILING AND WALL (COORDINATE WITH ALL DISCIPLINES PRIOR TO CONSTRUCTION). LOCATE ALL CONDUIT WITHIN WALLS

CONDUCTORS AND CABLES

REFER TO SPECIFICATIONS 26 0519 FOR ADDITIONAL INFORMATION.

1. WIRE CONNECTORS SHALL BE MINIMUM 75 DEGREE CENTIGRADE RATED AND PROPERLY SIZED FOR THE NUMBER OF CONDUCTORS BEING CONNECTED, TERMINATED, SPLICED, ETC. ALL ABOVE GRADE CONNECTORS SHALL BE SOLDERLESS LUG OR PLASTIC WIRE NUT TYPE, SCREW ON, PRESSURE CABLE TYPE (WIRE UT OR SPRING NUT TYPE) 600 VOLT, 105 DEGREE C, WITH SKIRT TO COVER ALL PORTIONS OF STRIPPED WIRES. CONNECTOR SHALL BE U.L. RATED FOR NUMBER AND SIZE OF CONDUCTORS BEING JOINED TOGETHER AS SPLICED.
2. WIRES AND CABLES FOR LINE VOLTAGE SYSTEM AND CONTROLS. WIRE AND CABLE SHALL BE COPPER, 600 VOLT RATED THROUGH OUT. CONDUCTORS 14AWG OT 10AWG, SOLID OR STRANDED. CONDUCTORS 8 AWG AND LARGER, STRANDED
3. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED. MINIMUM SIZE FOR INDIVIDUAL CONDUCTORS SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON PANEL SCHEDULE OR PLANS. SIZE #8 AWG AND LARGER SHALL BE STRANDED CONDUCTOR. INDIVIDUAL CONDUCTORS SHALL BE INSULATED WITH TYPE, XHHW, THW, THHN/THWN 600 VOLT INSULATION UNLESS OTHERWISE NOTED.
4. PROPER INSULATION TYPE SHALL BE USED FOR THE PROPER ENVIRONMENTAL APPLICATION (I.E. WATERPROOF, WET LOCATION, PLENUM TEMPERATURE RATED). ALL CONDUCTORS, WIRING CABLE WHERE INSTALLED BELOW FLOOR, SLAB OR UNDERGROUND SHALL BE CONSIDERED WET LOCATIONS, AND SHALL BE RATED ACCORDINGLY. NON WATERPROOF CABLING IS NOT ALLOWED IN ANY BELOW GRADE OR WET APPLICATION.
5. GROUP THE COMMON NEUTRAL CONDUCTOR FOR MULTIPLE CIRCUITS WITH ITS ASSOCIATED UNGROUNDED CONDUCTORS WHEN CONTAINED IN THE SAME ENCLOSURE. CEC 200.4(B)
6. THE BRANCH CIRCUIT SERVING EMERGENCY LIGHTING AND POWER CIRCUITS SHALL NOT BE PART OF A MULTIWIRE BRANCH CIRCUIT. CEC 700.19.

SITE PLAN NOTES

A. TRENCHING AND BACKFILLING FOR ALL CONDUIT SYSTEMS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL CONDUITS SHALL HAVE MINIMUM COVER REQUIREMENTS AS SPECIFIED IN CEC 300-5. MORE STRINGENT DEPTH REQUIREMENTS MAY BE IMPOSED BY UTILITY COMPANY AND / OR THIS SPECIFICATION. JOINT TRENCHING MAY BE UTILIZED WHERE PRACTICABLE AND WERE PERMITTED BY THIS SPECIFICATION.

B. LOCATIONS OF EXISTING UNDERGROUND (UG) UTILITY SYSTEMS SHALL BE DETERMINED BY CALLING UNDERGROUND SERVICE ALERT (USA). WHEN PLANNING UNDERGROUND WORK, AND BEFORE YOU DIG, CONTACT UNDERGROUND SERVICE ALERT (USA) AT LEAST 48 HOURS PRIOR TO EXCAVATION (WEEKENDS EXCLUDED) FOR THE LOCATION OF UNDERGROUND GAS AND ELECTRIC LINES OR EQUIPMENT.

C. MAINTAIN REQUIRED CLEARANCES FROM ALL SANITARY SEWER, WATER AND STORM DRAIN PIPING. REFER TO CIVIL PLANS FOR EXACT LOCATIONS AND DEPTHS OF PIPING.

LEGEND

NOTE: INTERPRET IN CONTEXT

LIGHT FIXTURES

- CEILING SURFACEMOUNT
- WALL SURFACEMOUNT
- PENDANT MOUNT
- RECESSED DOWNLIGHT
- RECESSED WALLWASH
- RECESSED FLUOR.
- SURFACE FLUOR.
- FLUOR. STRIP UON
- TRACK LIGHT
- DIRECTIONAL FLOOD
- EMERGENCY FIXTURE
- POLE LIGHT
- POLE LIGHT- DECORATIVE
- TANDEM-WIRED LAMPS
- BOLLARD
- EXIT LIGHT- WALL
- EXIT LIGHT- CEILING (ARROW INDICATES DIRECTION)
- A — LETTER ADJACENT INDICATES FIXTURE TYPE

POWER/COMM.

- SINGLE RECEPT.
- DUPLEX RECEPT.
- GFI — GROUND FAULT CIRCUIT INTERRUPT
- * — MOUNTED ABOVE COUNTER
- DUPLEX- HALF SWITCHED
- DOUBLE DUPLEX, HALF SWITCHED
- DOUBLE DUPLEX
- SPECIAL CONFIGURATION
- DUPLEX- FLOOR OUTLET
- J — JUNCTION BOX
- TELEPHONE OUTLET
- DATA OUTLET
- PHONE/DATA COMBO OUTLET
- MOUNTED ABOVE COUNTER
- SAFETY DISCONNECT
- TV — TELEVISION OUTLET
- IDF — INTERMEDIATE DISTRIBUTION FRAME
- MDF — MAIN DISTRIBUTION FRAME
- AP — ACCESS POINT

MISCELLANEOUS

- MOTOR
- T — THERMOSTAT
- CIRCUIT BREAKER
- FUSIBLE SWITCH
- Ø — PHASE
- GROUND

CONDUIT/WIRE

- NEW
- UNDERGROUND
- NEW POWER HOMERUN (3 HOTS & NEUT SHOWN)
- ISOLATED GROUND
- E — EXISTING TO REMAIN
- (E) POWER HOMERUN
- CONDUIT STUB (W/MARKER)
- VERTICAL CONDUIT RUN
- CONDUIT SEAL
- FLEXIBLE CONNECTION
- LV — LOW VOLTAGE
- SURFACEMOUNT RACEWAY

SWITCHES

- \$ — SPST
- $\$_2$ — DPST
- $\$_3$ — 3-WAY
- $\$_4$ — 4-WAY
- $\$_D$ — DIMMER
- TIMER SWITCH
- $\$_T$ — W/THERMAL OVERLOAD
- $\$_P$ — W/PILOT LIGHT
- $\$_K$ — KEY OPERATED
- \$ \$ — DUAL LEVEL SWITCHING
- ,a — SWITCHLEG DESIGNATION
- OS — OCCUPANCY SENSOR

FIRE ALARM

- FIRE ALARM CONTROL PANEL
- RPS — REMOTE POWER SUPPLY
- H — HORN- AUDIBLE DEVICE
- V — VISUAL- VISUAL DEVICE
- AV — AUDIBLE/VISUAL
- SV — SPEAKER/VISUAL
- F — FLOW SWITCH
- T — TAMPER SWITCH
- P — MANUAL PULL STATION
- SD — SMOKE DETECTOR
- SD_D — DUCT SMOKE DETECTOR
- SD_{CO} — SMOKE/CO DETECTOR
- H — HEAT DETECTOR
- B — BELL
- END OF LINE RESISTOR

ABBREVIATIONS

A	AMPERE
AF	AMP FUSE RATING
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AIC	AMPERES INTERRUPT CAPACITY
AS	AMP SWITCH RATING
BFG	BELOW FINISH GRADE
CB	CIRCUIT BREAKER
CEC	CA. ELECTRICAL CODE
CKT	CIRCUIT
C	CONDUIT
C.O.	CONDUIT ONLY
(E)	EXISTING
EC	ELECTRICAL CONTRACTOR
EF-#	EXHAUST FAN
(EXN)	(E) IN (N) LOCATION
(EXR)	(E) TO BE (R)
(F)	FUTURE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
G	GROUNDING CONDUCTOR
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT CKT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
GWS	GANGED WITH SWITCH
IG	ISOLATED GROUND
LTG	LIGHTING
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCHBOARD
MTTB	MAIN TELEPHONE TERMINAL BOARD
(N)	NEW
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
P	POLE
PV	PHOTOVOLTAIC
(R)	RELOCATE(D)
(TBR)	TO BE REMOVED
TYP	TYPICAL
UC	UNDERCABINET
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLT AMPERES
W	WATT, WIRE
WP	WEATHERPROOF (NEMA 3R)

CONVENTIONS

- X — NUMBERED SHEET NOTES: REFERS TO NOTES ON SAME SHEET AS REFERENCE
- 3103 — FEEDER SCHEDULE DESIGNATION (EXAMPLE: 3103 = 310 AMPERE, 600V, 3 CURRENT CARRYING CONDUCTORS, PREFIXES: 'M' INDICATES MEDIUM VOLTAGE, 'CO14' INDICATES CONDUIT ONLY, QUANTITY (1) AND SIZE (4"))
- Z / X — DETAIL REFERENCE:
  Z = DETAIL DESIGNATION
  X = SHEET NUMBER REFERENCE
- Y / X — MECHANICAL SYSTEMS TAG (REFER TO MECHANICAL SHEETS)
  Y = UNIT TYPE
  X = UNIT NUMBER

ELECTRICAL SHEET INDEX

SHEET NO.	SHEET DESCRIPTION
E001	ELECTRICAL GENERAL NOTES AND ABBREVIATIONS
E002	ELECTRICAL DETAILS
E003	LEVEL 2 EV CAR CHARGER SPECIFICATIONS
E004	ELECTRICAL SPECIFICATIONS
E101	ELECTRICAL SITE PLAN

CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE: GENERAL ELECTRICAL NOTES, LEGEND, AND ABBREVIATIONS

90% CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER JEFFREY M. THOMA NO. 20823 ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #23-8146

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DESIGNED BY: CHRIS JOSE
DRAWN BY: TR
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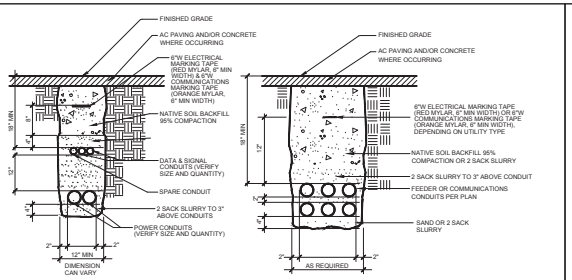
APPROVED BY:
SCALE: AS NOTED
DATE: SEPT 11, 2024
CITY SPECIFICATION NO. 2000577-02
PLAN FILE NO. / LOCATION 2504-05-PS23
SHEET NO. E001

Sep 11, 2024 - 10:30pm - Chris - K:\ENG\2023\23-8146\23-8146_E001 - GENERAL NOTES LEGEND ABBREVIATIONS.dwg

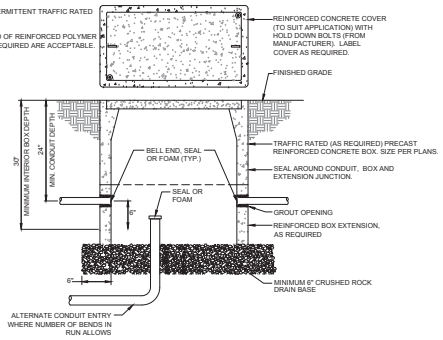


JOINT TRENCH SINGLE TRENCH

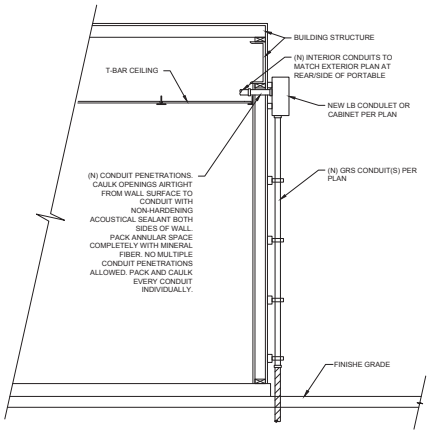
NOTE:
- CONTRACTOR SHALL VERIFY MINIMUM SEPARATION FOR WATER AND GAS WITH MECHANICAL/PLUMBING ENGINEER PRIOR TO EXCAVATION.
- CONDUITS SHOWN ARE TYPICAL. VERIFY EXACT NUMBER OF CONDUITS FROM SITE PLAN AND SINGLE LINE DIAGRAM.
- REFER TO STRUCTURAL SHEETS FOR CONDUIT CLEARANCE REQUIREMENTS TO BUILDING FOOTINGS.
- WHEN POWER IS NOT BELOW COMMUNICATIONS, 12" MIN. HORIZONTAL SEPARATION SHALL BE MAINTAINED FROM ALL OTHER NEW UTILITY CONDUITS.
- REFER TO CEC TABLE 300.5 FOR CONDITIONS THAT MAY PERMIT LESS THAN 18" MINIMUM COVER.

5 TYPICAL CONDUIT IN TRENCH, NON-TRAFFIC AREAS

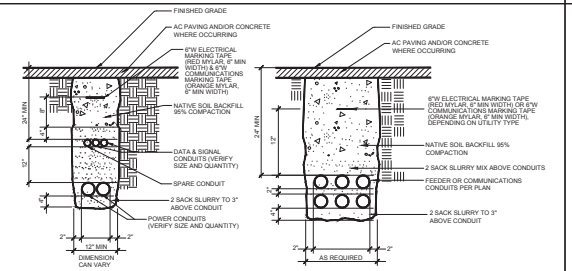
NOTES:
1. PULL BOXES SHALL BE INTERMITTENT TRAFFIC RATED (AS REQUIRED).
2. PULLBOXES CONSTRUCTED OF REINFORCED POLYMER WITH TRAFFIC RATING IF REQUIRED ARE ACCEPTABLE.



3 TYPICAL PULL BOX, 24"X36" AND SMALLER



1 SURFACE CONDUIT AT EXISTING BUILDING



JOINT TRENCH SINGLE TRENCH

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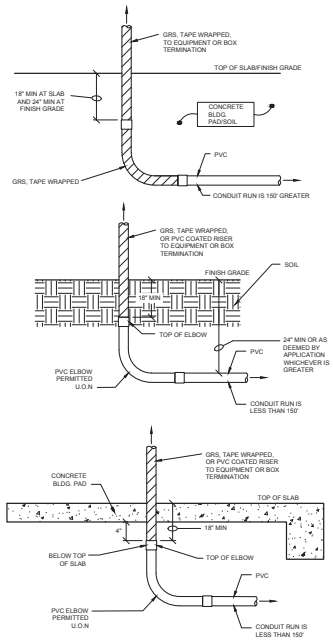
- WHEN POWER IS NOT BELOW COMMUNICATIONS, 12" MIN. HORIZONTAL SEPARATION SHALL BE MAINTAINED FROM ALL OTHER NEW UTILITY CONDUITS.

6 TYPICAL CONDUIT IN TRENCH, TRAFFIC AREA



NOTES:

UNDERGROUND CONDUITS AND TRANSITION TO ABOVE GRADE/SLAB SHALL BE AS FOLLOWS:

1. PVC ELBOWS ALLOWED IF TOP OF ELBOW IS MINIMUM 18" BFG OR BELOW TOP OF SLAB, OTHERWISE GRS, TAPE WRAPPED, ELBOWS ARE REQUIRED.
2. GRS ELBOWS ARE REQUIRED IF CONDUIT RUN IS 150' GREATER.
3. GRS RISERS ARE REQUIRED FROM ELBOW BELOW GRADE TO EQUIPMENT (DEVICE, OUTLET, PANEL, CABINET, ETC.) ABOVE GRADE.
4. GRS ELBOWS/RISERS TO BE TAPED WRAPPED (1/2" LAPPED) TO 3" ABOVE FINISH GRADE OR TOP OF SLAB.

4 TYP. UNDERGROUND CONDUITS AND TRANSITION ABOVE GRADE

(E) "MSB" Load Calculations

			Load	Units
(E) Mechanical Unit AC-1			127.4	kVA
(125% for largest load)				
(E) Mechanical Unit AC-2			10.9	kVA
(E) Elevator			88.6	kVA
(E) Loads at Panels @ 100%			13.34	kVA
(E) Panel "A"	4,000	VA		
(E) Panel "B"	600	VA		
(E) Panel "C"	7,940	VA		
(E) Panel "D"	800	VA		
(N) MOTORIZED GATE			1.500	kVA
(N) Level 2 EV Charger			8.320	kVA
General Lights / Plugs			32.766	kVA
(10,922SF @ 3W/SF)	10922	SF		
	3	W/SF		
Total Load			**282.801**	**kVA**
			785	**A**
(E) "MSB" Service: 800A, 120/208V, 3Ø, 4W				

2 (E)"MSB" LOAD CALCULATIONS

THOMA ELECTRIC, INC.
P.O. Box 1167 - 3562 Empleo St.
San Luis Obispo, CA 93406
Phone: (805) 543-3850
Fax: (805) 543-3829
cad@thomaelec.com

CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE: ELECTRICAL DETAILS

90% CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER — JEFFREY M. JOSE — NO. 20823 — ELECTRICAL — STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #23-8146

DESIGNED BY:	CHRIS JOSE
DRAWN BY:	TR
CHECKED BY:	CJ/JT
APPROVED BY:	
SCALE:	AS NOTED
DATE:	SEPT 11, 2024
CITY SPECIFICATION NO.	2000577-02
PLAN FILE NO. / LOCATION	2504-05-PS23
SHEET NO.	E002

Sep 11, 2024 - 10:30pm - Chris - K:\ENG\2023\23-8146_E002 - ELECTRICAL DETAILS.dwg

CP6000 AC Commercial Station Specifications

Mounting and Functional Interfaces

Connector Type	SAE J1772™
Number of Ports	Single, dual
Mounting	Pedestal, wall
Cable Length	18 ft (5.5 m), 23 ft (7m)
Cable Management	Yes
Authentication and Payment	RFID: ISO 15693, ISO 14443, NEMA EVSE 1.2-2015 (UR) NFC (Tap to Charge) Remote: mobile and in vehicle (if supported by vehicle) Contactless credit card EMV chip credit card (for -CHIP models only)
Locking Holster	Yes
ISO 15118 Protocol	Supported by hardware
Display	Full color 8-inch interactive display with full motion video, UV protection, gesture touch controls, and multi-language support

Safety and Connectivity Features

Ground Fault Detection	20 mA CCID with auto retry
Open Safety Ground Detection	Continuously monitors presence of safety (green wire) ground connection
Plug-Out Detection	Power terminated per SAE J1772™ specifications
Energy Measurement	Meter accuracy 1% Accuracy class 2.0 Acceptance tolerance 1.0%
Power Report/Store Interval	15-minute interval aligned to hour. Responsive to load management signals.
Local Area Network	Wi-Fi 2.4 GHz and 5GHz (802.11 a/n/b/g)
Wide Area Network	LTE Category 4
Network Communication Protocol	OCPP 2.0.1
Ethernet connection	Capable with accessory

Safety and Operational Ratings

Station Enclosure Rating	Type 3R per UL 50E
Safety and Compliance	UL and cUL listed complies with UL 2594, UL 2231-1, UL 2231-2, and NEC® Article 625 Energy Star (Dual Port Only) CTEP

CP6000 AC Commercial Station Specifications

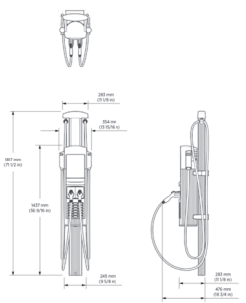
50A	Maximum 50A (Standard)	50A	One 70A branch circuit	70A dual pole (non-GFCI)	50A x 2	Two independent 70A branch circuits	current (20A - 90A) 70A dual pole (non GFCI) x 2
	Maximum 50A (Power Share*)	N/A	N/A	N/A	80A	One 70A branch circuit	70A dual pole (non GFCI)
	Power Select** 16A - 48A (Standard)	16A - 48A	One branch circuit rated 125% of input current (20A - 60A)	Dual pole (non-GFCI) rated 125% of input current (20A - 60A)	16A - 48A x 2	Two independent branch circuits rated 125% of input current (20A - 60A)	Dual pole (non-GFCI) rated 125% of input current (20A - 60A)
	Power Select 16A - 48A (Power Share)	N/A	N/A	N/A	16A - 48A	One branch circuit rated 125% of input current (20A - 60A)	Dual pole (non-GFCI) rated 125% of input current (20A - 60A)
Panel/Breaker GFCI		(CCID)					
Wiring – Standard		3-wire (L1, L2, Earth) No neutral			5-wire (L1, L1, L2, L2, Earth)		
Wiring – Power Share		N/A			3-wire (L1, L2, Earth)		
Station Power		8 W typical standby), 15 W maximum (operation)					
Line to Ground Voltage		120V +/- 10%					

Electrical Output for 80A Station

Electrical Output	SinglePort (AC Voltage 208 / 240V AC)	Dual Port (AC Voltage 208 / 240V AC)
Maximum 80A (Standard)	19.2 kW (240A AC @ 80A)	19.2 kW (240V AC @ 80A)
Maximum 80A (Power Share)	N/A	19.2 kW (240V AC @ 80A) x 1 or 9.6 kW (240V AC @ 40A) x 2
Power Select 16A - 72A (Standard)	3.8 kW - 17.3 kW (240V AC @ 16A - 72A)	3.8 kW - 17.3 kW (240V AC @ 16A - 72A) x 2

CP6000 AC Commercial Station Specifications

Wall Mount



CP6000 AC Commercial Station Specifications

	80A Dual port, pedestal mount, 23 ft cable, EMV chip reader	CP6021B-80A-L7-CHIP
	80A Single port, pedestal mount, 23 ft cable, EMV chip reader	CP6011B-80A-L7-CHIP
	50A Dual port, pedestal mount, 23 ft cable	CP6021B-50A-L7
	50A Single port, pedestal mount, 23 ft cable	CP6011B-50A-L7
	50A Dual port, pedestal mount, 23 ft cable, EMV chip reader	CP6021B-50A-L7-CHIP
	50A Single port, pedestal mount, 13 ft cable, EMV chip reader	CP6011B-50A-L7-CHIP
	80A Dual port, wall mount, 23 ft cable	CP6023B-80A-L7
	80A Single port, wall mount, 23 ft cable	CP6013B-80A-L7
	80A Dual port, wall mount, 23 ft cable, EMV chip reader	CP6023B-80A-L7-CHIP
	80A Single port, wall mount, 23 ft cable, EMV chip reader	CP6013B-80A-L7-CHIP
	50A Dual port, wall mount, 23 ft cable	CP6023B-50A-L7
	50A Single port, wall mount, 23 ft table	CP6013B-50A-L7
	50A Dual port, wall mount, 23 ft cable, EMV chip reader	CP6023B-50A-L7-CHIP
	50A Single port, wall mount, 23 ft cable, EMV chip reader	CP6013B-50A-L7-CHIP
Other	Bollard Concrete Mounting Kit	CP6K-CMT-NA

Software and Services

Description	Order Code
ChargePoint Enterprise Plan	CPCLD-ENTERPRISE-n*
ChargePoint Fleet Commercial	CPCLD-COMMERCIAL-n*
ChargePoint Assure	CP6000-ASSURE-n*
Station Activation and Configuration	CPSUPPORT-ACTIVE
ChargePoint Site Validation	CPSUPPORT-SITEVALID
ChargePoint Installation and Validation	CP6000-INSTALLVALID

Note: All CP6000 stations require a network service plan per port.
*Substitute n for desired years (1, 2, 3, 4 or 5 years)

chargepoint

ChargePoint® AC Commercial Station

Specifications and Ordering Information

Dual port, pedestal mount. 18 ft cable

CP6000 AC Commercial Station Specifications

Station Surge Protection	6 kV @ 3,000A. In geographic areas subject to frequent thunderstorms, supplemental surge protection at the service panel is recommended.
EMC Compliance	FCC Part 15 Class B
Operating Temperature	-40°C to 50°C (-40°F to 122°F)
Non-Operating temperature	-40°C to 85°C (-40°F to 185°F)
Terminal Block Temperature Rating	105°C (221°F)
Operating Humidity	Up to 85% @ 50°C (122°F) non-condensing
Non-Operating Humidity	Up to 95% @ 50°C (122°F) non-condensing

ChargePoint, Inc. reserves the right to alter product offerings and specifications at any time without notice and is not responsible for typographical or graphical errors that may appear in this document.

CP6000 AC Commercial Station Specifications

Power Select 16A - 72A (Power Share)	N/A	3.8 kW - 17.3 kW (240V AC @ 16A - 72A) x 1 or 1.9 kW - 8.6 kW(240V AC @ 8A - 36A) x 2

Electrical Output for 50A Station

Electrical Output	SinglePort (AC Voltage 208 / 240V AC)	Dual Port (AC Voltage 208 / 240V AC)
Maximum 50A (Standard)	12.0 kW (240A AC @ 50A)	12.0 kW (240V AC @ 50A)
Maximum 50A (Power Share)	N/A	12.0 kW (240V AC @ 50A) x 1 or 8.0 kW (240V AC @ 25A) x 2
Power Select 16A - 48A (Standard)	3.8 kW - 11.5 kW (240V AC @ 16A - 48A)	3.8 kW - 11.5 kW (240V AC @ 16A - 48A) x 2
Power Select 16A - 48A (Power Share)	N/A	3.8 kW - 11.5 kW (240V AC @ 16A - 48A) x 1 or 1.9 kW - 5.8 kW (240V AC @ 8A - 24A) x 2

CP6000 AC Commercial Station Specifications

General Specifications

Electrical Input

The CP6000 AC Commercial Station supports flexible electrical input/output settings up to 80A to fit your fueling needs, whether for a workplace, multi-family dwelling, or other application.

Power Select allows stations to be installed and configured for current lower than the maximum 80A. Power Select current options include 16A, 24A, 32A, 40A, 48A, 50A, 56A, 64A, and 72A.

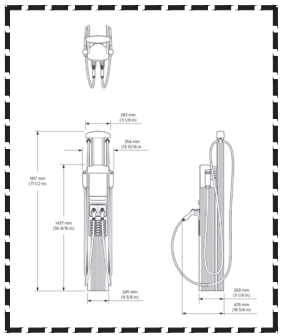
Power Share allows a dual-port station to share power from a single circuit across two ports, adjusting power depending on whether one or both are charging. Standard wiring uses an independent circuit for each port. Power Share can be used in combination with Power Select.

Station	Electrical Input		Single Port (AC Voltage 208/ 240V AC)		Dual Port (AC Voltage 208 / 240V AC)		
			Input Current	Input Power Connection	Required Service Panel Breaker	Input Current	Input Power Connection	Required Service Panel Breaker
80A	Maximum 80A (Standard)	80A	One 100A branch circuit	100A dual pole (non-GFCI)		80A x 2	Two independent 100A branch circuits	100A dual pole (non GFCI) x 2 or 100A dual pole (non GFCI)
	Maximum 80A (Power Share*)	N/A	N/A	N/A		80A	One 100A branch circuit	
	Power Select** 16A - 72A (Standard)	16A - 72A	One branch circuit rated 125% of input current (20A - 90A)	Dual pole (non-GFCI) rated 125% of input current (20A - 90A)		16A - 72A x 2	Two independent branch circuits rated 125% of input current (20A - 90A)	Dual pole (non-GFCI) rated 125% of input current (20A - 90A) x 2
	Power Select 16A – 72A (Power Share)	N/A	N/A	N/A		16A - 72A	One branch circuit rated 125% of input current (20A - 90A)	Dual pole (non-GFCI) rated 125% of input

CP6000 AC Commercial Station Specifications

Architectural Drawings and Dimensions

Pedestal Mount



CP6000 AC Commercial Station Specifications

Ordering Information

The order codes below represent specific product configurations. Please contact ChargePoint Sales for additional information. Specify model number followed by the applicable code(s).

The order code sequence is Model-Options. Software, Services and Other are ordered as separate line items.

Please note that charging stations without EMV-Chip readers or distributor may not be publicly visible or discoverable on the ChargePoint map. Please see below for applicable dates.

- Level 2 (AC) stations without EMV-Chip readers: installed/activated on/after July 1, 2023.
- Direct Current Fast Charging (DCFC) station without EMV-Chip readers: installed/activated on/after January 1, 2022.

(Reference: 13 CCR § 2366.2. Payment Method Requirements for Electric Vehicle Supply Equipment)

Hardware

Description		Order Code
Model	80A Dual port, pedestal mount, 18ft cable	CP6021B-80A-L5.5
	80A Single port, pedestal mount, 1 ft cable	CP6011B-80A-L5.5
	80A Dual port, pedestal mount, 18ft cable, EMV chip reader	CP6021B-80A-L5.5-CHIP
	80A Single port, pedestal mount, 1 ft cable, EMV chip reader	CP6011B-80A-L5.5-CHIP
	50A Dual port, pedestal mount, 18ft cable	CP6021B-50A-L5.5
	50A Single port, pedestal mount, 1 ft table	CP6011B-50A-L5.5
	50A Dual port, pedestal mount, 18ft cable, EMV chip reader	CP6021B-50A-L5.5-CHIP
	50A Single port, pedestal mount, 1 ft cable, EMV chip reader	CP6011B-50A-L5.5-CHIP
	80A Dual port, wall mount, 18 ft cable	CP6023B-80A-L5.5
	80A Single port, wall mount, 18 ft table	CP6013B-80A-L5.5
	80A Dual port, wall mount, 18 ft cable, EMV chip reader	CP6023B-80A-L5.5-CHIP
	80A Single port, wall mount, 18 ft table, EMV chip reader	CP6013B-80A-L5.5-CHIP
	50A Dual port, wall mount, 18 ft cable	CP6023B-50A-L5.5
	50A Single port, wall mount, 18 ft table	CP6013B-50A-L5.5
	50A Dual port, wall mount, 18 ft cable, EMV chip reader	CP6023B-50A-L5.5-CHIP
	50A Single port, wall mount, 18 ft table, EMV chip reader	CP6013B-50A-L5.5-CHIP
	80A Dual port, pedestal mount, 23ft cable	CP6021B-80A-L7
	80A Single port, pedestal mount, 23 ft cable	CP6011B-80A-L7

FURNISHED AND INSTALL NEW LEVEL 2 FROM CHARGE POINT PER CITY OF SLO REQUIREMENTS. 50AMP DUAL PORT, PEDESTAL MOUNT, 18FT CABLE WITH EMV CHIP READER AND POWER MANAGEMENT KIT FOR LOAD SHARING, BOLLARD CONCRETE MOUNTING KIT. CHARGEPOINT ASSURE AND STATION ACTIVATION AND CONFIGURATION SOFTWARE AND SERVICE

CITY OF SAN LUIS OBISPO

PROJECT TITLE:
1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE:
LEVEL 2 CAR EV CHARGER SPECIFICATIONS

90% CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. THOMA
NO. 20823
ELECTRICAL
STATE OF CALIFORNIA

EXPIRES: 09/30/26
THOMA #23-8146

DESIGNED BY: CHRIS JOSE
DRAWN BY: TR
CHECKED BY: CJ/JT
APPROVED BY:
SCALE: AS NOTED
DATE: SEPT 11, 2024
CITY SPECIFICATION NO.: 2000577-02
PLAN FILE NO. / LOCATION: 2504-05-PS23
SHEET NO.: E003

THOMA ENGINEERING
THOMA ELECTRIC, INC.
P.O. Box 1167 - 3562 Empleo St.
San Luis Obispo, CA 93406
Phone: (805) 543-3850
Fax: (805) 543-3829
cad@thomaelec.com

Sep 11, 2024 - 10:30pm - Chris - K:\ENG\2020\23-8146_E003 - LEVEL 2 EV CAR CHARGER SPECIFICATIONS.dwg

SECTION 26 0500 - COMMON WORK RESULTS FOR ELECTRICAL
PART 1 - GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
A. This Section Includes:
1. Materials and equipment shall be furnished and installed in support of electrical work described in these plans and specifications including but not limited to, raceways, boxes, enclosures, feeders, branch circuiting, supports, terminal cabinets, sleeves, gutters, panels, transformers, switchgear, lighting fixtures, controls, relays, contactors, in order to complete and make fully functional the systems described.
2. Raceways for all power and communications systems as shown and/or required. Duct banks shall include all trenching, racking, conduit, concrete, backfill, boxes, pads, substructures required for a fully developed and useable pathway for cables, conductors, as shown on site, etc.
3. Allocation of time to adequately train the Owner on the use and operation of all systems installed within the facility or on the property. Minimum two week advance notice shall be coordinated with the Owner and his representatives. Training shall be as outlined in individual system specifications identified to follow.
B. Related Sections Under Other Divisions:
1. Painting of electrical equipment where exposed and required by the Architect to be painted as described elsewhere in the specification.
2. Access Control and Security Camera System: Shall be installed by Owner's vendor. Contractor shall provide conduits, boxes, stubs to accessible ceilings.
1.3 SYSTEM DESCRIPTION
A. The electrical plans indicate the general layout and arrangement; the architectural drawings and field conditions shall determine exact locations. Field verify all conditions and modify as required to satisfy design requirements as well as code minimums. Maintain all required working clearances as described in CEC Article 110 as well as other applicable articles.
B. Discrepancies shall be brought immediately to the attention of the Architect for clarification. The Architect shall approve any changes. Prior to rough-in, refer to architectural plans that shall take precedence over electrical plans with respect to locations.
C. Verify all power and communications utility company requirements prior to commencement of utility work. Make proper adjustments to the construction to satisfy the serving utility requirements if they differ from the construction documents. It shall be the Contractor's responsibility to contact each utility company for obtaining finalized utility design drawings and/or approval, and for scheduling inspection of utility infrastructure installations.
D. Charges imposed by the electric and communications utility companies shall be paid by Owner directly to utility companies.
1.4 SUBMITTALS AND SHOP DRAWINGS
A. Before construction, submit in (accordance with the General Conditions of this Specification) a complete list of all materials proposed to be furnished and installed under this section. Any material procured without review and approval of the engineer and/or owner's representative, will solely be at the contractor's risk.
B. Manufacturers' specifications, catalog cuts and shop drawings as required to demonstrate compliance with the specifications. Identify specific intended use for each component where submittal may be ambiguous. Submit entire bound submittal at one time; partial submittals will not be accepted. At a minimum, submittals will be required for the following:
1. 20a/1p breaker.
2. Conduit including all fittings, etc.
3. Wiring and cable, terminations, etc.
4. Fire rating penetration materials, details, etc.
C. The intent of these specifications is to establish a standard of quality for materials and equipment. Therefore, some items are identified by manufacturer or trade name designation. Substitutions shall be subject to the Architect's approval. Samples of the proposed and substitute materials may be required for inspection prior to approval. Costs, if any, for evaluation of substitutions shall be the Contractor's responsibility. The decision of the Architect shall be final. Where the substitution will affect other trades, coordinate all changes with those trades concerned and pay any additional costs incurred by them as a result of this substitution. Approval of substitutions shall not relieve the Contractor from providing an operational system in accordance with all applicable codes and ordinances.
1. Provide seismic details of seismic restraints and anchors; including number, size and locations for each piece of equipment.
1.5 DELIVERY, STORAGE AND HANDLING
A. Storage of equipment for the job is the responsibility of the Electrical Contractor and shall be scheduled for delivery to the site, as the equipment is required. Damage to the equipment delivered to the site or in transport to the job shall be the responsibility of the Electrical Contractor.
PART 2 - PRODUCTS
2.1 MATERIALS
A. Materials shall be new and bear the label of or be listed by a nationally recognized testing laboratory. The quality and suitability of all materials shall conform to the standards and practices of this trade.
B. Supplied materials shall be of a current manufactured product line. Discontinued products are not acceptable. Where products are identified on the contract documents by part number, supply the current product model or series which meets the specification and intended use of the specified component.
2.2 SUPPORTING DEVICES
A. Hangers: Kindorf B-905-2A Channel, H-119-D washer, C105 strap, 3/8" rod with ceiling flange.
B. Concrete Inserts: Kindorf D-255, cast in concrete for support fasteners for loads up to 800 lbs.
C. Pipe Straps: Two-hole galvanized or malleable iron.
PART 3 - EXECUTION
3.1 INSTALLATION
A. Professionalism and appearance of installations shall be in accordance with accepted practices of this trade. Installation methods shall conform to manufacturers' specifications and recommendations. The Contractor shall man the job with qualified journeymen and helpers in this trade for the duration of the job. It is the Contractor's responsibility to communicate with and keep the job superintendent appraised of changes or clarifications, etc.
B. Employment of any person on any job in the capacity of an electrician is not permitted unless such person has qualified for and holds a valid Journeyman Electrician Pocket Card or General Journeyman Electrician Certificate issued by the State of California Division of Apprenticeship Standards except, Contractor may employ electrical helpers or apprentices on any job of electrical construction, new or existing, when the work of such helpers or apprentices is performed under the direct and constant personal supervision of a journeyman electrician holding a valid Pocket Card accepted by the State of California Division of Apprenticeship Standards.
1. Each Pocket Card carrying journeyman electrician will be permitted to be responsible for the quality of workmanship for a maximum of one helper or apprentice during any same time period, provided the nature of work is such that good supervision can be maintained and the quality of workmanship is the best, as expected by Owner and implied by the latest edition of the National Electrical Code.
2. Before each journeyman electrician commences work, deliver to Owner at the project site, a photocopy of the journeyman's valid Pocket Card.
C. Materials shall be installed in accordance with the manufacturers' specification and recommendations. They must conform to the approval AHJ adopted codes and standards, but not less than the 2019 CEC and all applicable codes and standards, including but not necessarily limited to California Code of Regulations Title 24, NFPA, National Electrical Manufacturers Association, ANSI, CBC, and any other adopted ordinances of applicable agencies having jurisdiction. Refer to general conditions of specifications.
D. Electrical Contractor shall lay work out in advance in order to avoid unnecessary cutting, chasing, and drilling of floors, walls, ceilings and other surfaces. Work of this nature shall be carefully done so as not to damage work already performed by other trades. Any damage which results must be properly repaired at no extra cost to the Owner. Such alterations shall not depreciate the integrity of the structure. Approval for cuts or penetrations in structural members shall be by the Architect.
E. Coordinate work with other trades as required to eliminate any delays during construction. Coordinate changes with other prime contractors to avoid construction conflicts.
F. Engineer's Field Observation: Site visits during construction for field observations and reports will be conducted by electrical engineer when directed by the Architect. A list of items that need to be addressed will be submitted to the Architect for forwarding to the Contractor. A written response to all items shall be submitted for Owner's review once complete. When Electrical Engineering representative performs a field observation, the Electrical Contractor shall be present and available to remove equipment covers as needed.
G. Drawings of Record: Provide a full and accurate set of field record drawings marked up in a neat and understandable manner submitted to the Owner Representative, Construction Manager, or Architect upon completion of the work and prior to issuance of a certificate of completion. The drawings shall dimension all electrical facilities including but not limited to underground conduit, vaults, boxes as well as conduit routing scaled to within 12" of actual field conditions and shall be kept up to date on a daily basis reflecting changes or deviations. Electrical facilities shall be accurately drawn on the plan to scale. Refer to the general conditions of these specifications for additional requirements. Record drawings shall be required to identify both horizontal and vertical dimensions to visible and fixed points such as concrete, asphalt, buildings, sidewalks, etc.
H. Identification: Provide engraved laminated plastic nameplates for all switchboards, panelboards, fire alarm terminal cabinets, telephone and cable television backboards, main devices, control panels, time clocks, contactors and safety disconnect switches accurately identifying each device. Labels shall be attached to the equipment by means of screws or rivets. Self-adhering labels will not be acceptable. Refer to Section 26 0553, IDENTIFICATION OF ELECTRICAL SYSTEMS.
I. Safety: The Electrical Contractor is responsible to maintain equipment in a safe and responsible manner. Keep dead front equipment in place while equipment is energized. Conduct construction operations in a safe manner for employees as well as other work persons or anyone visiting the job site. Provide barriers, trench plates, flags, tape, etc. The Contractor shall hold all parties harmless of negligent safety practices that may cause injury to others on or near the job site.
J. Guarantees: Equipment and labor shall be guaranteed and warranted free of defects, unless otherwise stated to be more restrictive, for a period of one year from the date of final acceptance by the Owner. A written warranty shall be presented to the Architect at the time of completion prior to final acceptance. Equipment deemed to be damaged, broken or failed should be repaired or replaced at no additional cost to the Owner. Materials or system requiring longer than a one-year warranty as described herein shall be separately warranted in separate letters of guarantee stating the duration of warranty.
K. Operating and Installation Manuals: Provide two copies each of manuals, operating and installation instructions for equipment indicated in submittal packages. Instruct the Owner's representative as to the operation and location of equipment necessary to allow them to operate the facility upon final acceptance. This instruction period shall be prearranged with the Owner's representative prior to occupancy of the facility and the weeks prior to training scheduled.

END OF SECTION 26 0500

SECTION 26 0533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS
PART 1 - GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
A. Section Includes:
1. Conduit and fittings.
2. Weatherproof outlet boxes.
3. Junction and pull boxes.
4. Cabinets, termination cabinets.
5. Gutters.
6. Concrete boxes and vaults.

B. Related Work:
1. Installation of all wire, cable, conductor, boxes/gutters, pull ropes, fiber optic cable raceway, conduit, innerduct, cable sleeve and duct as described on the plans and/or as specified here-in. This scope shall include pathways to be installed underground on site and offsite, underslab, above grade, both concealed and exposed, overhead concealed and exposed as appropriately applied. Raceways/boxes shall be installed in accordance with their intended and allowed uses and as specified here-in whichever is more restrictive. Size and capacity of all raceway/boxes shall be as specified here-in or as depicted on the drawings, but shall not be less than that required by code. Larger raceway sizes may be specified than code would permit. The specifications shall govern.
2. Listed products for termination, coupling, extending, benching supports of raceways shall be used.
3. Raceways/boxes described by this section shall include, but not be limited to, power for site utilities and lighting, site and building communications, controls, fire alarm, security, access control, sound systems, data system, energy management systems, power distribution, lighting, lighting controls, video, CATV, voice communications, intercom, nurse call, HVAC and other building low voltage/communications systems controls as may be required. Raceways, boxes and duct paths required for utility companies shall be installed per plans unless utility company requirements are more restrictive at which time those requirements shall take precedence.
4. Protection of and cleanliness of pathways and raceways must be assured during the construction process in order to eliminate the possibility of debris entering the conduit, duct, pathway resulting in decreased wire capacity and potential damage to installed conductors and cables.
5. Pathways are shown in a diagrammatic way and are generally accurate as to routing, however, it is the Contractor's responsibility as a means and methods process to coordinate with all other trades that require space within a building. The Contractor shall obtain approval for installation of raceways routing through structural footings, retaining walls, columns, beams, purlins, grade beams, etc.
6. It is the Contractor's responsibility to insure that all raceway and boxes systems penetrate fire assemblies and sound rated assemblies in an approved manner using the appropriate and listed products for the purpose.
7. Trenching and backfilling for all underground conduit systems installed by the Electrical Contractor shall be the responsibility of the Contractor. Conduits shall have minimum cover requirement of 36" below finish grade with the exception of site lighting conduits which may be 24" below finish grade minimum. More stringent depth requirements may be imposed by the local agency and utility company and shall be adhered to, and / or this specification or as detailed on the plans. Joint trenching may be utilized where practicable and where permitted by this specification. Concrete, native material and sand shall be used as backfill material and shall be compacted in accordance with and coordinated with the grading and site preparation requirements. Conduits shall rest in a minimum of 4" bed of sand prior to backfill and compaction. Locations of existing underground (UG) utility systems shall be determined by calling Underground Service Alert (USA) at least 48 hours prior to any excavation. Also refer to Section 26 0546.13, ELECTRIC UTILITY SYSTEMS.
8. Minimum conduit size shall be 1/2" except if plan shows or code requires larger size. Exception: Use minimum 3/4" for underslab and below grade applications outside of building exterior walls.
9. All electrical, control, communications systems shall be installed in [metallic] conduit system. This shall include but not be limited to all systems described in Section B.3 above, except for voice and data systems which shall be installed as described on these plans and as specified here-in but shall not be less than the recommendations of EIA/TIA standards.
10. All line voltage wiring within the building shall be installed in metallic conduit.
11. All conduit, concrete pads, underground concrete or fiberglass substructures shall be furnished and installed with the approved materials and type for the application. Provide proper traffic control during construction as well as barriers and protection of all excavations and trenching.
12. Empty or future conduits shall be properly plugged with plastic caps or inserts with a 3/8" polyethylene pull rope. Plastic or "duct" tape will not be acceptable.
13. Exterior installations: After conductors are installed, seal conduit ends to prevent entrance of foreign material using pliable duct seal, caps or waterproof expanding foam.
14. All low voltage systems including intercom, fire alarm, public address, etc. shall be in dedicated conduit systems. Voice / Data and Direct Digital Control (DDC) systems for HVAC cabling shall be routed as specified in Section 27 1300, INTERCOMMUNICATIONS SYSTEMS and as recommended by EIA/TIA standards. It shall be the contractor's responsibility to provide raceway down walls to outlet boxes and to provide sleeves across inaccessible ceiling spaces.
15. Underground conduits entering building shall have the open end of conduit within building above the elevation of the conduit outside the building such that water cannot enter building through conduit. If such a condition exists, a pull box outside of building footprint shall be installed in conduit route before conduit enters building whereby top of pull box is below finish floor of building and moisture may exit box before entering building.
16. No single conduit run of any type shall exceed 300 degrees of radius bend from termination box to termination box.
17. Separate Raceway System: Provide a separate dedicated raceway system for each system installed, do not combine different systems into a raceway or cable tray system, unless otherwise noted or allowed.
18. Spare, Future Conduits: Conduits labeled conduit only, spare, or for future use, shall be provided with a pullrope, capped at each end, labeled as spare with destination marked, and turned over to the Owner in an unused state. Contractor shall not utilize these conduits for the installation of cabling or conductors as part of this scope of work. Contractor to verify and install at no additional cost to the Owner, additional conduits as required for the installation of the systems being installed.
19. Outlet System: Provide electrical boxes and fittings as required for a complete installation. Including but not limited to outlet boxes, junction boxes, pull boxes, bushings, locknuts, covers and all other necessary components.
20. Code Compliance: Comply with CEC as applicable to construction and installation of electrical boxes and fittings and size boxes according to CEC 312, 314 and 366 except as noted otherwise.
21. Outlets to be flush mounted: Maintain integrity of insulation and vapor barrier. Unless otherwise noted, flush mount all outlet boxes.
22. Provide putty pads of proper type around outlet boxes and/or as detailed on plan to meet sound transmission restrictions and fire ratings of walls.
1.3 SUBMITTALS
A. Provide Shop Drawings and Product Data for the Following Equipment:
1. Conduit and fittings.
2. Junction and pull boxes.
3. Cabinets, termination cabinets.
4. Gutters.
5. Concrete boxes and vaults.
6. Putty pads.
7. Raceways
1.4 REGULATORY REQUIREMENTS
A. Conform to requirements of the CEC, latest adopted version with amendments by local AHJs.
B. Furnish products listed by UL or other independent and nationally recognized testing firm.
PART 2 - PRODUCTS
2.1 MATERIALS
A. Heavy wall Rigid Non-Metallic Conduit, shall be PVC schedule 40 manufactured in accordance with NEMA Standard TC-2, UL-651 and WC 1094A specifications.
B. Extra heavy wall non-metallic conduit, shall be PVC schedule 80 manufactured in accordance with NEMA Standard TC-2, UL-651 and WC 1094A specifications.
C. Galvanized Rigid Steel (GRS) conduit shall be hot dipped galvanized, zinc coated and shall comply with Underwriters Laboratories UL-6, ANSI Specification C-80.1 and Federal Specification WW-C-581E.
D. Electrical Metallic Tubing (EMT) shall be zinc coated, with a protective coating applied to the inside surface and shall comply with Underwriter Laboratories UL-797 ANSI Specification C-80.3 and Federal Specification WW-C-563A.
E. Electrical Non-Metallic Tubing (ENT), shall be listed to requirements of U.L. 1653, in accordance with CEC Article 362, and meet requirements of BI National Standard CAN/CSA-C22.2 No. 227.1-U.L. 1653. ENT shall be rated for 90 degrees C conductors and shall be recognized for use in 2-hour fire resistance non-load bearing and load bearing wall assemblies. ENT shall be recognized for through-penetration firestop systems as classified to meet U.L. and ICC building codes.
F. Manufacturers:
1. Outlet Boxes: Bowers, Raco, Steel City or equal.
2. Weatherproof Outlet Boxes: Bell, Red Dot, [Carlon] or equal.
3. Floor Boxes: Wiremold/Walker, Hubbell, Steel City, or equal.
4. Junction and Pull Boxes: Circle AW, Hoffman, Wireguard or equal.
5. Box Extension Adapter: Bell, Red Dot, [Carlon] or equal.
6. Conduit Fittings: O-Z Gedney, Thomas & Betts, or equal.
7. Vaults: Christy, Brooks, Utility Vault or equal.
8. Putty pads: 3M, Hilti, or equal.
9. Heavy wall rigid non-metallic conduit, Carlon, Certainteed, R&G Sloane or equal.
10. Extra heavy wall non-metallic conduit, Carlon, Certainteed, R&G Sloane or equal.
11. Galvanized Rigid Steel (GRS) conduit shall be hot dipped galvanized, zinc coated and shall comply with Underwriters Laboratories UL-6, ANSI Specification C-80.1 and Federal Specification WW-C-581E.
12. Electrical Metallic Tubing (EMT) shall be zinc coated, with a protective coating applied to the inside surface and shall comply with Underwriter Laboratories UL-797 ANSI Specification C-80.3 and Federal Specification WW-C-563A.
13. Flexible Metal Conduit (FMC), Alflex, American Flexible Conduit or equal.
14. Liquid tight flexible metal conduit, Anacanda (type UA), Electri-flex Liquatite or equal.
15. Exterior In-Grade Boxes for Non-Utility Company, Precast concrete or polymer concrete, Utility Vault and Christy.
2.2 JUNCTION AND PULL BOXES
A. Construction: Provide galvanized sheet steel junction and pull boxes, with screw-on covers; of the type shape and size, to suit each respective location and installation; with welded seams and equipped with steel nuts, bolts, screws and washers.
B. Location:
1. Install junction boxes above accessible ceilings for drops into walls for receptacle outlets from overhead.
2. Install junction boxes and pull boxes as required to facilitate the installation of conductors and limiting the accumulated angular sum of bends between boxes, cabinets and appliances to 300 degrees.
3. Locations: Junction boxes shall be located only where necessary and only in equipment rooms, closets, and accessible attic and underfloor spaces. A horizontal distance of 24" shall separate outlet boxes on opposite sides of occupancy separation walls, fire-rated walls or partitions.
4. Labeling: Junction box covers shall be marked with indelible ink indicated the circuit numbers passing through the box.
2.3 EXTERIOR IN-GRADE BOXES FOR NON-UTILITY COMPANY USE SHALL BE:
A. Precast concrete or polymer concrete type with full bottoms and draining into gravel drywell. . Open bottom splice/pull boxes 24" x 36" and smaller shall be open bottom, with minimum 12" of gravel below for drainage.
B. Flushmount in hardscape and 1" above grade in softscape.
C. Provided with correct traffic type lid, i.e., full vehicular, intermediate incidental vehicular or pedestrian-rated as applicable stamped with "ELECTRIC", "LIGHTING", COMMUNICATIONS", etc. cover identification as shown on the drawings or as applicable. All boxes or vaults located in streets, driveways, sidewalks wider than 8', and turf areas where mowing takes place shall be traffic rated.
D. Provided with brass hold-down bolts in cover.
E. Provided with necessary box extensions to gain proper depth.
F. Seal all conduit in underground boxes with duct seal after conductors have been installed.
2.4 PUTTY PADS
A. Intumescent moldable firestop putty designed to protect electrical outlet boxes.
B. Designed to install around outside of outlet boxes.
PART 3 - EXECUTION
3.1 INSTALLATION
A. Conduit systems listed below are for use in installations where they are permitted to be used by CEC and/or other occupancy restrictions. The below installation methods do not intend to suggest that these materials be installed in conflict with any applicable code. Special attention to applications shall be made in building types such as Educational, Health Care, wet location, hazardous locations, assembly occupancy and multi-story, but not limited to these. Requirements which are more restrictive than the CEC may be called for by the drawings and / or these specifications. These requirements must be adhered to. The Electrical Contractor shall be responsible to use the proper conduit system for the application. Exposed conduit is not allowed below ceilings or above slab of floor, without the permission and approval of the Architect. All conduits shall be concealed except in electrical and telecommunication rooms or where shown to be surface mounted. Exposed conduit (where allowed) shall be run square and plumb with building lines in an approved manner. Support roofmount conduits, where allowed, with minimum 12" wide redwood blocks set in mastic unless otherwise detailed in roof requirements or as specified in roofing specification, by the Architect. Strap conduits to blocks with proper sized conduit straps. Spacing of support shall be a minimum as provided for in the CEC. All exposed conduit mounted below 8' above finished grade shall be strapped at a minimum of 5' spacing.
B. Non-Metallic Rigid Conduit shall be used in concrete slabs, below concrete slabs on grade, or underground outside of a building slab or foundation. Maintain minimum depth requirements and cover with appropriate fill material. Minimum 4" of bedding and cover of backfill material 1/4" size grain and smaller maximum. Conduit shall be heavy wall Schedule 40 or 80, rigid PVC only. Rigid utility P&C duct shall not be used in any application. Properly sized grounding conductors shall be installed per CEC article 250, in all non-metallic conduit branch circuit and feeder runs. PVC conduit shall be formed or field bent only with the use of properly approved bending tools such as to not decrease the internal bore of the conduit. All conduits shall be cut square and reamed of burrs. Approved and compatible glue shall be used on all PVC fittings to attain watertight joints. All non-metallic conduit runs over 150' in length and over 1 1/4" trade size conduit shall utilize galvanized rigid steel elbows.
C. Galvanized Rigid Steel (GRS) conduit shall be used where exposed less than 8'-0" above finished grade to 18" below finished grade and where subject to physical damage. Conduits shall be cut square and reamed to remove burrs and sharp edges. Strap conduit below 8' above grade at 5' intervals. Unless otherwise noted, threadless setscrew and threadless weathertight fittings may be used in lieu of threaded fittings. All threaded ends entering a junction box of any type shall require one locknut on the inside and one on the outside of the enclosure and be provided with a plastic bushing or grounding bushing where necessary for proper grounding. Where exposed to moisture, a watertight hub or other approved method shall be required. All conduits shall be stubbed up straight and uniform into junction boxes, panels, cabinets, etc., and shall be (GRS) properly supported and strapped. All GRS conduit located below grade, shall be tape wrapped.
D. Electrical Metallic Tubing (EMT) shall be used as allowed by code and as permitted by this specification. It shall not be in contact with soil or the concrete slab on the ground floor of any structure. Connectors and couplings shall be [steel or diecast] [insulated/non-insulated] set screw type where installed in indoor dry locations not subject to moisture. Where the potential for moisture is present, compression type weathertight fittings are required. One hole conduit straps are permitted from 1/2" to 1" and two hole conduit straps are required for size 1 1/4" and larger. EMT shall not be allowed in areas subject to severe physical damage. Install copper ground wire sized per CEC 250-122 in all EMT conduits.
E. where concealed in building construction or above dropped ceilings, but shall meet the following criteria: No individual circuit path from distribution panel to last device shall exceed a cumulative length of 30' of flexible conduit from start to end. Flexible conduit shall not exceed a total directional change of 270 bending degrees in any one run between conduit terminations. Squeeze type or Jake type steel flex fittings of a grounding type are required. Flexible conduit must be supported in accordance with CEC. Where exposed to the weather, moisture, or spray down flexible conduit shall be of the liquidtight type. Fittings shall be manufactured for use with liquidtight flexible conduit. All motor connections shall be made with liquidtight flex. Flexible conduit may not be used where exposed except for last 2' of equipment connection and unless otherwise noted or approved. A copper ground wire sized per CEC 250-122 shall be installed in all flexible conduit runs. Flexible conduit may not be used exposed. Weatherproof liquid tight conduit shall not be used at roof level for equipment connections with lengths exceeding 24" nor shall it be used to circumvent a rigid conduit system in a horizontal direction. Connect recessed lighting fixtures to conduit runs with a maximum of 6' of flexible metal conduit extending from junction box to fixture. "Master" "Slave" fixtures are permitted to use manufactured flexible cable of longer dimension up to 12' between "Master" and "Slave" only and only as a U.L. listed system component.
F. Underground conduits and transition to above grade/slab shall be as follows:
1. PVC elbows allowed if top of elbow is minimum 18" BFG or below top of slab, otherwise GRS elbows are required.
2. GRS elbows are required if conduit run is 150' or greater.
3. GRS risers are required from elbow below grade to equipment (device, outlet, panel, cabinet, etc.) above grade.
4. GRS elbows/risers to be PVC coated or 10 MIL taped wrapped (1/2" lapped) to 3" above finish grade or top of slab.
G. Conduit Supports: Conduit runs may be supported by one-hole and two-hole straps or supports as manufactured by Unistrut, Minerallac, Caddy or equals. Supports may be fastened by means of anchors, shields, beam clamps, toggle bolts, or other approved methods appropriate for the application and size of conduit. Pipe nailers (J-hooks) may only be used for 1" conduit and smaller and only in wood frame construction. Conduit support methods are subject to review by the engineer and authority having jurisdiction for adequacy. Installations deemed inadequate shall be corrected by the contractor at no cost to the Owner.
H. Bends and offsets shall be made with approved tools for the type of conduit being utilized. Bends shall be made without kinking or destroying the smooth bore of the conduit. Parallel conduits shall be run straight and true with bends uniform and symmetrical. Minimum radii shall be per CEC 344-24.
I. Conduit Stub-outs below grade shall be capped with plastic cap, and identified by placing a pull box marked with correctly identified utility such as "Elec", "Tel", etc. Dimension for exact location on field record drawings. Provide lids for proper field application (i.e. traffic, incidental, pedestrian).
J. Conduit Seals: Where below grade conduits enter structure through slab or retaining wall of building or basement, seal the inside of each conduit as follows:
1. Provide damming material around conductors 3" into conduit.
2. Fill 3" of conduit with 3M #2123 sealing compound.
3. Wrap conductors where they exit the conduit with 3M #2229 "Scotch Seal" mastic tape. Lap tape to approximate diameter of the raceway and wrap outside of conduit opening with (minimum) one turn.
4. Use conduit sealing bushings type CSB (O-Z/Gedney) or equal.
5. Empty conduits shall be sealed with standard non-hardening duct seal compound and then capped to prevent entrance of moisture and gases and to meet fire resistance requirements.
6. Provide cable drip loop minimum 12" high.
K. Marker tape: Place plastic yellow marker tape at 12" below finish grade along and above buried conduits. Label tape "CAUTION: ELECTRICAL LINES BELOW" or similar wording.
L. Electrical and communications systems raceways routed underground shall not occupy the same trench as plumbing utilities such as sewer, water, storm drain, gas or other wet or dry gaseous utility system. A minimum of 12" of undisturbed earth is required. Where utilities must cross in closer proximity to each other due to physical constraints, 6" minimum crossing distances are allowed, however 18" on all sides of a utility crossing must be concrete encased.
M. Duct bank defined here-in shall be four or more conduits in a common trench, conduit spacers and saddles shall be required in all trenches where more than two conduits over 2" in diameter travel in the same trench. Proper spacing between systems as outlined above shall be required and spacers shall be located each 5' (maximum) along trench route from point to point.
N. Conduits, routed below footings, slabs, grade beams, columns, and other structural elements shall be installed in strict compliance with structural details and criteria shown on structural plans. Clearances below structural elements and sleeves through structural elements must be carefully planned to avoid conflict and must be approved by the structural engineer if conflict arises.
O. All conduit or raceways passing through fire rated walls, floors, or ceilings shall be installed with a listed penetration method which protects the opening to the same rating as the assembly and is non hardening.
P. Expansion Joints
1. Conduits 3" and larger, that are secured to the building structure on opposite sides of a building expansion joint, require expansion and deflection couplings. Install the couplings in accordance with the manufacturer's recommendations.
2. Provide conduits smaller than 3" with junction boxes on both sides of the expansion joint. Connect conduits to junction boxes with sufficient slack of flexible conduit to produce 5" vertical drop midway between the end. All conduit shall have a copper green grounding bonding conductor installed.
Q. Seismic Joints
1. At seismic joints, provide conduits rigidly secured to the building structure on opposite sides of a building expansion joint with junction boxes or approved fittings, on both sides of the joint. Connect conduits to junction boxes with sufficient slack flexible conduit such that these slack conduits are 1 1/2 times the distance between conduit ends. Flexible conduit shall have a copper green ground bonding jumper installed.
R. Location: Locate boxes and conduit bodies so as to ensure accessibility of electrical wiring.
S. Anchoring: Secure boxes rigidly to the substrate upon which they are being mounted, or solidly embed boxes in concrete or masonry.
T. Special Application: Provide weatherproof outlets for locations exposed to weather or moisture.
U. Knockout Closures: Provide knockout closures to cap unused knockout holes where blanks have been removed.
V. Coordinate all electrical device locations with the architectural floor plan and interior and exterior elevations to prevent mounting devices within elements that they may conflict such as cabinetry, mirrors, planters, etc.
W. Size outlet and junction boxes to minimum wire fill space requirements. Upsize box as required to allow ease of wire installation and device installation.
X. Outlet and junction boxes in fire rated walls shall be gauged and spaced so as not to exceed the maximum penetration allowed by the assembly without compromising the fire rating. If a conflict arises relative to a specific condition, the contractor shall follow the requirements of the fire authority and ask for guidance from the design team. At no time should a larger box be installed prior to resolution of conflict.

END OF SECTION 26 0533

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CITY OF SAN LUIS OBISPO

PROJECT TITLE: 1106 WALNUT FENCING IMPROVEMENTS
SHEET TITLE: ELECTRICAL SPECIFICATIONS
90% CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. THOMA
NO. 20823
ELECTRICAL
STATE OF CALIFORNIA
EXPIRES: 09/30/26
THOMA #23-8146

DESIGNED BY: CHRIS JOSE
DRAWN BY: TR
CHECKED BY: CJ/JT
APPROVED BY:
SCALE: AS NOTED
DATE: SEPT 11, 2024
CITY SPECIFICATION NO. 2000577-02
PLAN FILE NO. / LOCATION 2504-05-PS23
SHEET NO. E004

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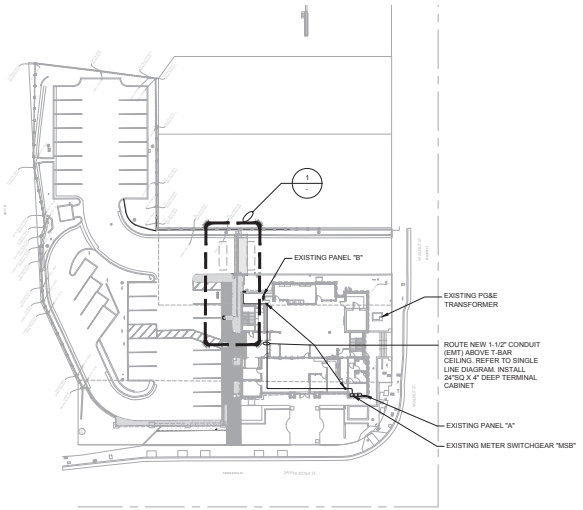
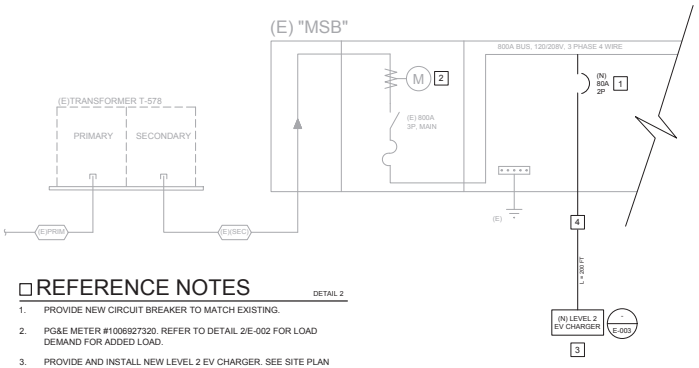


OVERALL ELECTRICAL SITE PLAN

SCALE: 1" = 40'-0"

NORTH

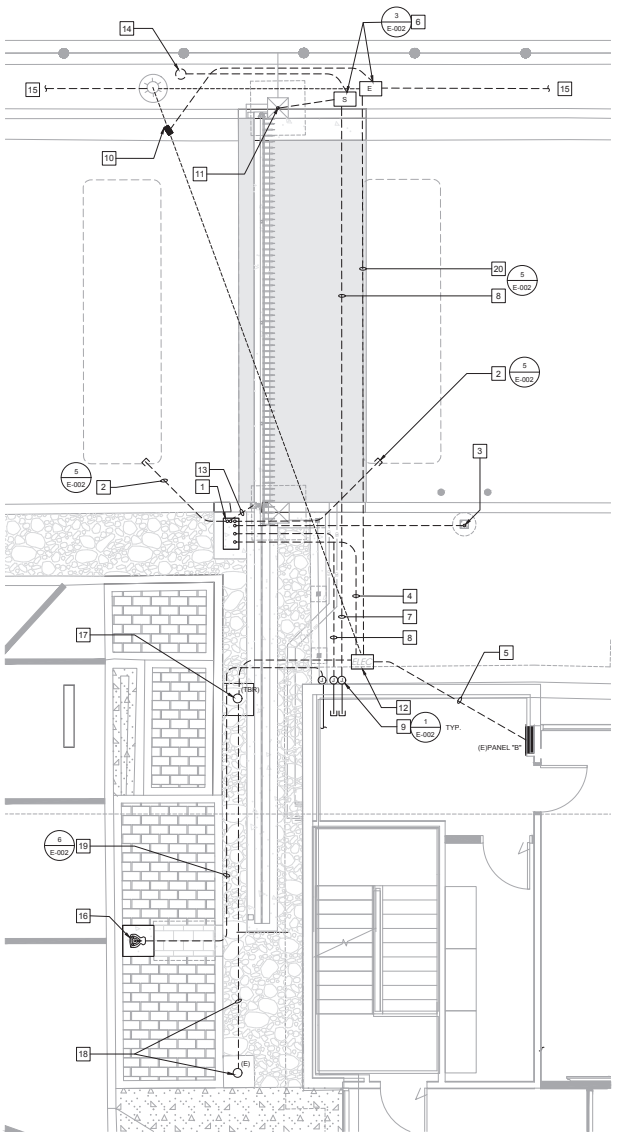


REFERENCE NOTES

DETAIL 2

1. PROVIDE NEW CIRCUIT BREAKER TO MATCH EXISTING.
2. PG&E METER #1006927320. REFER TO DETAIL 2/E-002 FOR LOAD DEMAND FOR ADDED LOAD.
3. PROVIDE AND INSTALL NEW LEVEL 2 EV CHARGER. SEE SITE PLAN NOTE 16 ON THIS SHEET FOR LOCATION. INSTALL PER MANUFACTURE REQUIREMENTS AND PROVIDE ALL ACCESSORIES AND CONCRETE BASE FOR A FULLY WORKING SYSTEM. REFER TO TO SHEET E003 FOR SPECIFICATION. PROVIDE WITH POWER MANAGEMENT KIT FOR POWER SHARING. PROGRAM OUTPUT TO 40AMP (8.32KW) SO LOAD DOES NOT INCREASE THE 800A SERVICE. OUTPUT CAN BE MODIFIED TO MAX LOAD AFTER A 30DAY RECORDING HAS BEEN ESTABLISHED TO VERIFY THE EXISTING DEMAND LOAD AT THE THE BUILDING.
4. 1-1/2"C WITH (2)#4 THWN & (1)#8 CU GROUND

2 (E) "MSB" SINGLE LINE DIAGRAM



1 ENLARGE PLAN AT ROLLING GATE

SCALE: 1/4" = 1'-0"

REFERENCE NOTES

DETAIL 1

1. PROVIDE CONNECTION TO MOTORIZED GATE PER MANUFACTURER INSTALLATION INSTRUCTIONS. VERIFY REQUIREMENTS WITH GATE SUPPLIER.
2. NEW 3/4"C (PVC40) STUB(S) FOR LOOP DETECTORS. COORDINATE WITH GATE CONTRACTOR.
3. STANCHION MOUNT KEYPAD. PROVIDE 3/4"C.O BETWEEN MOTORIZED GATE AND KEYPAD VIA PULL BOX. WIRES BY GATE CONTRACTOR.
4. NEW 3/4"C (PVC 40) W/ (2) #12 THWN AND (1) #12 COPPER GROUND [120V BRANCH CIRCUIT] TO PANEL "B". PROVIDE NEW 20A/1P BREAKER TO MATCH EXISTING AND UPDATE PANEL SCHEDULE.
5. REMOVE EXISTING BRANCH CIRCUIT BETWEEN PULL BOX AND PANELBOARD, THEN RE-PULL EXISTING AND NEW TO CONDUCTORS AND RE-TERMINATE TO BREAKERS. HOMERUN TO EXISTING PANEL "B"
6. PROVIDE TWO 11"X17" PULLBOXES FLUSH IN GRADE. LABEL ONE "SIGNAL" AND ONE "ELECTRICAL"
7. NEW 2" (PVC40) FOR ACCESS CONTROLLER AT KEYPAD LOW VOLTAGE WIRING BY OWNER'S VENDOR.
8. NEW 2"C (PVC40) FOR SECURITY CAMERA WIRING BY OWNER'S VENDOR.
9. WALL MOUNT LB PER DETAIL AND STUB COMMUNICATION CONDUITS TO ACCESSIBLE SPACE ABOVE 1ST FLOOR AND EXTEND FEEDER CONDUIT TO "MSB".
10. POTHOLE TO EXPOSE EXISTING BRANCH CIRCUIT BETWEEN PULL BOX AND EXISTING POLE LIGHT. PRIOR TO DEMOING THE ROAD FOR THE ROLLING GATE, INTERCEPT EXISTING CONDUIT AND EXTEND NEW BRANCH CIRCUIT CONDUIT TO NEW PULL BOX. EXTEND EXISTING BRANCH CIRCUIT TO MATCH EXISTING.
11. NEW 1"C (PVC40) BETWEEN PULLBOX AND PILASTER. PLUMB CONDUIT TO PILASTER FOR FUTURE SECURITY CAMERA WIRING. COORDINATE WITH LANDSCAPE ARCHITECT..
12. EXISTING ELECTRICAL PULL BOX FOR SITE LIGHTING. CONDUITS RUN TO PANEL "B".
13. NEW $\frac{3}{4}$"C FOR SENSOR WIRING. REFER TO SHOP DRAWING FOR EXACT LOCATION PRIOR TO ROUGH-IN.
14. STUB 2"C (PVC 40) TO 8" ROUND PULL BOX FOR FUTURE SECURITY CAMERA.
15. EXISTING BRANCH CIRCUIT TO EXISTING POLE LIGHT TO BE PROTECTED.
16. CONNECT TO PEDESTAL MOUNT CHARGING STATION. PROVIDE 6" DEEP X 24" SQUARE CONCRETE BASE. COORDINATE WITH MANUFACTURER INSTALLATION FOR ANCHOR BOLT REQUIREMENTS PRIOR TO ROUGH-IN. ENSURE THE CONDUITS ARE PLUMB.
17. EXISTING LIGHT TO BE REMOVED. INTERCEPT EXISTING BRANCH CIRCUIT CONDUIT AND PROVIDE NEW 8" ROUND PULL BOX.
18. EXISTING LIGHT TO REMAIN. PROTECT EXISTING BRANCH CIRCUIT CONDUITS.
19. NEW (PVC 40) FEEDER CONDUIT FOR EV CHARGER PER SINGLE LINE DIAGRAM.
20. NEW 1" (PVC 40 BRANCH CIRCUIT CONDUIT) TO POWER THE EXISTING POLE LIGHT. RE-ROUTE EXISTING BRANCH CIRCUIT AND EXTEND.

CITY OF SAN LUIS OBISPO

PROJECT TITLE:
1106 WALNUT FENCING IMPROVEMENTS

SHEET TITLE:
ENLARGED ELECTRICAL SITE PLAN

90% CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER
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NO. 20823
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DESIGNED BY:	CHRIS JOSE
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SPECIAL PROVISIONS

FOR

CITY OF SAN LUIS OBISPO

1106 Walnut Fencing Improvements

Specification No. 2000577-02

November 2024

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

919 Palm Street
San Luis Obispo, CA 93401
(805) 781-7200

1106 Walnut Fencing Improvements

Specification No. 2000577-02

Approval Date: November 12, 2024

<<Engineer of Record Stamp>>

<<Signature Date>>

Signature and Date

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APPENDIX E - CHARGERPOINT SITE DESIGN GUIDE .....
APPENDIX F – CHARGERPOINT CONSTRUCTION SIGN OFF FORM .....

NOTICE TO BIDDERS
BID SUBMISSION

Sealed bids will be received by the City of San Luis Obispo at the Public Works Administration Office located at 919 Palm Street, San Luis Obispo, California 93401, until

11:00 a.m. on December 12, 2024

at which time they will be publicly opened and read aloud. Public bid opening may also be viewed via Microsoft Teams video conference and conference call. In person attendance of the bid opening will be permitted in adherence to social distancing measures. Use the following link:

or join by phone with this number: (209)645-4165 with Conference ID:XXXXXXXX

Submit bid in a sealed envelope plainly marked:

1106 Walnut Fencing Improvements, Specification No. 2000577-02

Any bid received after the time and date specified will not be considered and will be returned to the bidder unopened. Bids received by Fax or Email will not be considered.

By submission of bid you agree to comply with all instruction and requirements in this notice and the contract documents.

All bids must be submitted on the Bid Item List form(s) provided and submitted with all other Bid Forms included in these Special Provisions.

Each bid must be accompanied by either a:

1. certified check
2. cashier's check
3. bidder's bond

made payable to the City of San Luis Obispo for an amount equal to ten percent of the bid amount as a guaranty. Guaranty will be forfeited to the City San Luis Obispo if the bidder, to whom the contract is awarded, fails to enter into the contract.

The City of San Luis Obispo reserves the right to accept or reject any or all bids or waive any informality in a bid.

All bids are to be compared based on the City Engineer's estimate of the quantities of work to be done, as shown on the Bid Item List.

Bids will only be accepted from bidders that are licensed in compliance with the provisions of Chapter 9, Division III of Business and Professions Code.

The award of the contract, if awarded, will be to the lowest responsive bid submitted by a responsible contractor whose bid complies with the requirements prescribed. If the contract is awarded, the contract will be awarded within 60 calendar days after the opening of the bids.

Failure to raise defects in the notice to bidders or bid forms prior to bid opening constitute a waiver of those defects.

BID DOCUMENTS

A copy of the plans and special provisions may be downloaded, free of charge, from the City's website at:

www.slocity.org/government/department-directory/public-works/public-works-bids-proposals

No printed copies are available for purchase at the City office.

Standard Specifications and Engineering Standards referenced in the Special Provisions may be downloaded, free of charge, from the City's website at:

www.slocity.org/government/department-directory/public-works/documents-online/construction-documents

You are responsible to obtain all issued addenda prior to bid opening. Addenda will be available to download at the City's website listed above or at the office of the City Engineer.

Contact the project manager, Sandra Golonka at 805-781-7239 the Public Works Department at (805) 781-7200 prior to bid opening to verify the number of addenda issued.

PROJECT INFORMATION

In general, the project consists of site improvements for the construction of a new fence, security pickets on existing fencing and a security gate.

The project estimated construction cost is $470,000.

Contract time is established as 60 working days.

The fixed liquidated damages amount is established at $500 per day for failure to complete the work within the contract time.

In compliance with section 1773 of the Labor Code, the State of California Department of Industrial Relations has established prevailing hourly wage rates for each type of workman. Current wage rates may be obtained from the Division of Labor at:

https://www.dir.ca.gov/oprl/DPreWageDetermination.htm

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

There will be a **MANDATORY** walkthrough on **November 27, 2025, at 11 am**. Prime contractors wishing to submit a bid proposal are required to attend and sign in at the meeting. Bidders must meet City Staff at 1106 Walnut Street in San Luis Obispo, California.

QUALIFICATIONS

You must possess a valid Class A or B Contractor's License at the time of the bid opening.

You and any subcontractors required to pay prevailing wage must be registered with the Department of Industrial Relations pursuant to Section 1725.5 of the Labor Code.

You must have experience constructing projects similar to the work specified for this project. Provide three similar reference projects completed as either the prime or subcontractor. All referenced projects must have been completed within the last five years from this project's bid opening date.

One of the three reference projects must have been completed under contract with a city, county, state or federal government agency as the prime contractor.

Two of the three referenced projects must include construction of a security fence.

One of the referenced projects must be for a fence with an electrical gate.

Failure to provide reference projects as specified in this section and as required on the qualification form is cause to reject a bid as being non-responsive.

The City reserves the right to reject any bid based on non-responsiveness if a bidder fails to provide a bid that complies with all bidding instructions.

The City reserves the right to reject a responsive bid based on the non-responsibility of the bidder if the Director of Public Works or Designee finds, after providing notice and a hearing to the bidder, that the bidder lacks the

1. knowledge
2. experience,

3. or is otherwise not responsible as defined in Section 3.24 of the San Luis Obispo Municipal Code to complete the project in the best interest of the City.

Rejected bidders may appeal this determination. Appeal must comply with the requirements in this Notice to Bidders.

It is the City of San Luis Obispo's intent to award the contract to the lowest responsive bid submitted by a responsible bidder. If in the bidder's opinion the contract has been or may be improperly awarded, the bidder may protest the contract award.

Protests must be filed no later than five working days after either:
1. bid opening date
2. notification of rejected bid.

Protest must be in writing and received by the project manager located at:
919 Palm Street
San Luis Obispo, CA 93401.

Valid protests must contain the following information:
1. the reasons for the protest
2. any supporting documentation
3. the ruling expected by the City to remedy the protest.

Any protest not containing all required information will be deemed invalid and rejected.

The City will consider additional documentation or other supporting information regarding the protest if submitted in compliance to the specified time limits. Anything submitted after the specified time limit will be rejected and not be considered.

The Director of Public Works or Designee may request additional information to be submitted within three days of the request, unless otherwise specified, and will notify the protester of ruling within ten days of determination.

If the protester is not satisfied with ruling, the protester may appeal the ruling to the City Council in compliance with Chapter 1.20 of the City of San Luis Obispo Municipal Code.

Pursuant to the Public Records Act (Government Code, § 6250, et seq.), the City will make public records available upon request.

AWARD

The lowest bidder will be determined using the TOTAL PROJECT BID.

As a condition to executing a contract with the City, two bonds each equal to one hundred percent of the total contract price are required in compliance with Section 3-1.05 of the Standard Specifications.

You may substitute securities for moneys withheld under the contract in compliance with the provisions of the Public Contract Code, Section 10263.

ACCOMMODATION

If any accommodations are needed to participate in the bid process, please contact Allie Genard at (805) 781-7200 or by Telecommunications Device for the Deaf at (805) 781-7107. Requests should be made as early as possible in the bidding process to allow time for accommodation.

BID FORMS

All bid forms must be completed and submitted with your bid. Failure to submit these forms and required bid bond is cause to reject the bid as nonresponsive. Staple all bid forms together.

THE UNDERSIGNED, agrees that they have carefully examined:

1. the location of the proposed work
2. the plans and specifications
3. read the accompanying instructions to bidders

and propose to furnish all:

1. materials
2. labor

to complete all the required work satisfactorily in compliance with

3. plans
4. specifications
5. special provisions

for the prices set forth in the bid item list:

BID ITEM LIST FOR 1106 WALNUT FENCING IMPROVEMENTS, SPECIFICATION NO. 2000577-02

Item No.	$SS_{(1)}$	Item Description	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
1	15	Demolition of Existing Improvements	LS	1	---	
2	15	Clear and Grub	LS	1	---	
3	5	Construction Surveying	LS	1	---	
4	99	Construction Fencing	LS	1	---	
5	7	OSHA Compliance for Trenching	LS	1	---	
6	99	Gate Operator and Sensors	LS	1	---	
7	17	Grading	LS	1	---	
8	73,90	Concrete Curb and Gutter	LF	7		
9	73,90	Concrete Curb	LF	28		
10	73.90	Curb at Rolling Gate	LF	55		
11	73,90	Mow Curb	LF	92		
12	84	Curb Paint Red	LF	14		
13	20	Bike Rack	EA	1		
14	80	7’ Decorative Picket Fence	LF	16		
15	80	8’ Decorative Picket Fence	LF	57		
16	80	6’ Decorative Picket Fence	LF	66		

Item No.	SS(1)	Item Description	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
17	80	4’ Decorative Picket Fence	LF	131		
18	80	3’ Decorative Picket Fence	LF	72		
19	80	2’ Decorative Picket Fence	LF	186		
20	80	Decorative Picket Gate	EA	1		
21	80	Decorative Rolling Gate	EA	1		
22	20	CMU Wall and Pilasters Foundation	LS	1	---	
23	80	Razor Wire and Brackets	LF	110		
24 (S)	86	Electrical and Communication Improvements	LS	1	---	
25	73,90	Asphalt	SF	180		
26	73,90	Concrete	SF	75		
27	20	Decorative Rock Mulch	SF	627		
28	86	Install Conduit	LS	1	---	
29 (S)	99	EV Charger	EA	1		
30 (S)	99	ChargePoint Compliance	LS	1	---	
31 (S)	99	ChargePoint Coordination/Start-up	LS	1	---	
32	20	Planting – Shrub Area	SF	295		
33	20	Sod Replacement	SF	600		
34	20	Irrigation	LS	1	---	
Total Project Bid = (Base Bid)					**$**	
Company Name:						

(1) refers to section in the Standard Specifications, with modifications in the Special Provisions, that describe required work.
(S) Specialty item per Section 5-1.13A SUBCONTRACTING, General of the Standard Specifications.
(F) final pay item per Section 9-1.02A

LIST OF SUBCONTRACTORS

Pursuant to Section 4100 of the Public Contracts Code and section 2-1.33C of the standard specifications, the Bidder is required to furnish the following information for each Subcontractor performing more than 1/2 percent (0.5%) of the total base bid. Do not list alternative subcontractors for the same work. Subcontracting must not total more than fifty percent (50%) of the submitted bid except as allowed in section 5-1.13 of the standard specifications.

For Streets & Highways projects, subcontractors performing less than ten thousand dollars ($10,000) worth of work need not be mentioned. **Subcontractors required to pay prevailing wage, must be registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 to be listed.**

NOTE: If there are no subcontractors, write "NONE" and submit with bid.

Name Under Which Subcontractor is Licensed	License Number	**DIR Public Works Registration Number**	Address and Phone Number of Office, Mill or Shop	Specific Description of Subcontract	% of Total Base Bid

Attach additional sheets as needed.

PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT

In compliance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder, or any subcontractor to be engaged by the bidder, **has ____, has not ____** been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

NOTE: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Bid. Signing this Bid on the signature portion constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In compliance with Public Contract Code Section 10162, the Bidder must complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

_____ Yes _____ No

If the answer is yes, attach a letter explaining the circumstances

PUBLIC CONTRACT CODE SECTION 10232 STATEMENT

In compliance with Public Contract Code Section 10232, you hereby state under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against you within the immediately preceding two-year period because of your failure to comply with an order of a federal court which orders you to comply with an order of the National Labor Relations Board.

LABOR CODE SECTION 1725.5 STATEMENTS

The bidder has delinquent liability to an employee or the state for any assessment of back wages or related damages, interest, fines, or penalties pursuant to any final judgment, order, or determination by a court or any federal, state, or local administrative agency, including a confirmed arbitration award. Any judgment, order, or determination that is

under appeal is excluded, provided that the contractor has secured the payment of any amount eventually found due through a bond or other appropriate means.

_____ Yes _____ No

The bidder is currently debarred under Section 1777.1 or under any other federal or state law providing for the debarment of contractors from public works.

_____ Yes _____ No

NOTE: The above Statements and Questionnaire are part of the Bid. Signing this Bid on the signature portion constitute signature of this Statement and Questionnaire. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

NON-COLLUSION DECLARATION

I, _____, declare that

I am _____ of_____,

the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone refrained from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Executed on _____, 20_____, in _____

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____

(Signature and Title of Declarant)

(SEAL)

Subscribed and sworn to before me
this _____day of _____, 20_____

_____

Notary Public

Company Name:_____

BIDDER ACKNOWLEDGEMENTS

By signing below, the bidder acknowledges and confirms that this bid is based on the information contained in all contract documents, including the notice to bidders, plans, specifications, special provisions, and addendum number(s) _____. **(Note: You are responsible to verify the number of addenda prior to the bid opening.)**

The undersigned further agrees that in case of default in executing the required contract, with necessary bonds, within eight days, (not including Saturdays, Sundays, and legal holidays), after having received a mailed notice that the contract is ready for signature, the proceeds of the check or bond accompanying his bid will become the property of the City of San Luis Obispo.

Licensed in accordance with an act providing for the registration of contractors, License No._____, Expiration Date _____.

The above statement is made under penalty of perjury, and any bid not containing this information "will be considered non-responsive and will be rejected" by the City.

Signature of Bidder _____

_____
(Print Name and Title of Bidder)

DIR– Public Works Registration No: _____

Business Name (DBA): _____

Owner/Legal Name: _____

Indicate One: ☐Sole-proprietor ☐ Partnership ☐Corporation

List Partners/Corporate Officers: _____
Name Title

_____
Name Title

_____
Name Title

Business Address _____

Street Address _____

Mailing Address _____

City, State, Zip Code _____

Phone Number _____

Fax Number _____

Email Address _____

Date _____

QUALIFICATIONS

Failure to furnish complete reference information **ON THIS FORM**, as specified in this project's Notice to Bidders and indicated below, is cause to reject the bid. Additional information may be attached but is not a substitute for this form.

Reference Number 1

Customer Name & Contact Individual	
Telephone & Email	
Project Name (Site Address):	
Is this similar to the project being bid and did this project include security fencing construction activity? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	Date project completed:

Reference Number 2

Customer Name & Contact Individual	
Telephone & Email	
Project Name (Site Address):	
Is this similar to the project being bid and did this project include security fencing construction activity? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	Date project completed:

Reference Number 3

Customer Name & Contact Individual	
Telephone & Email	
Project Name (Site Address):	
Is this similar to the project being bid and did this project include electric security fencing construction activity? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	Date project completed:

ATTACH BIDDER'S BOND TO ACCOMPANY BID

Know all men by these presents:

That we _____, AS PRINCIPAL, and

_____, AS SURETY, are held and firmly bound unto the City of San Luis Obispo in the sum of:

_____ Dollars (_____) to be paid to said City or its certain attorney, its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents:

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the certain bid of the above

bounden _____

to construct _____
(insert name of street and limits to be improved or project)

dated _____ is accepted by the City of San Luis Obispo, and if the above

bounden _____, his heirs, executors, administrators, successors, and assigns shall duly enter into and execute a contract for such construction and shall execute and deliver the two bonds described within ten (10) days (not including Saturdays, Sundays, or legal holidays) after the above bounden,

_____, has received notice by and from the said City of San Luis Obispo that said contract is ready for execution, then this obligation shall become null and void; otherwise, it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, we hereunto set our hands and seals this ___ day of _____, 20____.

Bidder Principal:

_____

Signature Date
Title:

Surety:

_____

_____

_____

Bidder's signature is not required to be notarized. Surety's signature must be notarized.
Equivalent form may be substituted
(Rev. 6-30-14)

SPECIAL PROVISIONS

ORGANIZATION

Special provisions are under headings that correspond with the main section heading of the Standard Specifications. Each special provision begins with a revision clause that describes or introduces a revision to the Standard Specifications. Any paragraph added or deleted by a revision clause does not change the paragraph number of the Standard Specifications for any other reference to a paragraph of the Standard Specifications.

DIVISION I GENERAL PROVISIONS

1 GENERAL

Add to Section 1-1.01 GENERAL:

The work must be done in compliance with the City of San Luis Obispo, Department of Public Works:

1. 1106 Walnut Fencing Improvements Special Provisions
2. City of San Luis Obispo Standard Specifications and Engineering Standards – 2020 edition
3. State of California, Department of Transportation Standard Specifications and Standard Plans – 2015 edition

In case of conflict between documents, governing ranking must comply with section 5-1.02 of the City of San Luis Obispo's Standard Specifications. All work must conform to these Special Provisions and appendices, project plans, and the most current Building Codes. In the event of a conflict, the more stringent requirement shall apply.

Failure to comply with the provisions of these sections is a material breach of contract:

1. Sections 5 through 8 of the Standard Specifications
2. Section 12 through 15 of the Standard Specifications
3. Section 77-1 of the Standard Specifications
4. Section 81 of the Standard Specifications
5. authorized working hours
6. OSHA compliance

3 CONTRACT AWARD AND EXECUTION

Add Section 3-1.18B CONTRACT EXECUTION, Building Permit

3-1.18B Building Permit

The contractor must obtain a no-fee building permit from the Community Development Department. All requirements of the building permit shall be applied to the project. The contractor is responsible for coordinating inspection with the building division for the project. Request for the inspection must be scheduled 72 hours in advance of the required inspection.

4 SCOPE OF WORK

Add to Section 4-1.03 WORK DESCRIPTION:

Comply with the provisions of Sections 5,7,15,17,20,49,73,80,84,86,90,99 for general, material, construction, and payment specifics. Refer to these Special Provisions including Appendix B Supplemental Technical Specifications for modifications to the above Sections.

5 CONTROL OF WORK

Replace Section 5-1.32 AREAS FOR USE with:

Contractor shall be allowed to use area for parking, staging, and construction within the property limits.

Contractor shall install and maintain temporary rigid 6' minimum high chain link or other rigid work site construction fencing throughout the project.

Contractor will not be allowed the use of the 1106 Walnut toilet facilities. During construction, the contractor shall secure and maintain portable sanitary facilities in acceptable condition from the beginning of work until completion.

8 PROSECUTION AND PROGRESS

Add to Section 8-1.3 PRECONSTRUCTION CONFERENCE:

Provide a level 1 schedule of values for all lump sum bid items.

9 PAYMENT

Add to Section 9-1.01 GENERAL:

Work as specified in these specifications and as shown on the Plans for which no separate payment is provided for in the Bid Item List will be considered a subsidiary obligation of the Contractor and the cost thereof shall be included in the applicable Contract prices for the item to which the work applies.

The following additional Bid Item descriptions are included for those atypical bid items not fully covered in the Standard Specifications:

BID ITEM 29 – EV CHARGER - Payment for this lump sum bid item shall be made on a percentage basis based on the lump sum amount of the bid item. Work shall include purchase and installation of the EV charger per plans in compliance with ChargePoint Site Design Guide (Appendix E) provided, completed by a certified ChargerPoint Installer. Installer must provide a ChargePoint certificate. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 30 – CHARGERPOINT COMPLIANCE - Payment for this lump sum bid item shall be made on a percentage basis based on the lump sum amount of the bid item.

Work shall include coordination with ChargePoint to ensure timely delivery of charger and related hardware. Installation must be performed in accordance with the ChargePoint Installation Guide (Appendix E). This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 30 – CHARGERPOINT COORDINATION AND COMMISSIONING - Payment for this lump sum bid item shall be made on a percentage basis based on the lump sum amount of the bid item. Work shall include coordination with ChargePoint's technical team for system integration, confirmation of charger connectivity, and coordination with the commissioning of the ChargerPoint EV chargers. Contractor shall comply with and provide the ChargePoint Construction Sign Off Form (Appendix F) to the City prior to scheduling ChargePoint for commissioning. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

Add to Section 9-1.02A MEASUREMENT, General:

Unless otherwise specified, payment for items of work identified in the Bid Item List shall be as specified in the City of San Luis Obispo Standard Specifications, Caltrans 2015, and as directed by the Engineer. The contract unit prices paid for each bid item shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work and no additional payment will be made.

Add to Section 9-1.03 PAYMENT SCOPE:

Any item of work that does not have separate bid item is considered included in the project cost of work and no additional compensation will be paid.

DIVISION III EARTHWORK AND LANDSCAPE

20 LANDSCAPE AND IRRIGATION

Add to Section 20-5.03A(3)(c) INERT GROUND COVERS AND MULCHES, General-Summary:

Mulch to be applied to all planting areas as shown in plans. Mulch in planting areas shall be 3" depth rock mulch. Contractor shall provide sample for approval. Mulch shall be free of weed seeds or substances injurious to plant growth. Materials: 3/8" California Gold gravel mulch, Central Coast Landscape Products, or approved equal.

DIVISION V SURFACING AND PAVEMENTS

39 ASPHALT CONCRETE

Replace Section 39-1.01A GENERAL, Summary:

Hot Mix Asphalt (HMA) shall be Type A, ½" maximum aggregate.

DIVISION VIII MISCELLANEOUS CONSTRUCTION

73 CONCRETE CURBS AND SIDEWALKS

Add to Section 73-1.01 GENERAL:

Concrete removal must be per Section 73-1.03A and City Standard Detail 4910.

77 LOCAL INFRASTRUCTURE

Add to Section 77-1.03B TRENCH CONSTRUCTION, General with:

The contractor shall anticipate the minimum of one water service, one gas service and one sewer lateral for each property. The sewer lateral locations are unknown and the repair of the sewer laterals shall be factored into the payment for the mainline being installed. Water and gas services will be marked by Underground Service Alert or USA.

DIVISION X ELECTRICAL WORK

86 ELECTRICAL

Add to Section 86-1.01 GENERAL:

For construction specifications of electrical items, the Electrical Plans shall take precedent over the State Standard Specifications. Refer to Electrical Sheets of the Plan Set and to Technical Specifications included in Appendix B.

DIVISION XII BUILDING CONSTRUCTION

99 BUILDING CONSTRUCTION

Add to Section 99-1.01 GENERAL:

See Appendix B for Technical Specifications for the project.
See Appendix C for City Communication Cabling Standards for the Project.
See Appendix D for Structural Calculations
See Appendix E for ChargePoint Site Design Guide
See Appendix F for ChargePoint Construction Sign Off Form

DIVISION XIII APPENDICES

Add to Section 100-1.01 APPENDICES:

Refer to Appendix B: Technical Specifications for the project.
Refer to Appendix C: City Communication Cabling Standards for the Project.
Refer to Appendix D: Structural Calculations
Refer to Appendix E: ChargePoint Site Design Guide
Refer to Appendix F: ChargePoint Construction Sign Off Form

APPENDIX A - FORM OF AGREEMENT

THIS AGREEMENT, made on _____, by and between the City of San Luis Obispo, a municipal corporation and charter city, San Luis Obispo County, California (hereinafter called the Owner) and COMPANY NAME (hereinafter called the Contractor).

WITNESSETH:

That the Owner and the Contractor for the consideration stated herein agree as follows:

ARTICLE 1, SCOPE OF WORK: The Contractor shall perform everything required to be performed, shall provide and furnish all of the labor, materials, necessary tools, expendable equipment, and all utility and transportation services required to complete all the work of construction of

NAME OF PROJECT, SPEC NO.

in strict compliance with the plans and specifications therefor, including any and all Addenda, adopted by the Owner, in strict compliance with the Contract Documents hereinafter enumerated.

It is agreed that said labor, materials, tools, equipment, and services shall be furnished and said work performed and completed under the direction and supervision and subject to the approval of the Owner or its authorized representatives.

ARTICLE II, CONTRACT PRICE: The Owner shall pay the Contractor as full consideration for the faithful performance of this Contract, subject to any additions or deductions as provided in the Contract Documents, the contract prices as follows:

Item No.	Item	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
1.					
2.					
3.					

BID TOTAL: $ .00

Payments are to be made to the Contractor in compliance with and subject to the provisions embodied in the documents made a part of this Contract.

Should any dispute arise respecting the true value of any work omitted, or of any extra work which the Contractor may be required to do, or respecting the size of any payment to the Contractor, during the performance of this Contract, said dispute shall be decided by the Owner and its decision shall be final, and conclusive.

ARTICLE III, COMPONENT PARTS OF THIS CONTRACT: The Contract consists of the following documents, all of which are as fully a part thereof as if herein set out in full, and if not attached, as if hereto attached:

1. Notice to Bidders and Information for Bidders
2. Standard Specifications and Engineering Standards
3. Special Provisions, any Addenda, Plans and Contract Change Orders
4. Caltrans Standard Specifications and Standard Plans 2015
5. Accepted Bid and Bid Bond
6. List of Subcontractors
7. Public Contract Code Sections 10285.1 Statement
8. Public Contract Code Section 10162 Questionnaire
9. Public Contract Code Section 10232 Statement
10. Labor Code Section 1725.5 Statements
11. Bidder Acknowledgements
12. Qualifications
13. Non-collusion Declaration
14. Agreement and Bonds
15. Insurance Requirements and Forms

ARTICLE IV INDEMNIFICATION: The Contractor shall indemnify, defend with legal counsel approved by City, and hold harmless City, its officers, officials, employees and volunteers from and against all liability, loss, damage, expense, cost (including without limitation reasonable legal counsel fees, expert fees and all other costs and fees of litigation) of every nature arising out of or in connection with the Contractor's negligence, recklessness or willful misconduct in the performance of work hereunder or its failure to comply with any of its obligations contained in this Agreement, except such loss or damage which is caused by the sole or active negligence or willful misconduct of the City. Should conflict of interest principles preclude a single legal counsel from representing both the City and the Contractor, or should the City otherwise find the Contractor's legal counsel unacceptable, then the Contractor shall reimburse the City its costs of defense, including without limitation reasonable legal counsel fees, expert fees and all other costs and fees of litigation. The Contractor shall promptly pay any final judgment rendered against the City (and its officers, officials, employees and volunteers) with respect to claims determined by a trier of fact to have been the result of the Contractor's negligent, reckless or wrongful performance. It is expressly understood and agreed that the foregoing provisions are intended to be as broad and inclusive as is permitted by the law of the State of California and will survive termination of this Agreement.

The Contractor obligations under this section apply regardless of whether such claim, charge, damage, demand, action, proceeding, loss, stop notice, cost, expense, judgment, civil fine or penalty, or liability was caused in part or contributed to by an Indemnitee. However, without affecting the rights of the City under any provision of this agreement, the Contractor shall not be required to indemnify and hold harmless the City for liability attributable to the active negligence of City, provided such active negligence is determined by agreement between the parties or by the findings of a court of competent jurisdiction. In

instances where the City is shown to have been actively negligent and where the City's active negligence accounts for only a percentage of the liability involved, the obligation of the Contractor will be for that entire portion or percentage of liability not attributable to the active negligence of the City.

ARTICLE V. It is further expressly agreed by and between the parties hereto that should there be any conflict between the terms of this instrument and the bid of said Contractor, then this instrument shall control and nothing herein shall be considered as an acceptance of the said terms of said bid conflicting herewith.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands this year and date first above written.

CITY OF SAN LUIS OBISPO
A Municipal Corporation

_____
Whitney McDonald,
Interim City Manager

APPROVED AS TO FORM

_____
J. Christine Dietrick
City Attorney

CONTRACTOR:

Name of Company

By:_____
Name of CAO/President
Its: CAO/PRESIDENT

(2nd signature required if Corporation):

By:_____
Name of Corporate Officer

Its: _____

APPENDIX B – TECHNICAL SPECIFICATIONS

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Section 01 2500
Substitutions

PART 1 - GENERAL

1.01 "Or Equal" Substitutions

A. Requests for substitution of materials shall be completed in accordance with City of San Luis Obispo Standard Specifications Section 6-1.05.
   1. One Product Specified: Unless the Specifications state that no substitution is permitted, whenever in the Contract Documents any specific article, device, equipment, product, material, fixture, patented process, form, method, or type of construction is indicated or specified by name, make, trade name, or catalog number, with or without the words “or equal”, such specification shall be deemed to be used for the purpose of facilitating description of material, process, or article desired and shall be deemed to be followed by the words “or equal”. Contractor may, unless otherwise stated, offer any material, process, or article, which shall be substantially equal or better in every respect to that so indicated or specified and will completely accomplish the purpose of the Contract Documents.
   2. Two or More Products Specified: When two or more acceptable products are specified for an item of the Work, the choice will be up to the Contractor. Contractor shall utilize the same product throughout the Project. If a timely substitution request as set forth in Section 1.02.A. is not provided and an “or equal” substitution is requested, the Owner may consider the substitution only if the product specified is no longer commercially available.
      a. The burden of proof as to the equality of any material, process or article shall rest with the Contractor, and the Contractor shall submit all data substantiating a request for an “or equal” substitution item as provided in Section 3400 of the Public Contract Code, Specification Section 01 3300 and other specific sections of the specifications prior to Award of Contract.

1.02 Request for Substitutions

A. Substitute Request Form: Requests for substitutions of products, materials, or processes other than those specified must be made on the Substitution Request form attached. Requests must be submitted fourteen (14) calendar days prior to the date of the Bid Opening to be considered. An addendum will be issued seven (7) calendar days prior to Bid Opening, identifying all equipment and materials deemed equivalent to those specified and approved by the Architect.

B. Substitution Request Content: A substitution request must constitute a representation that the subcontractor/general contractor:
   1. Has investigated proposed product and determined that it is equal in quality and serviceability of the specified item.
   2. Will provide the same warranty for the substitution as for the specified product.
   3. Will coordinate installation and make changes to other work, which may be required for the work to be complete with no additional cost to General Contractor / Owner.
   4. Will be acceptable in consideration of the required design and artistic effect.
   5. Will require no excessive or more expensive maintenance including adequacy and availability of replacement parts.

6. Waives claims for additional costs or time extension, which may subsequently become apparent.
7. Will reimburse Owner for review or redesign services by the Architect and re-approval fees by authorities, agencies, or the Owner.

C. Substitution Submittal Procedure:
1. Contractor shall furnish four (4) copies of the requested information sufficient to determine whether the proposed substitution is equivalent including, but not limited to, all drawings, specifications, samples, performance data, calculations, and other information as may be required to assist the Architect and the Owner in determining whether the proposed substitution is acceptable.
2. The final decision shall be the Owner's. Owner may condition its approval of the substitution upon delivery to Owner of an extended warranty or other assurances of adequate performance of the substitution.
3. If the Substitution is Permitted: The Contractor shall be solely and directly responsible for fitting approved substituted material and equipment into the available space in a manner acceptable to the Owner and for the proper operation of the substituted equipment with all other equipment with which it may be associated. The Contractor shall bear all costs of meeting the above requirements for presenting a proposed substitution, and if the substitution is accepted, the Contractor must bear all costs involved including costs of Construction Manager's, Architect's, and Engineer's services required in adapting the substituted material or equipment to the installation to the complete satisfaction of the Owner.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

End of Section 01 2500

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Section 01 3300
Submittals

PART 1 - GENERAL

1.01 Submittals

A. Submittals shall be provided in accordance with City of San Luis Obispo Standard Specification Section 5-1.23.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

End of Section 01 3300

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Section 01 4000
Quality Control

PART 1 - GENERAL

1.01 Quality Control

A. Quality Control shall be completed in accordance with City of San Luis Obispo Engineering Standards and Standard Specifications and Caltrans Standard Specifications. See Section 5 for Control of Work and Appendix J for the City's Quality Assurance Program.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

3.01 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

END OF SECTION 01 4000

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Section 03 1000
Concrete Forming and Accessories

PART 1 GENERAL

1.01 Section Includes

A. Formwork for cast-in-place concrete, with shoring, bracing and anchorage.

B. Installation of items to be embedded in concrete, such as anchor bolts, inserts, embeds, and sleeves.

C. Openings for other work.

D. Form accessories.

E. Form stripping.

1.02 Related Requirements

A. Section 03 2000 - Concrete Reinforcing.

B. Section 03 3000 - Cast-in-Place Concrete.

1.03 Reference Standards

A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).

B. ACI PRC-347 - Guide to Formwork for Concrete; 2014 (Reapproved 2021).

C. ACI SPEC-117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

D. ACI SPEC-301 - Specifications for Concrete Construction; 2020.

E. PS 1 - Structural Plywood; 2023.

1.04 Submittals

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Provide data on void form materials and installation requirements.

C. Keep an accurate record of the dates of removal of forms, form shores and reshores, and furnish copies to the SEOR.

1.05 Quality Assurance

A. Comply with the pertinent provisions of 01 4000 - Quality Requirements

B. Construct forms according to ACI PRC-347, "Guide to Formwork for Concrete," and conforming to tolerances of ACI SPEC-117, "Specifications for Tolerances for Concrete Construction"

1.06 Delivery, Storage, and Handling

A. Comply with pertinent provisions of 01 6000 - Product Requirements delivering materials in a timely manner to ensure uninterrupted progress.

B. Store prefabricated forms off ground in ventilated and protected manner to prevent deterioration from moisture.

PART 2 PRODUCTS

2.01 Formwork - General

A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.

B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions.

C. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.

D. Comply with relevant portions of ACI CODE-318, ACI PRC-347, and ACI SPEC-301.

2.02 Wood Form Materials

A. Softwood Plywood: PS 1, B-B Medium or High Density Concrete Form Overlay, Class I, grade marked, not mill oiled.

B. Lumber: DF species; WCLIB Construction grade or better, WWPA No. 1 grade or better; with grade stamp clearly visible.

2.03 Formwork Accessories

A. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.
   1. Composition: Colorless, reactive, water-based or solvent-based compound.
   2. Do not use materials containing diesel oil or petroleum-based compounds.
   3. VOC Content: In compliance with applicable local, State, and federal regulations.

PART 3 EXECUTION

3.01 Examination

A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

3.02 Earth Forms

A. Hand trim sides and bottom of earth forms. Remove loose soil prior to placing concrete. Sides of all footings and grade beams shall be formed, unless the member detail provides at least 3" clear cover to reinforcement and indicates the member is cast against earth. Remove formwork prior to backfilling operations.

3.03 Erection - Formwork

A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI SPEC-301.

B. Rigidly construct forms to prevent mortar leakage, sagging, displacement or bulging between studs. Use clean, sound, approved form material, coated with specified materials only, not oil. Provide backing on all plywood joints.

C. Coat forms with the specified resin coating, not form oil. Construct forms to exact shapes, sizes, lines and dimensions required to obtain level, plumb, and straight surfaces. Provide openings, offsets, keys, reglets, anchorages, recesses, moldings, chamfers, blocking, screeds, drips, bulkheads, and all other required features. Make forms easily removable without hammering or prying against concrete. Space forms apart with metal spreaders. Construct forms to accurate alignment, locations and grades, and provide against sagging, leakage of concrete mortar, or displacement occuring during and after placing of concrete. Coordinate installation of inserts and anchors in forms according to shop drawings and requirements for work of other sections.

D. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.

E. Corners and angles: Provide 3/4" x 3/4" beveled chamfer strips for all exposed concrete corners and angles square unless indicated otherwise.

F. Reglets and Rebates: Form required reglets and rebates to receive frames, flashing and other equipment. Obtain required dimensions, details, and precise positions for work to be installed under other sections and form concrete accordingly.

G. Form Joints: Align joints and make watertight. Keep form joints to a minimum. Fill joints to produce smooth surfaces, intersections, and arises. Use polymer foam or equivalent fillers at joints and where forms abut or overlap existing concrete to prevent leakage of mortar.

H. Recesses, Drips, and Profiles: Provide smooth milled wood or pre-formed rubber or plastic shapes of types shown and required.

I. Cleanouts and Cleaning: Provide Temporary openings in all wall forms and other vertical forms for cleaning and inspection. Clean forms and surfaces to receive concrete prior to placing.

J. Re-Use: Clean and Recondition form material before re-use.

3.04 Application - Form Release Agent

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.

C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.05 Inserts, Embedded Parts, and Openings

A. All necessary pipe sleeves, anchors, or other required inserts shall be accurately installed as part of the work of other sections, according to Specification Section 03 30 00, Section 1.3.B for submittal requirements related to this scope.

B. Obtain approval before framing openings in structural members that are not indicated on drawings.

C. Provide formed openings where required for items to be embedded in passing through concrete work.

D. Locate and set in place items that will be cast directly into concrete.

E. Conduits or pipes:
   1. Locate so as not to reduce strength of the concrete
   2. Do not place pipes, other than conduits, in a slab 4-1/2" thick or less in any case. Conduit buried in a concrete slab shall not have an outside dimension greater than 1/3 the slab thickness nor be placed below the bottom reinforcing or over the top reinforcement.
   3. Sleeves: Pipe sleeves may pass through the slab or walls if not exposed to rusting or other deterioration and are of uncoated or galvanized iron or steel. Provide sleeves of diameter large enough to pass any hub or coupling on pipe, including any insulation.
   4. Conduits may be embedded in walls only if the outside diameter does not exceed 1/3 the wall thickness, are spaced no closer than 3 diameters on centers and not impair the strength of the structure.
   5. Clusters of Conduits
      a. Clusters of conduits embedded in a concrete slab shall not exceed 6 conduits per cluster and each conduit per cluster shall be spaced as per the above requirements. Conduit clusters exceeding this requirement shall be reviewed and approved by the Structural Engineer of Record prior to installation of the conduits.
      b. If more than one conduit cluster is required in a specific area of the slab, routing and spacing of the clusters shall be reviewed and approved by the structural engineer of record prior to installation of the conduits.

c. At no time shall the quantity and routing of clusters of conduits impair the strength of the concrete construction.

F. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.

G. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.

H. Install waterstops in accordance with manufacturer's instructions, so they are continuous without displacing reinforcement. Heat seal joints so they are watertight.

I. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.

J. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

3.06 Form Cleaning

A. Clean forms as erection proceeds, to remove foreign matter within forms.

B. Clean formed cavities of debris prior to placing concrete.

3.07 Formwork Tolerances

A. Construct formwork to maintain tolerances required by ACI SPEC-117, unless otherwise indicated.

B. Deflection: Limit Deflection of forming surfaces from concrete pressure to L/240.

C. Finish Lines: Position formwork to maintain hardened concrete finish lines within following permissible deviations.

1. Variation from Plumb:
   - In 10'-0" 1/4 inch
   - In any story or 20'-0" 3/8 inch
   - In 40'-0" or more 3/4 inch
2. Variation from Level or Grades Indicated
   - In 10'-0" 1/4 inch
   - In any story or 20'-0" 3/8 inch
   - In 40'-0" or more 3/4 inch
3. Cross-Sectional Dimensions
   a. Minus 1/4 inch
   b. Plus 1/2 inch

3.08 Field Quality Control

A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.

B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.

3.09 Form Removal

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and all superimposed loads as determined by testing field cured cylinders, but not sooner than specified in ACI PRC-347 Section 3.6.2.3. Load supporting forms may be removed when concrete has attained 75 percent of required 28 day compressive strength, but no sooner than 3 days, provided construction is reshored. Vertical formwork for cast in place concrete walls may be removed no sooner than 1 day following concrete placement, provided that the contractor can demonstrate that no sloughing or sagging of concrete will occur.
   1. Reshore structural members as specified per ACI PRC-347.
   2. Remove formwork progressively so unbalanced loads are not imposed on the structure.
   3. Avoid damage to concrete surfaces during removal.
   4. Remove formwork in same sequence as concrete placement to achieve similar concrete surface coloration.

END OF SECTION 03 1000

Section 03 2000
Concrete Reinforcing

PART 1 GENERAL

1.01 Section Includes

A. Reinforcing Steel for Concrete Foundations

B. Reinforcing Steel for Concrete Slabs on Grade

C. Supports and accessories for steel reinforcement.

1.02 Related Requirements

A. Section 03 1000 - Concrete Forming and Accessories.

B. Section 03 3000 - Cast-in-Place Concrete.

1.03 Reference Standards

A. ACI SPEC-301 - Specifications for Concrete Construction; 2020.

B. ACI 315 - Manual of Standard practice for Detailing Reinforced Concrete Structures; 2011.

C. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.

D. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement; 2022a.

E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2022.

F. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars; 2018, with Amendment (2020).

G. CRSI (DA4) - Manual of Standard Practice; 2023.

H. CRSI (P1) - Placing Reinforcing Bars, 10th Edition; 2019.

1.04 Quality Assurance

A. Comply with the pertinent provisions of 01 4000 - Quality Requirements

B. Perform work of this section in accordance with ACI SPEC-301.

1.05 DELIVERY STORAGE AND HANDLING

A. Comply with pertinent provisions of 01 6000 - Product Requirements delivering materials in a timely manner to ensure uninterrupted progress.

B. Bundle bars, tag with identification, and transport and store so as not to damage any material. Use metal tags indicating size, length and other marking shown on placement drawings. Maintain tags after bundles are broken

C. Avoid exposure to dirt, moisture or conditions harmful to reinforcement.

1.06 EXTRA MATERIAL

A. Provide an allowance of an additional 10% of the total reinforcing steel tonnage in addition to the quantities shown on the drawings. This additional steel shall be installed in sizes and locations as directed by the structural engineer.

PART 2 PRODUCTS

2.01 Reinforcement

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
   1. Deformed billet-steel bars.
   2. Unfinished.
   3. Only to be used for conditions where bars will not be welded.

B. Reinforcing Steel: ASTM A706/A706M, Grade 60 (60,000 psi) deformed low-alloy steel bars.
   1. Unfinished.
   2. Used in all cases where welding of bars is required.

C. Steel Welded Wire Reinforcement (WWR): Galvanized, deformed type; ASTM A1064/A1064M.

D. Reinforcement Accessories:
   1. Tie Wire: ASTM A1064/A1064M , Annealed copper bearing steel, minimum 16 gage, 0.0508 inch.
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement. Standard manufactured products shall conform to the Concrete Reinforcing Institute, "Manual of Stand Practice," latest edition.
   3. Use dense precast concrete supports with embedded wire ties for reinforcement placed on grade. Elsewhere, use wire bar supports.

E. Welding electrodes: AWS D1.4/D1.4M, Table 5.1 and 5.3, low hydrogen electrodes, E8018 for Grade 60 Steel.

2.02 Fabrication

A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice.

B. Bending and Forming
   1. Fabricate bars of the indicated sizes and bend and form to required shapes and lengths by methods not injurious to materials
   2. Do not heat reinforcement for bending
   3. Bend bars No. 6 size and larger in the shop only.
   4. Bars with unscheduled kinks or bends are subject to rejection.

PART 3 EXECUTION

3.01 Placement

A. Before placing bars, and again before concrete is placed, clean bars of loose rust and/or mill scale, dirt, oil, or any other coating that may be deleterious or could reduce bond with the concrete.

B. Securing in place:
   1. Accurately place bars and wire tie in precise position where bars cross.
   2. Bend ends of wire ties away from the forms.
   3. Wire tie bars to the corners of ties and stirrups.
   4. Support bars according to the Concrete Reinforcing Steel Institute (CRSI) "Placing Reinforcing Bars," using approved accessories and chairs.
   5. Place precast concrete cubes with embedded wire ties to supporting reinforcing steel bars in concrete placed on grade and in footings.
   6. Take adequate precautions to ensure that reinforcing bar position and spacing is maintained during concrete placement.

C. Maintain concrete cover around reinforcing as follows:
   1. Refer to Drawings for cover requirements

D. Splices:
   1. Do not splice reinforcing bars at the points of maximum stress except where indicated.
   2. Lap splices as shown or required to develop the full strength or stress of the bars.
   3. Stagger splices in horizontal wall bars at least 48" longitudinally in alternate bars and opposite faces.

3.02 Field Quality Control

A. Comply with all pertinent provisions of Division 01 Section 01 40 00 "Quality Requirements".

B. Supervision: Perform Work to this Section under supervision of a capable superintendent.

C. An independent testing agency, as specified in 01 4000 - Quality Requirements, shall inspect installed reinforcement for conformance to contract documents before concrete placement.

END OF SECTION 03 2000

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Section 03 3000
Cast-in-Place Concrete

PART 1 - GENERAL

1.01 Section Includes

A. Section Includes cast-in-place concrete, concrete materials, mixture design, placement procedures and finishes for the following:

B. Joint devices associated with concrete work.

C. Miscellaneous concrete elements, including equipment pads and footings.

D. Concrete curing.

E. Concrete Foundations

1.02 Related Requirements

A. Section 03 1000 - Concrete Forming and Accessories: Forms and accessories for formwork.

B. Section 03 2000 - Concrete Reinforcing.

C. Section 32 1313 - Concrete Paving: Sidewalks, curbs and gutters.

1.03 Reference Standards

A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).

B. ACI 315 - Details and Detailing of Concrete Reinforcement; 1999.

C. ACI PRC-305 - Guide to Hot Weather Concreting; 2020.

D. ACI PRC-306 - Guide to Cold Weather Concreting; 2016.

E. ACI PRC-308 - Guide to External Curing of Concrete; 2016.

F. ACI SPEC-301 - Specifications for Concrete Construction; 2020.

G. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.

H. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field; 2022.

I. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2023.

J. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2023.

K. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete; 2020.

L. ASTM C40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete; 2020.

M. ASTM C88 - Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate; 2018.

N. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.

O. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); 2023.

P. ASTM C117 - Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing; 2017.

Q. ASTM C131/C131M - Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine; 2020.

R. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2019.

S. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.

T. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2020.

U. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete; 2017.

V. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).

W. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2019.

X. ASTM C330/C330M - Standard Specification for Lightweight Aggregates for Structural Concrete; 2023.

Y. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).

Z. ASTM C595/C595M - Standard Specification for Blended Hydraulic Cements; 2021.

AA. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2023, with Editorial Revision.

BB. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2017.

CC. ASTM C989/C989M - Standard Specification for Slag Cement for Use in Concrete and Mortars; 2024.

DD. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.

EE. ASTM D75 - Standard Practice for Sampling Aggregates; 2019.

FF. ASTM D2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate; 2022.

GG. ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2018a.

1.04 Submittals

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Comply with the pertinent provisions of Section 01 6000 - Product Requirements Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
   1. Material Certificates: For Each of the following, signed by the manufacturer(s)
      a. Cementitious materials
      b. Admixtures
      c. Curing compounds
      d. Non-shrink grout
   2. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with the requirements:
      a. Aggregates

C. Mix Design: Submit proposed concrete mix design(s). For each concrete mixture:
   1. Inidcate Intended Locations for use
   2. Indicate proposed mix design complies with requirements of ACI SPEC-301, Section 4 - Concrete Mixtures.
   3. Indicate proposed mix design complies with requirements of ACI CODE-318, Chapter 5 - Concrete Quality, Mixing and Placing.
      a. Mixes shall be based on existing approved compressive strength test data for concrete mixes in accordance with ACI 318 Section 5.3.1.1 and requirements below:
         1) Strength Requirements: Design mixes for structural concrete for minimum 28-day compressive strengths required by Drawings and Specifications. The trial batch strength for each mix shall exceed indicated or specified strength by 750 psi or a lesser amount based on the standard deviations of strength test records according to ACI 318.
         2) Normal Weight Concrete Mix Design: Design all mixes for workability and durability of concrete. Control the mixes in accordance with the CBC, ACI 318 Section 5.2, ACI 211.1, and ACI CODE-318 Chapter 4, Building Code

Requirements for Reinforced Concrete. Make adjustments in cement content required for concrete strengths at Contractor's expense and do not exceed 0.50 (or as indicated on concrete general notes of approved plans) absolute water-cement or cement plus fly ash or slag ratio by weight. Do not use calcium chloride or any admix containing such material. Admixtures containing a material releasing nitrates in solution are limited to 0.06 percent by weight for the chloride ion.
Design the mixes with 1" maximum size, except maximum 1-1/2" size for foundations as submitted by the contractor and approved by the Structural Engineer of Record.

3) ACI 318 Section 5.3.1.1 with test records. Where a testing laboratory acceptable to the enforcement agency has records of compressive strength tests, a standard deviation shall be established. Test records from which a standard deviation is calculated shall:
   (a) Represent materials, quality control procedures and conditions similar to those expected, and changes in materials and proportions within the test records shall not have been more restricted than those for proposed work.
   (b) Represent concrete produced to meet a specified strength or strengths f' c within 1,000 psi of that specified for proposed work.
   (c) Must consist of at least 30 consecutive tests or two groups of consecutive tests totaling at least 30 tests as defined in ACI 318 Section 5.3.1.1, except as provided in ACI 318 Section 5.3.1.2.

4. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

D. Test Reports: Submit report for each test or series of tests specified.

E. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.

F. Delivery Tickets: With each transit truck provide delivery ticket, signed by an authorized representative from the batch plan, containing all information required by ASTM C94/C94M , as well as time batched, type of brand of cement, cement content, maximum size of aggregate and total water content.

1.05 Quality Assurance

A. Comply with the pertinent provisions of 01 4000 - Quality Control

B. Qualifications
1. Installer Qualifications: An experienced installer who has completed concrete work similar in material, design, and extent to that indicated for this project and whose work has resulted in construction with a record of successful in-service performance. Adequate numbers of trained and experienced personnell shall be used.
2. Manufacturer Qualifications: The production facility supplying hydraulic cement concrete shall have a current Certification of Ready Mixed Concrete Production Facilities from the National Ready Mixed Concrete Association, or equivalent.
3. Concrete Testing and Inspection Services: The owner shall engage a qualified Independent Testing Agency to perform evaluation test and special inspections per Structural Notes on Drawings and as required per the code. Personnel conducting test

shallbe qualified as ACI Concrete Field Testing Technician, Grade 1 according to ACI CP-1 or an equivalent program.

C. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.

D. Follow recommendations of ACI PRC-305 when concreting during hot weather.

E. Follow recommendations of ACI PRC-306 when concreting during cold weather.

F. Source Quality Control: Refer to the following paragraphs for specific procedures. Concrete materials which, by previous tests or actual service, have shown conformance may be used without testing when so approved by SEOR. Testing laboratory shall perform the following conformance testing

1. Cementitious Material Test: The concrete supplier shall furnish to the enforcement agency certification from the cement manufacturer that the cement proposed for use on the project has been manufactured and tested in compliance with the requirements of ACI 318 Section 3.2.1 and the ASTM standards listed in the materials section of this Specification.
2. Aggregates for Normal Weight Concrete: Test the aggregate before and after concrete mix is designed and whenever character of aggregate varies or source of material is changed in accordance with ASTM C33/C33M and CBC. Include a sieve analysis. Obtain samples of aggregates at the dry batching or ready-mix concrete plant in accordance with ASTM D75 and perform tests for the properties listed in the following table:

Physical Properties		
Physical Properties, units	Test Method	Minimum Values
Sieve analysis	ASTM C136/C136M	Loss after 5 cycles not more than 8 percent of coarse aggregate, nor more than 10 percent of fine aggregate
Organic impurities	ASTM C40	Fine aggregate not darker than reference standard color
Soundness	ASTM C88	
Abrasion	ASTM C131/C131M	Weight loss not more than 10.5 percent after 100 revolutions, 42 percent after 500 revolutions
Deleterious materials	ASTM C33/C33M A STM C330/C330M	
Materials finer than No. 200 sieve	ASTM C117	Not over 1 percent for gravel, 1.5 percent for crushed aggregate
Reactivity potential	ASTM C227, C289, C342	Ratio of silica released to reduction in alkalinity not to exceed 1.0.
Sand equivalent	ASTM D2419	California sand equivalent values operating range not below 71 percent

G. Compliance with Regulations: All materials shall comply with the current rules and regulations of the local air quality management district, with the rules regarding volatile organic compounds, and with FDA rules and regulations for dangerous substances in construction products.

H. Allowable Tolerances: Construct concrete conforming to the tolerances specified in ACI 117, as applicable, unless exceeded by the requirements of regulatory agenciesor otherwise indicated or specified.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with pertinent provisions of Section 01 6000 - Product Requirements.

B. Ready-mix concrete shall be mixed and delivered in accordance with ASTM C94/C94M . Each batch of concrete delivered to the Project site shall be accompanied by a time slip bearing departure time and signature of batch plant supervisor. Concrete shall be placed within 90 minutes after start of mixing. Concrete which has developed initial set shall not be used. Concrete which has partially hardened shall not be used. Deliver all materials in timely manner to ensure uninterrupted progress of the work.

C. Deliver, store and handle all cement and aggregate materials so as to prevent their deterioration or intrusion by foreign matter. Deteriorated or contaminated materials shall not be furnished.

1.07 JOB CONDITIONS

A. Cold Weather Requirements:
1. Follow recommendations of ACI 306R A when concreting during cold weather.
2. Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near-freezing weather. Surfaces, in which concrete is to come in contact with, shall be free from frost or ice. No frozen materials or materials containing ice shall be furnished.
3. When placing concrete during freezing or near-freezing weather the mix shall have a temperature of at least 50 degrees F., but not more than 90 degrees F. when cement is added. Concrete shall be maintained at a temperature of at least 50 degrees F. for at least 72 hours after placing or until it has thoroughly hydrated. When necessary, concrete materials shall be heated before mixing. Special precautions shall be provided for protection of transit-mixed concrete.

B. Hot Weather Requirements:
1. Follow recommendations of ACI 305R when concreting during hot weather.
2. During hot weather, proper attention shall be provided for ingredients, production methods, handling, placing, protection and curing, to prevent excessive concrete temperatures or water evaporation which could impair required strength or durability.

PART 2 PRODUCTS

2.01 Formwork

A. Comply with requirements of Section 03 1000.

2.02 Reinforcement Materials

A. Comply with requirements of Section 03 2000.

2.03 Concrete Materials

A. Cement:ASTM C595/C595M or ASTM C150/C150M, Type II - Moderate Portland type, low alkali. Provide Type V where concrete is in contact with soil corrosive to concrete.

B. Concrete aggregate is to be well graded (in Zone 2) per the Coarseness Factor Method.

C. Water: Water shall be potable and free from deleterious matter or shall otherwise satisfy the requirements of ASTM C1602/C1602M.
   1. Acquire aggregates for entire project from same source.

D. Pozzolan: ASTM C618, Class F or N Fly Ash (Class C Not permitted) subject to the conditions of the CBC, containing two percent or less carbon. Fly ash shall not be used in excess of 25 percent by weight of total cement quantity for structural concrete. Where fly ash replacement is 25% or higher, maximum water-cement ratio shall be 0.45. Fly ash need not be included in lightweight concrete mix designs.

E. Ground Granulated Blast Furnace Slag: ASTM C989/C989M Slag shall not be used in excess of 25 percent by weight of total cement quantity for structural concrete.
   1. Slag shall not be used in concrete to be polished.

F. Fly Ash: ASTM C618, Class C or F.

G. Water: Clean, potable and not detrimental to concrete, complying with ASTM C94/C94M and ASTM C1602/C1602M

2.04 Admixtures

A. Admixtures to be used in concrete shall be subject to prior approval by the Structural Engineer. Where more than one admixture is used, they shall be compatible. Use of admixtures shall be consistent throughout Work.

B. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

C. Air Entrainment Admixture: ASTM C260/C260M.

D. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.
   1. Only one brand. When used, are subject to approval of Structural Engineer of Record, and must reduce the mixing water at least 10 percent without entraining air in excess of 2 percent by volume. If the water reducing agent entrains more than 2 percent air, the water reduction shall be at least 12 percent, but in no case shall the water reducing agent entrain air in excess of 4 percent.

E. Water Reducing Admixture: ASTM C494/C494M Type A.

1. Only one brand. When used, are subject to approval of Structural Engineer of Record, and must reduce the mixing water at least 10 percent without entraining air in excess of 2 percent by volume. If the water reducing agent entrains more than 2 percent air, the water reduction shall be at least 12 percent, but in no case shall the water reducing agent entrain air in excess of 4 percent.

2.05 Accessory Materials

A. Non-Shrink Cementitious Grout: Premixed compound consisting of nonmetallic aggregate, cement, water reducing and plasticizing agents.
   1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
   2. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 7,000 pounds per square inch.
   3. Non-gas-forming and free of oxidizing catalysts and inorganic accelerators, used as dry or damp pack, or mixed to a 20-second flow (CRC-C 611), without segregation or bleeding at any temperature between 45 degrees F and 100 degrees F.
   4. Low-Slump, Dry Pack Products:
      a. Drypack: Field mixture of I part Portland cement to 2 parts fine aggregate mixed to a damp consistency such that a ball molded in the hands will stick together and hold its shape. In lieu of field mixing, Contractor may use factory mixed drypack material, such as Master Builders "Set Grout." f'c shall be equal to 5,000 psi.

B. Non-Shrink Epoxy Grout: Moisture-insensitive, two-part; consisting of epoxy resin, nonmetallic aggregate, and activator.

2.06 Bonding and Jointing Products

A. Bonding Agent: "Weld-Crete," manufactured by Larsen Products Co., P.O. Box 2127, Rockville, MD 20852, Master Builders "Concresive," or equal.

B. Construction Joint Materials: "Key-Kold" or "Kwik-Joint," of profiles indicated.

C. Slab Isolation Joint Filler: 1/2-inch thick, height equal to slab thickness, with removable top section forming 1/2-inch deep sealant pocket after removal.

D. Expansion Joint Fillers: Preformed strips, non-extruding and resilient bituminous type, of thickness indicated, conforming to ASTM D 1751 and ASTM D1752.

2.07 FINISHING AND CURING MATERIALS

A. Finishing Aids: Liquid applied at time of concrete finish to increase hydrolysis and improve workability and finish.
   1. Products:
      a. Hydrocrete: HydroCrete or HydroGrind :www.hydro-crete.com/
      b. Wagman Metal Products: G3 Finish Aid: www.wagmanmetal.com
      c. Penetron; Peneseal FH-PS: www.penetron.com/#sle.
      d. Solomon Colors; Solomon Colors Lythic Day1: www.solomoncolors.com/#sle.

B. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.

1. Application: Use at exterior flatwork.
2. Product dissipates within 4 to 6 weeks.

C. Curing Agent, Water-Cure Equivalent Type: Clear, water-based, non-film-forming, liquid-water cure replacement agent.
   1. Application: Use at interior slabs.
   2. Comply with ASTM C309 standards for water retention.
   3. Compressive Strength of Treated Concrete: Equal to or greater than strength after 14-day water cure when tested in accordance with ASTM C39/C39M.
   4. VOC Content: Zero.

D. Moisture-Retaining Sheet: ASTM C171.
   1. Curing paper, regular.
   2. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard.

2.08 CONCRETE MIXING

A. Furnish ready-mixed concrete from an approved commercial off-site plant. Conform to ASTM C 94, except materials, testing, and mix designs as specified herein. Use transit mixer trucks equipped with automatic devices for recording number of revolutions of drum. Comply with CBC Section, 1905.

B. Admixtures: All approved admixtures shall be introduced into the concrete at the batch plant. Field additions are not acceptable.

C. Slump: Adjust quantity of water so concrete at point and time of placing does not exceed the slumps per plans when tested according to ASTM C143. Use the minimum water necessary for workability required by part of structure being cast.

D. For compressive strength, density, fly ash or slag content, slump, and water-cement ratio, refer to the general notes in the plans.

2.09 Mixing

A. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 Examination

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 GENERAL

A. Time of Placing: Do not place concrete until reinforcement, conduits, outlet boxes, anchors, hangers, sleeves, bolts, and other embedded materials are securely fastened in place. Contact the inspector at least 24 hours before placing concrete; do not place concrete until inspected by

the inspector.

B. Pouring Record: A record shall be kept on the Project site of time and date of placing concrete in each portion of structure. Such record shall be maintained on the Project site until Substantial Completion and shall be available for examination by the SEOR.

3.03 Preparation

A. Earth Subgrade: Dampen 24 hours before placing concrete, but do not muddy. Re-roll where necessary for smoothness and remove loose material.

B. Verify that forms are clean and free of rust before applying release agent.

C. Reglets and Rebates:
1. Form reglets and rebates in concrete to receive flashing, frames and other equipment as detailed and required. Coordinate dimensions and locations required with other related Work.
2. If concrete slabs on grade adjoin a wall or other perpendicular concrete surface, form a reglet in wall to receive and carry horizontal concrete Work. Reglet shall be full thickness of the slab and shall be 3/4 inch wide, unless otherwise indicated. Requirement does not apply to exterior walks, unless specifically indicated.

D. Screeds: Install screeds accurately and maintain at required grade or slab elevations after steel reinforcement has been installed , but before starting to place concrete. Install screeds adjacent to walls and in parallel rows not to exceed 8 feet on centers.

E. Screeds Over Vapor Barrier: Use weighted pad or cradle type screeds and do not drive stakes through the vapor barrier. Check with an instrument level, transit, or laser.

F. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

G. Remove all free water from forms before concrete is deposited. Remove hardened concrete, debris, and foreign materials from interior surfaces of forms, exposed reinforcing, and from surfaces of mixing and conveying equipment.

H. Wetting: Wet wood forms sufficiently to tighten up cracks. Wet other materials sufficiently to reduce absorption and to help maintain concrete workability.

I. Gravel Fill: Recompact disturbed gravel and bring to correct elevation.

J. All concrete shall be thoroughly consolidated by suitable means during placement and shall be thoroughly worked around reinforcement and embedded fixtures and into corners of forms.

3.04 Placing Concrete

A. Sheet Vapor Retarders:
1. Place, protect, and repair sheet vapor retarder according to ASTM E1643, section 03 0516 - Underslab Vapor Barrier, and manufacturer’s written instructions.

B. Conveying and Placing:
   1. Do not place concrete until reinforcing steel and forms or decks have been approved by the Inspector and other authorities having jurisdiction. Concrete shall be placed only under direct observation of the inspector. Do not place concrete outside of regular working hours, unless the inspector has been notified at least 48 hours in advance.
   2. Comply with CBC Sections 1905.9 and 1905.10.
   3. Concrete shall be conveyed from mixer to location of final placement by methods, which will prevent separation or loss of materials. Place concrete in horizontal layers not more than 18" thick within 90 minutes after water is first added to the batch.
   4. In placing concrete in columns, walls or thin sections, provide openings in forms, elephant trunks, tremies or other recognized devices, to prevent segregation and accumulation of partially hydrated concrete on forms or metal reinforcement above level of concrete being placed. Such devices shall be installed so that concrete will be dropped vertically. Unconfined vertical drop of concrete from end of such devices to final placement surface shall not exceed 5-feet for concealed concrete or over 3-feet for exposed concrete.
   5. Concrete shall be placed as a continuous operation until placing of panel or section is completed. Top surfaces of vertically formed lifts shall be level.
   6. Concrete shall be thoroughly consolidated during placement, and shall be worked around reinforcement and embedded fixtures with mechanical vibrators.
   7. Where new concrete is placed against or on old or existing concrete, apply bonding agent to surface of old concrete prior to placement of new concrete.

C. Compaction and Screeding:
   1. Compacting: Compact each layer of the concrete as placed with mechanical vibrators or equivalent equipment. Transmit vibration directly to concrete and in no case through the forms unless approved. Accomplish thorough compaction. Supplement by rodding or spading by hand adjacent to forms. Compact concrete into corners and angles of forms and around reinforcement and embedded fixtures. Recompact deep sections with congestion due to reinforcing steel as required.
   2. Operation of Vibrators: Do not horizontally transport concrete in forms with vibrators nor allow vibrators to contact forms or reinforcing. Push vibrators vertically into the preceding layers that are still plastic and slowly withdraw, producing maximum obtainable density in concrete without creating voids or segregation. In no case disturb concrete that has partially set. Vibrate at intervals not exceeding two-thirds the effective visible vibration diameter of the submerged vibrator. Avoid excessive vibration that causes segregation.
   3. Concrete must be vibrated at all headers, junction boxes and duct to insure that the concrete completely fills underneath the duct system. Care must be taken not to over vibrate. Shrinkage and temperature reinforcement above the duct systems shall be in accordance with ACI 318. Care shall be taken during concrete placement and, in particular, during concrete vibration, to prevent rising of top reinforcement within the slab. Contractors placing the concrete shall carefully hand finish a minimum of 24" [610mm] adjacent to junction box access openings so that the top of finished concrete and junction box access openings are flush with each other.
   4. Tamp freshly placed concrete with a heavy tamper until at least 3/8 inch of mortar is brought to surface. Concrete shall then be tamped with a light tamper and screeded with a heavy straightedge until depressions and irregularities are eliminated, and surface is true to finish grades or elevations. Remove excess water and debris.

5. Where slabs are to receive separate cement finish or mortar setting bed, continued tamping to raise mortar to surface is not performed. Laitance shall be removed by brushing with a stiff brush or by light sandblasting to expose clean top surface of coarse aggregate.
6. Where concrete is to recieve polished finish:
   a. Screed with a vibratory straightedge and strike off at correct elevations.
   b. Do not leave the vibratory screed at any one location while the vibrator is running; move it continuously across the slab.
   c. Do not use a highway straightedge or bump cutter on the concrete surface during finishing operations.

D. Floating and Troweling:
1. After concrete has been placed, struck off, consolidated, and restraightened, concrete shall not be worked further until ready for floating. Restraightening operation is best accomplished by use of 8 foot to 10 foot wide bull float. Power floating operations shall begin when the water sheen has disappeared, and when the mix has stiffened sufficiently to permit proper operation of power-driven float.
2. Consolidate surface with power-driven floats. Hand floating with wood or cork faced floats shall be used in locations inaccessible to power driven machine. Surface shall be restraightened at this stage with ten foot highway straightedge applied at not less than two different angles.
3. High spots shall be cut down and low spots filled during this procedure to produce planes checking true under straightedge in any direction. Uniformly slope surfaces to drains where occurs.
4. Restraightening operation shall be followed by final float pass to uniform, smooth, granular texture.
5. Where concrete is to recieve polished finish:
   a. Machine-trowel the slab edges and as close as possible to walls and columns. Minimize hand-finishing.
   b. The troweled surface shall be free of trowel marks, burn marks, and mottling.
   c. Do not trowel over adjacent hardened concrete surfaces. Inspect trowel machines prior to each pass and remove any accumulated mortar.

E. Joints: Comply with CBC Section 1906.4. Locate joints in concrete only where shown or approved and obtain prior approval for points of stoppage of any pour. Clean and roughen surface of construction joints by removing entire surface and exposing 1/4" of clean coarse aggregate solidly embedded in mortar matrix by chipping, use of an approved retarder agent, or equal. Water and keep hardened concrete wet for not less than 24 hours before placing the next lift or abutting concrete. Cover the horizontal surfaces of existing or previously placed and hardened concrete with a 2" thick layer of fresh concrete of required mix less 50 percent of coarse aggregate just before balance of concrete is placed.

F. Vertical Elements: Stop placement of concrete in walls and columns 1 1/2" below bottom of beams or supported slabs. Stop placement at sills and heads of wall openings in the same manner. Allow concrete in vertical elements to be in place at least 2 hours and until vertical settlement has ceased before placing concrete for floor framing.

G. Correction of Segregation: Before placing next layer of concrete, and at the top of each placement for vertical elements, remove all concrete containing excess water or fine aggregate, or showing deficiency of coarse aggregate, and fill the space with compacted concrete of correct proportions. Comply with CBC Section, 1906.4.

H. Filling, Leveling and Patching:
   1. Concrete slabs exhibiting high or low spots and indicated to receive resilient floor covering or soft floor covering, shall have surfaces repaired. High spots shall be honed, or ground with power-driven machines to required tolerances. Low spots shall be filled with latex underlayment, installed in strict accordance with manufacturer's written recommendations.
   2. Holes resulting from form ties or sleeve nuts shall be solidly packed, through exterior walls, by pressure grouting with cement grout, as specified. Grouted holes on exposed surfaces shall be screeded flush and finished to match adjoining surfaces.

I. Cement Base: Cement base shall be of the height, thickness, and shape detailed. Base shall be reinforced with one inch mesh, 18 gage, zinc-coated wire fabric. Base finish mixture shall be one part Portland cement, 2 parts of fine aggregate and one part pea gravel. Colored cement base shall include a chemically inert mineral oxide pigment in the mix.

3.05 Slab Jointing

A. Locate joints as indicated on drawings.

B. Anchor joint fillers and devices to prevent movement during concrete placement.

C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.

3.06 Curing and Protection

A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. All curing shall be per CBC Section 1905.11. Keep forms containing concrete in a wet condition until removed. Keep concrete continuously moist for not less than 7 days after placement. Keep concrete above 50ºF and moist with a fine fog water spray until protected by curing media.

D. Forms containing concrete, top of concrete between forms, and exposed concrete surfaces after removal of forms shall be maintained in a thoroughly wet condition for at least 7 consecutive days after placing. Use the water curing method, curing sheet material, or a clear liquid membrane-forming curing compound except as otherwise specified.

E. During times of dry or excessive winds, high ambient temperature, low humidity, or other ambient conditions causing rapid drying, use specified evaporation retardant and finishing aid material according to the manufacturers instructions and cure concrete with a fine fog spray of

water, or equal, applied both during and after finishing and continued until final curing operations are started.

F. Within 24 hours after finishing, exterior slabs and paving, and interior slabs to receive cement topping or mortar setting beds, shall be covered with sand to a depth of 2 inches and kept thoroughly wet for 7 days.
   1. Instead of sand covering, exterior walks and paving where no other surface treatment is specified, may be cured with clear liquid curing compound immediately installed in accordance with manufacturer's directions.
   2. At areas to recieve polished concrete finish, silcate curing compounds are prohibited.

3.07 GROUTING AND DRYPACKING

A. Install as indicated or required. Where grouting and drypacking is part of the work of other sections, it shall conform to the following requirements, as applicable.

B. Drypacking: Mix materials thoroughly with minimum amount of water. Install drypack by forcing and rodding to fill voids and provide complete bearing under plates. Finish exposed surfaces smooth and cure with damp burlap or liquid curing compound.

C. Non-Shrink Grouting:
   1. Mixing: Mix the approved non-shrink grout material with sufficient water per manufacturers recommendations.
   2. Application: Surfaces to receive the non-shrink grout shall be clean, and shall be moistened thoroughly immediately before placing the mortar. Before grouting, surfaces to be in contact shall be roughened and cleaned thoroughly, all loose particles shall be removed and the surface flushed thoroughly with neat cement grout immediately before the grouting mortar is placed. Place fluid grout from one side only and puddle, chain, or pump for complete filling of voids; do not remove the dams or forms until grout attains initial set. Finish exposed surfaces smooth, and cure as recommended by grout manufacturer.

3.08 Field Quality Control

A. Comply with pertinent provisions of Section 01 4000 - Quality Control.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Testing/Evaluation of Concrete: Conform to CBC and ACI. Testing Laboratory shall perform following tests. Samples for testing shall be obtained in accordance with AASTM C172/C172M, and shall be taken from as close to point of placement as possible.
   1. Compressive Strength Tests: Cast one set of three or more cylinders from each days placing and each 50 cubic yards, or fraction thereof, or not less than once for each 2,000 square feet of surface area for slabs and walls, of each strength of structural concrete. Date cylinders, assign record number, and tag showing the location from which sample was taken. Also record slump test result of sample. Do not make more than two series of tests from any one location or batch of concrete.
   2. Test Cylinders: Samples will be made in accordance with ASTM C172/C172M . Cast cylinders according to ASTM C31/C31M ; 24 hours later, store cylinders under moist curing conditions at about 70 F. Test according to ASTM C39/C39M at 7 and 28 day ages.

The remaining cylinder shall be kept in reserve in case tests are unsatisfactory.

D. Core Tests: Comply with CBC and ACI. If tests show that compressive strength of any concrete falls below required minimum at 28 day age, additional curing and testing of concrete which unsatisfactory test reports represent may be directed. Testing Laboratory shall take and test drilled cores as directed in accordance with ASTM C42. Contractor shall refill core holes with drypack concrete of the same compressive strength required for cored concrete. If core tests results are unsatisfactory, Contractor shall furnish required labor, equipment, and weights, and the Testing Laboratory shall conduct load testing on involved parts of building or structure as directed. Contractor shall bear additional curing and test costs, including Testing Laboratory costs, for concrete not meeting required compressive strength at 28 day age even if testing demonstrates that concrete has eventually attained required minimum compressive strength, and all costs for required corrections or removals and replacements as directed and required for approved construction.

E. Level of Floors: Continuously monitor concrete placing to maintain level floor by use of an instrument level, transit, or laser.

F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.09 CLEAN UP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

3.10 Protection

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION 03 3000

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Section 04 2000
Unit Masonry

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete block.

B. Mortar and grout.

C. Installation of Reinforcement

D. Placement of anchor bolts, assemblies and embeds

E. Grouting of plates and embeds

F. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 03 2000 - Concrete Reinforcing: Reinforcing steel for grouted masonry.

B. Section 03 3000 - Cast-in-Place Concrete: Installation of dovetail slots for masonry anchors.

C. Section 07 9200 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

A. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2023.

B. ASTM C140/C140M - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units; 2023a.

C. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2018.

D. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

E. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2018.

F. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.

G. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2024.

H. ASTM C476 - Standard Specification for Grout for Masonry; 2023.

I. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete; 2016.

J. ASTN C1019 - Standard Test Method for Sampling and Testing Grout, 2016

K. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms; 2023b.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Mix Designs and test results:
   1. One of the following for each mortar mix
      a. Mix designs indicating type and proportions of ingredients in compliance with the proportion specification of ASTM C270, or
      b. Mix designs and mortar tests performed in accordance with the property specification of ASTM C270
   2. One of the following for each grout mix
      a. Mix designs indicating type and proportions of ingredients in compliance with the proportion specification of ASTM C476, or
      b. Mix designs and grout strength tests performed in accordance with the property specification of ASTM C476, or
      c. Compressive strength tests performed in accordance with ASTM C1019, and slump flow and Visual Stability Index (VSI) as determined by ASTM C1611/C1611M.

C. Material Certificates- Material certificates for the following, certifying that each material is in compliance.
   1. Anchors, ties, fasteners, and metal accessories
   2. Masonry Units
   3. Mortar and grout materials
   4. Self-Consolidating grout

D. Construction Procedures
   1. Cold weather construction procedures
   2. Hot weather construction procedures

E. Samples of cured dry mortar showing finish color.

F. Cured sealant colors for control joints.

G. Control Joint Filler, 12" pieces of each size and type.

1.05 QUALITY ASSURANCE

A. Comply with the pertinent provisions of 01 4000 "Quality Requirements."

B. Comply with provisions of the following codes and standards except where exceeded by requirements of the contract documents.
   1. California Building Code (CBC), 2022

2. ACI 530/530.1/ERTA, Building Code Requirements for Masonry Structures, 2016

C. Inspections:
   1. General: Structural verifications inspections and test shall be performed in accordance with the following codes and standards:
      a. California Building Code (CBC), 2022
      b. ACI 530/530.1/ERTA, Building Code Requirements for Masonry Structures, 2016
   2. Owner Requirements:
      a. The owner or owner's agent shall employ one or more approved agencies to perform inspections during construction as required by code and shown in the contract documents and specifications
   3. Special Inspection
      a. Qualifications: The special inspector(s) shall provide written documentation to the building official demonstrating his or her competence and relevant experience or training. The experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of special inspection activities for projects of similar complexity and material quantities.
      b. Special Inspection Report Requirements
         1) The special inspector shall keep record of inspections
         2) The special inspector shall furnish inspection reports to the building official and to the Architect and Engineer of Record.
         3) Reports shall indicate that work inspected was or was not completed in conformance to approved construction documents.
         4) Discrepancies shall be brought to the immediate attention of the contractor for correction
         5) If not corrected discrepancies shall be brought to the attention of the building official, and the Architect and Engineer of Record prior to completion of that phase of work.
         6) A final report documenting the special inspections and correction of any discrepancies noted shall be submitted to the building official.
   4. Contractor Requirements
      a. Special inspection is in addition to the contractor's quality control inspections and testing. The contractor's quality control inspections and testing shall occur prior to special inspection and reports shall be available to the special inspector.
      b. The contractor will notify, in writing, the owner or owner's agent at least 48 hours in advance of special inspection required.
      c. The contractor shall ensure that the work for which special inspection is required remains accessible and exposed for special inspection purposes until completion of the required special inspection.
      d. Any contractor responsible for the construction of the main wind and/or seismic force resisting system shall submit a written statement of responsibility to the building official and owner prior to commencement of work on the system or component. The statement of responsibility shall contain acknowledgement and awareness of the special inspection requirements.
   5. Inspections Required per Drawings.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

B. Do not use damaged masonry units, damaged components of structure, damaged packaged materials,

C. Protect cementitious materials for mortar and grout from precipitation and groundwater

D. Do not use masonry materials that are contaminated

E. Store different aggregates separately

F. Protect reinforcement, ties and metal accessories from permanent distortions and store them off the ground.

1.07 PROJECT CONDITIONS

A. Masonry Protection - Cover top of unfinished masonry work to protect it from moisture intrusion

B. Hot Weather Construction - Implement approved hot weather procedures and comply with the following:
   1. Preparation When the ambient air temperature exceeds 100 degrees F, or exceeds 90 degrees F with a wind velocity greater than 8 mph:
      a. Preparation When the ambient air temperature exceeds 100 degrees F, or exceeds 90 degrees F with a wind velocity greater than 8 mph:
         1) Maintain sand piles in a damp, loose condition
         2) Provide necessary conditions and equipment to produce mortar having a temperature below 120°F
   2. Construction — While masonry work is in progress
      a. When the ambient air temperature exceeds 100°F, or exceeds 90°F with a wind velocity greater than 8 mph:
         1) Maintain temperature of mortar and grout below 120°F.
         2) Flush mixer, mortar transport container, and mortar boards with cool water before they come into contact with mortar ingredients or mortar.
         3) Maintain mortar consistency by retempering with cool water.
         4) Use mortar within 2 hr of initial mixing.
   3. Protection — When the mean daily temperature exceeds 100°F or exceeds 90°F with a wind velocity greater than 8 mph, fog spray all newly constructed masonry until damp, at least three times a day until the masonry is three days old.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Concrete Block: Comply with referenced standards and as follows:
   1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depth of 8 inches.
   2. Load-Bearing Units: ASTM C90, medium weight.
      a. Hollow block, as indicated.
      b. Exposed Faces: Manufacturer's standard color and texture.

1) Split Face, Color: 60B568A
c. Manufacturers:
1) Air Vol Block LLC Precision Concrete Masonry Units; or approved equal

2.02 MORTAR AND GROUT MATERIALS

A. Mortar
1. Provide mortar conforming to the following parameters
a. Conform to ASTM C270
b. Comply with Section 2103.2 of the 2022 CBC
c. Type S Mortar
d. 2,000 psi minimum 28 day compressive strength
e. Manufacturer:
1) Air Vol Block LLC, 1 Suburban RD, San Luis Obispo CA 93401, 805-543-1314; or approved equal
2) Mortar Color: 5663B
(a) Provide lime-proof, inorganic compounds, which shall not exceed 15% by weight of the cement, unless otherwise directed by manufacturer.
(b) Carbon black shall not exceed 3% by weight of the cement.
(c) Color to be factory blended for full color saturation of mortar joint and to be factory packaged for unitized jobsite mixing at a ratio of one unit of color per sack of cementitious material (Portland cement, lime, or masonry cement).

B. Grout
1. Provide grout conforming to the following parameters
a. Conform to ASTM C476
b. Comply with Section 2103.3 of the 2022 CBC
c. 2,000 psi minimum 28 day compressive strength. Determine compressive strength of grout in accordance with ASTM C1019.
d. Do not use admixtures unless accepted by the Engineer of Record. Field addition of admixtures is not permitted in self-consolidating grout.

C. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
1. Hydrated Lime: ASTM C207, Type S.
2. Grout Aggregate: ASTM C404.

D. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.

2.03 REINFORCEMENT AND ANCHORAGE

A. Reinforcing Steel: Type specified in Section 03 2000; size as indicated on drawings; uncoated finish.

2.04 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.

B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.

C. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.05 MORTAR AND GROUT MIXING

A. Mortar
1. Mix cementitious materials and aggregates between 3 and 5 minutes in a mechanical batch mixer with a sufficient amount of water to produce a workable consistency. Do not hand mix mortar. Maintain workability of mortar by remixing or retempering. Discard mortar which has begun to stiffen or is not used within 2-1/2 hours after initial mixing.
2. Limit the weight of mineral oxide or carbon black pigments added to project-site prepared mortar to the following maximum percentages by weight of cement:
   a. Pigmented portland cement-lime mortar
      1) Mineral oxide pigment = 10 percent
      2) Carbon black pigment = 2 percent
   b. Pigmented mortar cement mortar
      1) Mineral oxide pigment = 5 percent
      2) Carbon black pigment = 1 percent
   c. Pigmented masonry cement mortar
      1) Mineral oxide pigment = 5 percent
      2) Carbon black pigment = 1 percent

   Do not add mineral oxide or carbon black pigment to preblended colored mortar or colored cement.
3. Do not use admixtures containing more than 0.2 percent chloride ions

B. Grout
1. Except for self-consolidating grout, mix grout in accordance with the requirements of ASTM C476.
2. Unless otherwise required, mix grout other than self-consolidating grout to a consistency that has a slump between 8 and 11 inches.
3. Proportioning of self-consolidating grout at the project site is not permitted. Do not add water at the project site except in accordance with the self-consolidating grout manufacturer's recommendations.

C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.
1. Include verification that foundations are constructed within a level alignment tolerance of +/- 1/2 inch.

B. Verify that related items provided under other sections are properly sized and located.
   1. Include verification that reinforcing dowels are positioned in accordance with the project drawings.

C. If stated conditions are not met notify the Engineer of Record.

3.02 PREPARATION

A. Clean reinforcement and shanks of anchor bolts by removing mud, oil, or other materials that will adversely affect or reduce bond at the time mortar or grout is placed. Reinforcement with rust, mill scale, or both are acceptable without cleaning or brushing provided that the dimensions, of a cleaned sample are not less than required by the ASTM specification governing the reinforcement.

B. Prior to placing masonry, remove laitance, loose aggregate, and anything else that would prevent mortar from bonding to the foundation.

C. Wetting Masonry units
   1. Concrete Masonry - Unless otherwise required, do not wet concrete masonry before laying. Wet cutting is permitted.

D. Debris - Construct grout spaces free of mortar dropping, debris, loose aggregates, and any material deleterious to masonry grout.

E. Reinforcement - Place reinforcement and ties in grout spaces prior to grouting

F. Cleanouts - Provide cleanouts in the bottom course of masonry for each grout pour when grout pour exceeds 5 ft 4 in.
   1. Construct cleanouts so that the space to be grouted can be cleaned and inspected. In solid grouted masonry, space cleanout horizontally a maximum of 32 inches on center.
   2. Construct cleanouts with an opening of sufficient size to permit removal of debris. The minimum opening dimension shall be 3 in.
   3. After cleaning, close cleanouts with closures braced to resist grout pressure.

3.03 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
   1. Bond: Running. Unless Otherwise required on the drawings
   2. Coursing: One unit and one mortar joint to equal 8 inches.

3.04 PLACING AND BONDING

A. Placing mortar units

1. Mortar joints at foundations - In the starting course on the foundations and other supporting members, construct bed joints so that the bed joint thickness is a least /1/4 inch and not more than:
   a. 1-1/4" when the first course of masonry is solid grouted and supported by a concrete foundation.
2. Bed and head joints - Unless otherwise required construct 3/8 in thick bed and head joints except at foundation. Construct joints that also conform to the following
   a. Fill holes not specified in exposed and below grade masonry with mortar.
   b. Unless otherwise required, tool joint with a round jointer when the mortar is thumbprint hard.
   c. Remove masonry protrusions extending 1/2 inch or more into cells or cavities to be grouted.
3. Hollow units - Place hollow units so:
   a. Face shells of bed joints are fully mortared
   b. Webs are fully mortared in:
      1) all courses of piers, columns and pilasters;
      2) when necessary to confine grout or insulation.
   c. Head joints are mortared, a minimum distance from each face equal to the face shell thickness of the unit.
   d. Vertical cells to be grouted are aligned and unobstructed openings for grout are provided in accordance with the project drawings.
4. Open units with beveled ends - Fully grout open-end units with beveled ends. Head joints of open-end units with beveled ends need not be mortared. At the beveled ends, form a grout key that permits grout within 5/8 inch of the face of the unit to prevent leakage of grout.
5. All Units
   a. Place clean units while the mortar is soft and plastic. Remove and re-lay in fresh mortar any unit disturbed to the extent that the initial bond is broken after initial positioning.
   b. Cut exposed edges or faces of masonry units smooth, or position so that exposed faces or edges are unaltered manufactured surfaces.
   c. When the bearing of a masonry wythe on its support is less than two-thirds of the wythe thickness, notify the Architect and Engineer of Record.

B. Embedded items an accessories - Install embedded items and accessories as follows:
   1. Construct chases as masonry units are laid
   2. Install pipes and conduits passing horizontally through masonry partitions.
   3. Place pipes and conduits passing horizontally through piers, pilasters, or columns
   4. Place horizontal pipes and conduits in and parallel to plane of walls
   5. Install secure connectors, flashing, weep holes, weep vents, nailing blocks, and other accessories.
   6. Install movement joints.
   7. Aluminum - Do not embed aluminum conduits pipes and accessories in masonry, grout or mortar unless they are effectively coated or isolated to prevent chemical reaction between aluminum and cement or electrolytic action between aluminum and steel.

C. Bracing of masonry - Design, provide and install bracing that will assure stability of masonry during construction.

D. Site tolerances - Erect masonry within the following tolerances from the specified dimensions.

1. Dimension of elements
   a. In cross section or elevation (-1/4 in., +1/2 in.)
   b. Mortar joint thickness
      bed joints between masonry courses (+ 1/8 in)
      bed joint between flashing and masonry (-1/2 in., +1/8 in.)
      head (-1/4 in., +3/8 in.)
   c. Grout space or cavity width, except for masonry walls passing framed construction (-1/4 in., +3/8 in.)
2. Elements
   a. Variation from level
      bed joints (+/- 1/4 in. in 10 ft, +/- 1/2 in. maximum)
      top surface of load bearing walls (+/- 1/4 in. in 10 ft, +/- 1/2 in. maximum)
   b. Variation from plumb (+/- 1/4 in. in 10 ft, +/- 3/8 in. in 20 ft,+/- 1/2 in. maximum)
   c. True to a line (+/- 1/4 in. in 10 ft, +/- 3/8 in. in 20 ft,+/- 1/2 in. maximum)
   d. Alignment of columns and walls (bottom versus top) (+/- 1/2 in. for load bearing walls and columns., +/- 3/4 in. for non-load bearing walls)
3. Location of elements
   a. Indicated in plan (+/- 1/2 in. in 20 ft, +/- 3/4 in. maximum)
   b. Indicated in elevation (+/- 1/4 in. in story height +/- 3/4 in. maximum)
   c. If the above conditions cannot be met due to previous construction, notify the Architect and Engineer of Record.
   d. Reinforcement, tie, and anchor installation

3.05 REINFORCEMENT, TIE AND ANCHOR INSTALLATION

A. Basic requirements - Place reinforcement, wall ties and anchors in accordance with the sizes, types, and locations indicated on the Project Drawings and as specified. Do not place dissimilar metals in contact with each other.

B. Reinforcement
   1. Support reinforcement to prevent displacement caused by construction loads or by placement of grout or mortar, beyond the allowable tolerances.
   2. Completely embed reinforcing bars in grout in accordance with the Section entititled grout placement.
   3. Maintain clear distance between reinforcing bards and the interior of masonry unity or formed surface of at least 1/4 inch for fine grout and 1/2 inch for coarse grout, except where cross webs of hollow units are used as supports for horizontal reinforcement.
   4. Place reinforcing bars maintining the following minimum cover:
      a. Masonry face exposed to earth or weather 2 in for bars larger than No. 5, 1-12/ in. for No. 5 bars or smaller.
      b. Masonry not exposed to earth or weather 1-1/2 in.
   5. Maintain minimum clear distance between parallel bars of the nominal bar size or 1 in., whichever is greater.
   6. In columns and pilasters, maintain minimum clear distance between vertical bars of one and one-half times the nominal bar size or 1-1/2 in., whichever is greater.
   7. Splice only where indicated on the Project Drawings, unless otherwise acceptable. When splicing by welding, provide welds in conformance with the provisions of AWS D1.4.
   8. Do not bend reinforcement after it is embedded in grout or mortar without approval from the Engineer of Record.

9. Noncontact lap splices - Postion bars spliced by noncontact lap splices no farther apart transversely than one-fift the specified length of lap nor more than 8 in.
10. Joint reinforcement
    a. Place joint reinforcement so that longitudinal wires are embedded in mortar with a minimum cover of 1/2 in. when not exposed to weather or earth; or 5/8 in. when exposed to weather or earth.
    b. Provide minimum 6 in. lap splice for joint reinforcement.
    c. Ensure that all ends of longitudinal wires of joint reinforcement at laps are embedded in mortar or grout.
11. Placement tolerances
    a. Place reinforcing bars in walls and flexural elements within a tolerance of +/- 1/2 in. when the distance from the centerline of reinforcing bars to the opposite face of masonry, d, is equal to 8 in. or less, +/- 1in. for d equal to 24 in. or less but greater than 8 in., and 1-1/4 in. for d greater than 24 in.
    b. Place vertical bars within:
        1) 2 in. of the required location along the length of the wall when the wall segment length exceeds 24 in.
        2) 1 in. of the required location along the length of the wall when the wall segment length does not exceed 24 in
        3) If it is necessary to move bars more than one bar diameter or a distance exceeding the tolerance stated above to avoid interference with other reinforcing steel, conduits, or embedded items notify the Engineer of Record.
        4) Foundation dowels that interfere with unit webs are permitted to be be bent to a maximum of 1 in. horizontally for every 6 in. of vertical height.

C. Anchor bolts
1. Embed headed and bent-bar anchor bolts larger than 1/4 in. diameter in grout that is placed in accordance with Section 3.06A and Section 3.06B. Anchor bolts of 1/4 in.diameter or less are permitted to be placed in grout or mortar bed joints that have a specified thickness of at least 1/2 in. thickness.
2. For anchor bolts placed in the top of grouted cells and bond beams, maintain a clear distance between the bolt and the face of masonry unit of at least 1/4 in. when using fine grout and 1/2 in. when using coarse grout.
3. For anchor bolts placed throught the face shell of a hollow masonry unit, drill a hole that is tight-fitting to the bolt or provide minimum clear distance that conforms to Section 3.05D.2 around the bolt and through the face of the shell. For the portion of the bolt that is within the grouted cell, maintain a clear distance between the bolt and the face of masonry unit and between the head or bent leg of the bolt and the formed surface of grout of at least 1/4 in. when using fine grout and at least 1/2 in when using coarse grout.
4. Place anchor bolt with a clear distance between parallel anchor bolts not less than the nominal diameter of the anchor bolt, nor less than 1 in.

3.06 GROUT PLACEMENT

A. Placing time - Place grout wihin 1-1/2 hr from introducing water in the mixture and prior to initial set.
1. Discard site-mixed grout that does not meet the specified slump without adding water after initial mixing.
2. For ready-mixed grout:
    a. Addition of water is permitted at the time of discharge to adjust slump.

b. Discard ready mixed grout that does not meet the specified slump without adding water, other than the water that was added at the time of discharge.
The time limit is waived as long as the ready mixed grout meets the specified slump.

B. Confinement - Confine grout to the areas indicated on the project drawings. Use material to confine grout that permits bond between masonry units and mortar.

C. Grout pour height - Do not exceed the maximum grout pour height given in the Table below

Grout Type (1)	Maximum grout pour height, ft	Minimum clear width of grout space, in (2,3)	Minimum clear grout space dimensions for grouting cells of hollow units, in x in (3,4,5)
Fine	1	3/4	1-1/2x2
Fine	5.33	2	2x3
Fine	12.67	2-1/2	2-1/2x3
Fine	24	3	3x3
Coarse	1	3/4	1-1/2x3
Coarse	5.33	2	2-1/2x3
Coarse	12.67	2-1/2	3x3
Coarse	24	3	3x4

1. Fine and course grouts are defined by ASTM C476.
2. For grouting between masonry wythes.
3. Minimum clear width of grout space and minimum clear grout space dimension are the net dimension of the space determined by subtracting masonry protrusions and the diameters of horizontal bars from the as-built cross section of the grout space. Select grout type and maximum grout pour height based on minimum clear space.
4. Area of vertical reinforcement shall not exceed 6 percent of the area of the grout space.

D. Grout lift height
1. For grout conforming to Section 2.02B
   a. Where the following conditions are met, place grout in lifts not exceeding 12 ft 8 in.
      1) The masonry has cured at least 4 hours
      2) The grout slump is maintained between 10 and 11 in.
      3) No intermediate reinforced bond beams are placed between the top and the bottom of the pour height
   b. When conditions 1 and 2 are met but there are intermediate bond beams within the grout pour, limit the grout lift height to the bottom of the lowest bond beam that is more than 5 ft. 4 in. above the bottom of the lift, but do not exceed a grout lift height of 12 ft. 8 in.
   c. When the conditions of 1 or 2 are not met, place grout in lifts not excedding 5 ft. 4 in.
2. For self-consolidating grout conforming to Section 2.02B:
   a. When placed in masonry that has cured for at least 4 hours, place in lifts not exceeding the grout pour height.
   b. When placed in masonry that has not cured for at least 4 hours, place in lifts not exceeding 5 ft. 4 in. or the grout pour height, whichever is less.

E. Consolidation
1. Consolidate grout at the time of placement.

a. Consolidate grout pours 12 in. or less in height by mechanical vibration or by puddling.
b. Consolidate pours exceeding 12 in in height by mechanical vibration, and reconsolidate by mechanical vibration after initial water loss and settlement has occurred.

2. Consolidation or reconsolidation is note required for self-consolidating grout.

F. Grout key - When grouting, form grout keys between grout pours. Form grout keys between grout lifts when the first lift is permitted to set prior to placement of the subsequent lift.
1. Form a grout key by terminating the grout a minimum of 1-1/2 in. below a mortar joint.
2. Do not form grout keys within beams.
3. At beams or lintels laid with closed bottom units, terminate the grout pour at the bottom of the beam or lintel without forming a grout key.
4. Alternate grout placement - Place masonry units and grout using construction procedures employed in the accepted grout demonstration panel.

G. Lap splices minimum 24 bar diameters.

H. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

I. Place and consolidate grout fill without displacing reinforcing.

3.07 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

3.08 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.

B. Verify f'm and f'AAC in accordance with Section 1.05

C. Sample and test grout as required in Section 1.04 and 1.05.

3.09 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

E. Remove debris

F. Do not damage the masonry

3.10 PROTECTION

A. Protect adjacent construction and in place masonry against damage.

B. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION 04 2000

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Section 32 3119
Decorative Metal Fences and Gates

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Decorative steel fences.

B. Decorative steel gate.

C. Decorative steel rolling gate.

D. Automatic gate operators complete with safety devices, keypad, card reader, and remote operation

E. Pedestal for gate operator with housing for operators.

F. Detection loops in pavement.

G. Concertina wire and attachments.

H. Coordination with Electrical drawings.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete.

B. Section 04 2000 - Unit Masonry

1.03 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

B. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus; 2019.

C. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.

D. ASTM D523 - Standard Test Method for Specular Gloss; 2014 (Reapproved 2018).

E. ASTM D714 - Standard Test Method for Evaluating Degree of Blistering of Paints; 2002 (Reapproved 2017).

F. ASTM D1654 - Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments; 2008, with Editorial Revision (2017).

G. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates; 2023.

H. ASTM D2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact); 1993 (Reapproved 2024).

I. ASTM D3359 - Standard Test Methods for Rating Adhesion by Tape Test; 2023.

J. ASTM F2200 - Standard Specification for Automated Vehicular Gate Construction; 2020.

K. ASTM F2408 - Standard Specification for Ornamental Fences Employing Galvanized Steel Tubular Pickets; 2016 (Reapproved 2023).

L. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.

M. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

N. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.

O. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.

P. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Submit manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings:
   1. Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, gates, and schedule of components.

D. Manufacturer's Warranty.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years documented experience.

1.06 DELIVERY, STORAGE AND HANDLING

A. Store materials in a manner to ensure proper ventilation and drainage. Protect against damage, weather, vandalism and theft.

1.07 WARRANTY

A. Correct defective Work within a five year period after Date of Substantial Completion.

B. Provide five year manufacturer warranty for rolling gate operator.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Decorative Metal Fences and Gates:
   1. Ameristar Perimeter Security, USA: www.ameristarperimeter.com/#sle; or approved equal.

B. Automatic Gate Operators:
   1. LiftMaster: www.liftmaster.com; or approved equal.
   2. HySecurity; hysecurity.com; or approved equal.
   3. Maximum Controls: max.us.com; or approved equal.

C. Concertina Wire
   1. https://www.concertina-wire.org/concertina-wire/concertina-wire.html; or approved equal.
   2. https://razorfencing.com/razor-wire; or approved equal.

2.02 FENCES

A. Fences: Complete factory-fabricated system of posts and panels, accessories, fittings, and fasteners; finished with electrodeposition coating, and having the following performance characteristics:

B. Electro-Deposition Coating: Multistage pretreatment/wash with zinc phosphate, followed by epoxy primer and acrylic topcoat.
   1. Total Coating Thickness: 2 mils, minimum.
   2. Color: Black.

C. Steel: ASTM A653/A653M; tensile strength 45,000 psi, minimum.
   1. Hot-dip galvanized; ASTM A653/A653M, G60.
   2. 62 percent recycled steel, minimum.

2.03 HEAVY INDUSTRIAL STEEL ORNAMENTAL FENCE SYSTEM

A. Provide fence meeting requirements for Industrial class as defined by ASTM F2408.

B. Fence Panels: Aegis II Invinciple; height per plans

1. Panel Style: Two rail.
2. Attach panels to posts with manufacturer's standard panel brackets.

C. Posts: Steel tube.
1. Size: 2-1/2 inches square by 12 gauge, 0.109 inch, with manufacturer's standard cap.
2. Post Cap: Flush plate.

D. Rails: Manufacturer's standard, double-wall steel channel 1-3/4 inch square by 12 gauge, 0.1094 inch with prepunched picket holes.
1. Picket Retaining Rods: 0.125 inch galvanized steel.
2. Picket-to-Rail Intersection Seals: PVC grommets.

E. Pickets: Steel tube.
1. Spacing: 3-3/4 inch clear.
2. Size: 1 inch square by 14 gauge, .0747 inch.
3. Style: Invincible.
4. Finial: Spear point.

F. Flexibility: Capable of following variable slope of up to 1:2.

2.04 STEEL ROLL GATE SYSTEM

A. Provide fence components meeting requirements for Industrial class as defined by ASTM F2408.

B. Gate system shall comply with all safety requirements of ASTM F2200.

C. PassPort II Industrial Ornamental design style: Invincible.
1. Panel Style: Two rail.
2. Panel Strength: Capable of supporting 600 pound load applied at midspan without deflection.
3. Attach panels to posts with manufacturer's standard panel brackets.

D. Posts: Steel tube.
1. Size: 4 inches square by 11 gauge, 0.1196 inch, with manufacturer's standard cap.
2. Post Cap: Flush plate.

E. Top rail, uprights, and diagonal rails: 2" square by 12 Ga.

F. Bottom rail: 2"x4"x11 Ga.
1. Picket Retaining Rods: 1/8 inch galvanized steel.
2. Picket-to-Rail Intersection Seals: PVC grommets.

G. Pickets: Steel tube.
1. Spacing: 4.175 inch on center.
2. Size: 1 inch square by 14 gauge, 0.0747 inch
3. Invincible style gates over 18’ long shall have pickets face-welded to 2” x 2” angle iron to form panels equal in length to the gate frame bay width.
4. Style: Pickets with finial extend above top rail.
5. Finial: Spear point.

H. Flexibility: Capable of following variable slope of up to 1:4.

I. Mesh: 2" mesh safety screening shall cover the entire gate and an equal portion of fence parallel to the gate in the open posiiton up to a height of over 6 feet from ground elevation.

J. Color: Black.

2.05 Automatic Gate Operators

A. Rolling Gates: Prewired, pedestal-mounted gate operator for horizontal roller gates, per ASTM F2200 and UL 325.
   1. Operating type: Roller chain.
   2. Control Functions: Open, Pause, Close.
   3. Maximum Open/Close Time: 30 seconds.
   4. Access: Card, Keypad, and Remote.
   5. Maximum gate weight: 1,500 pounds (560 kilograms).
   6. Horsepower Rating: Suitable for connected load.
   7. Entrapment Protection Devices: Provide sensing devices and safety mechanisms complying with UL 325.
      a. Primary Device: Provide electric sensing edge, wireless sensing, NEMA 1 photo eye sensors, or NEMA 4X photo eye sensors as required with momentary-contact control device.
      b. Secondary Device: Provide electric sensing edge with wireless edge kit or non-monitored safety edge as an option along with continuous-constant control device.
   8. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
      a. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
   9. Products:
      a. LiftMaster IHSL24UL (Basis of Design)
      b. Or approved equal.

2.06 ACCESSORIES

A. Keypad Mounting Supports: Where not factory installed, provide mounting supports for keypad installation.
   1. Products:
      a. PedestalPro, www.pedestalpro.com
         1) Furnished by owner. Contractor to install pedestal footing and anchors to receive pedestal.

B. Keypad Housing:
   1. Material: Steel
   2. Finish: Powder Coated
   3. Color: Black
   4. Size: As required for components - keypad and card reader minimum

2.07 Concertina Wire

A. Product: Concertina Razor Wire
   1. Type: Cross Razor Wire
   2. Material: Stainless Steel
   3. Size: 12" Diameter

B. Accessories:
   1. Mounting brackets and clips per manufacturer's installation requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Set fence posts in accordance with the manufacturer recommended spacing.

C. Space gate posts according to the manufacturers' drawings, dependent on standard out-to-out gate leaf dimensions and gate hardware selected.
   1. Base type and quantity of gate hinges on the application, weight, height, and number of gate cycles.

D. Install operator in accordance with manufacturer's instructions and in accordance with NFPA 70.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch.

B. Maximum Offset From Indicated Position: 1 inch.

C. Minimum Distance from Property Line: 6 inches.

3.05 CLEANING

A. Leave immediate work area neat at end of work day.

B. Clean jobsite of excess materials; scatter excess material from post hole excavations uniformly away from posts. Remove excess material if required.

C. Clean fence with mild household detergent and clean water rinse well.

D. Remove mortar from exposed posts and other fencing material using a 10 percent solution of muriatic acid followed immediately by several rinses with clean water.

E. Touch up scratched surfaces using materials recommended by manufacturer. Match touched-up paint color to factory-applied finish.

3.06 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair, or replace damaged products before Date of Substantial Completion.

END OF SECTION 32 3119

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Section 32 3313
Site Bicycle Racks

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Exterior bicycle racks.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.

C. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2022.

D. ASTM A312/A312M - Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes; 2022a.

E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2021a.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Indicate size, shape, and dimensions, including clearances from adjacent walls, doors, and obstructions.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Handle racks with sufficient care to prevent scratches and other damage to the finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Exterior Bicycle Racks:
   1. Peak Racks; www.peakracks.com/#sle; or approved equal.
   2. Substitutions: See Section 01 2500

2.02 BICYCLE RACKS

A. Exterior Bicycle Racks: Device allows user-provided lock to simultaneously secure one wheel and part of the frame on each bicycle parked or racked.
   1. Model: 5-Bike Single-Sided Rack
      a. Finish/Color: Hot Dipped Galvanized - Gray
      b. Add Hardware: Surface Mount to Concrete
         1) Capacity: Seven bicycles.
         2) Accessories: In-ground grout cover.

B. Materials:

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine surfaces to receive bicycle racks.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory conditions before proceeding.

C. Do not begin installation until unsatisfactory conditions are corrected.

3.02 PREPARATION

A. Ensure surfaces to receive bicycle racks are clean, flat, and level.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install level, plumb, square, and correctly located as indicated on drawings.

C. Surface Flange Installation: Anchor bicycle racks securely in place with 1/2 inch by 4 inch anchor bolts through flange holes.

3.04 CLEANING

A. Clean installed work to like-new condition. Do not use cleaning materials or methods that could damage finish.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION 32 3313

APPENDIX C – CITY COMMUNICATION CABLING STANDARDS

SECTION 17010
COMMON WORK RESULTS FOR COMMUNICATIONS

PART 1 GENERAL

1.1 SUMMARY:

A. Section includes, but is not necessarily limited to:
   1. Common standards and procedures for the Communications Work.
   2. Design, engineer and provide complete, all means of support, suspension, attachment, fastening, bracing, and restraint (hereinafter "support") of the Communications Systems. Provide engineering of such support by parties licensed to perform work of this type in the Project jurisdiction.

B. Provisions of this Section apply to Communications Work, including the following Sections:
   1. Section 17026 - Grounding and Bonding for Communications Systems
   2. Section 17029 - Hangers and Supports for Communications Systems
   3. Section 17033 - Conduits and Backboxes for Communications Systems
   4. Section 17036 - Cable Trays for Communications Systems
   5. Section 17039 - Surface Raceways for Communications Systems
   6. Section 17053 - Identification for Communications Systems
   7. Section 17100 - Structured Cabling, Basic Materials and Methods
   8. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures
   9. Section 17119 - Communications Termination Blocks and Patch Panels
   10. Section 17123 - Communications Cable Management
   11. Section 17126 - Communications rack Mounted Power Protection and Power Strips
   12. Section 17130 - Communications Indoor Backbone Cabling
   13. Section 17150 - Communications Horizontal Cabling

1.2 REFERENCES:

A. Usage: In accordance with Section 01110 – Summary of Work.

B. American National Standards Institute (ANSI)
   1. ANSI/TIA/EIA-568-B.1-200l, Commercial Building Telecommunications Cabling Standard – Part l: General Requirements
   2. ANSI/TIA/EIA-568-B.2-200l, Commercial Building Telecommunications Cabling Standard - Part2: Balanced Twisted Pair Cabling Components
   3. ANSI/TIA/EIA-568-B.3-2000, Optical Fiber Cabling Components Standard
   4. ANSI/TIAIEIA-606-A-2002, Administration Standard for Commercial Telecommunications Infrastructure

1.3 DEFINITIONS

A. General Abbreviations used in these specifications. Refer additionally to the abbreviations list appearing on the Drawings.
   1. ADA Americans With Disabilities Act
   2. AFC Above Finished Ceiling
   3. AFF Above Finished Floor

4. BDF Building Distribution Facility
5. BICSI Building Industry Consulting Service International
6. BLDG Building
7. CAT Category
8. CD Campus Distributor
9. CL Centerline
10. DIY Division
11. (E) Existing
12. EF Entrance Facility
13. ER Equipment Room
14. FBO Furnished By Owner
15. FD Floor Distributor
16. HR Home Run
17. ID Inside Diameter
18. LAN Local Area Network
19. MAX Maximum
20. (N) New
21. NIC Not In Contract
22. OD Outside Diameter
23. OFE Owner Furnished Equipment
24. PSRH Project Standard Receptacle Height
25. PSSH Project Standard Switch Height
26. TR Telecommunications Room
27. TVP Typical
28. UON Unless Otherwise Noted.

B. Reference to Named Products.
   1. Selected Item: Item so noted was selected based on comparative testing of similar products. Procedure for determination of equivalence is noted in the specification for the item(s).
   2. System Design Basis: Item so noted interacts with other system items to produce total system function. Substitution of this item may require coordinated substitution of other system items.
   3. Design Basis: Item so noted was used as basis for system drawings to establish features, size, etc. Use of specified equivalents may require adjustment of physical layout or wiring, but does not affect system function. No preference is implied.

1.4 SUBMITTALS

A. Comply with Section 01300 - Administrative Requirements and the following:
   1. Submit all materials for review arranged in same order as Specifications, individually referenced to Specification Section, Paragraph and Contract Drawing number. Conform in every detail as applies to each referencing Section.
   2. Submit 8 ½ "x 11" items bound in volumes and drawings in edge bound sets. Submit all drawings on sheets of the same size.

3. Make each specified submittal as a coordinated package complete with all information specified herein. Incomplete or uncoordinated submittals will be returned with no review action.
4. Progress Schedule: Comply with 01300 - Administrative Requirements.

B. Manufacturer's Product Data:
1. Manufacturer's Product Data Sheets. Collate in sequence of List of Materials:
2. Data sheet for each item in each Communications Section, including all accessories, clearly marked for proposed product.
3. Material Safety Data Sheet, where applies.
4. List of Materials Schedule. For each item, include:
   a. Referencing Specification Section
   b. Referencing Paragraph
   c. Referencing Drawing, if specified only on plans
   d. Manufacturer
   e. Model number
   f. Listing, including name of Nationally Recognized Testing Laboratory.
   g. Precede each submittal book with a summary schedule, with columns for each item above and rows for each item submitted.
      i. Example:

Specification Section	Paragraph	Contract Drawing Reference	Manufacturer	Model No.	UL Listed/ ETL Verified
17010	2.03C		XYZ	123	Y
17150	2.07Al		AAA	34-56	Y
		T4.2	ZZY	456	Y

1.5 QUALITY ASSURANCE

A. Procedures: In accordance with Section 01400 - Quality Requirements.

B. Contractor may design data and voice cabling and subcontract the installation to another contractor or perform both design and installation. In either case, all contractors must meet the qualifications for any portion of the work they perform.

C. Qualifications for contractors who perform DESIGN work:
1. Any person who designs any data or voice cabling for this project must be a BICSI Registered Communication Distribution Designer (RCDD®) and a full-time employee of Contractor. Two (2) copies of RCDD certification(s) must be submitted during the pre-construction meeting.
2. Any person who designs any data or voice cabling for this project shall be thoroughly familiar with the cabling methods set forth in the latest release of the BICSI Telecommunications Distribution Methods Manuals (TDMM), latest edition.
3. Contractor shall submit two (2) copies of documentation of at least five (5) years experience in design of structured cabling systems during the pre-construction meeting.
4. Contractor shall submit two (2) copies of a written list of completed projects equivalent in size and complexity to this project, with a reference name, title,

company, address, and telephone number for each during the pre-construction meeting.

D. Qualifications for contractors who perform INSTALLATION work:
   1. Contractor must have at least one person acting as project manager/engineer for this project who is both a BICSI RCDD and a full-time employee of Contractor. Two (2) copies of RCDD certification(s) must be submitted during the pre-construction meeting.
   2. Contractor shall be thoroughly familiar with the cabling methods set forth in the BICSI TDMM, latest edition, and unless otherwise specified, shall supervise the installation in accordance with the recommendations and practices outlined in the BICSI TDMM, latest edition.
   3. Contractor shall be an approved Ortronics Certified Installer or Berk-Tek Certified OASIS Integrator. The Telecommunications contractor is responsible for workmanship and installation practices in accordance with the Ortronics CI/CIP Program and Berk-Tek OASIS Program.
   4. Contractor shall submit during the pre-construction meeting two (2) copies of documentation of at least five (5) years experience in installation and maintenance of structured cabling systems.
   5. Contractor shall submit during the pre-construction meeting two (2) copies of a written list of completed projects equivalent in size and complexity to this project, with a reference name, title, company, address, and telephone number for each.
   6. During the pre-construction-meeting, Contractor shall submit two (2) copies of a written list of qualified technicians assigned to this project, including relevant manufacturer training programs and years of related experience completed by each. At least 30 percent of the copper installation and termination crew must be certified by Berk-Tek and Ortronics or by BICSI at the Technician level. At least 20 percent of the optical fiber installation and termination crew must be certified by Berk-Tek and Ortronics or other industry-recognized organizations in optical fiber installation and testing.

E. Structured Cabling System shall qualify for an Ortronics NetClear GT2 25-year manufacturer warranty. Contractor shall responsible for the following:
   1. Register project for warranty PRIOR to the start of installation in conformance with Ortronics warranty requirements.
   2. Submit final Bill of Materials and certified test results to Ortronics within (5) business days of completing installation and certification testing.
   3. Deliver warranty confirmation letter and certificate to Owner's representative.

F. Test Plan
   1. Provide a complete and detailed test plan for the Telecommunications cabling system including a complete list of test equipment for the UTP and optical fiber components and accessories ten (10) business days prior to the proposed test date. Include procedures for certification, validation, and testing.

G. Designated Supervisor

1. Provide a designated supervisor present and in responsible charge in the fabrication shop and on the project site during all phases of installation and testing of the Work of this section. This supervisor shall be the same individual throughout the execution of the Work unless illness, loss of personnel, or other circumstances reasonably beyond the control of Contractor intervene.

H. Reference Documents: At all times when the work is in progress, maintain at the workplace, fabrication shop or Project Site as applies.
   1. A complete set of the latest stamped, actioned submittals of record.

I. Test Equipment
   1. Requirements:
      a. Maintain and operate test equipment at the fabrication shop and the job site for both routine and Certification Testing of the Work of this section.
      b. Maintain test equipment at the job site while testing is in progress from installation of equipment racks until Owner Acceptance of this Work; thereafter remove all of this test equipment from the job site.
      c. Unless otherwise indicated, test equipment shall remain property of Contractor.
      d. Provide all required test cables and adapters.
         a. Provide equipment with traceable calibration, with calibration date not greater than one (1) year prior to the date of the use of the equipment to perform the specified testing.
   2. Equipment: Specified in individual Sections.

J. Standard Products
   1. Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period. Where two or more items of the same class of equipment are required, these items shall be products of a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in this section.
      a. Alternative Qualifications. Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.
   2. Material and Equipment Manufacturing Date.
      a. Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

1.6 REGULATORY REQUIREMENTS

A. Regulations Applicable: Including but not limited to those defined in Section 01110 - Summary of Work.
   1. Nothing in the Contract Documents shall be construed to permit Work not conforming to applicable laws, ordinances, rules, or regulations.
   2. Safety Agency Listing: All devices provided under the Work of this Section which are connected to the Project electrical system shall be listed by a Nationally Recognized Testing Laboratory, and shall be so labeled.
   3. In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Owner's Representative. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.

1.7 DELIVERY. STORAGE, AND HANDLING

A. Procedures:
   1. In accordance with Section 01600 - Product Requirements and as specified in the individual sections of Division 17.

B. General
   1. Provide protection from weather, moisture, extreme heat and cold, dirt, dust, and other contaminants for Telecommunications cabling and equipment placed in storage.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Connecting hardware shall be rated for operation under ambient conditions of 32 to 140 degrees F and in the range of 0 to 95 percent relative humidity, non-condensing.

1.9 SEQUENCING

A. Comply with Section 01110 - Summary of Work, 01300 - Administrative Requirements, and the following:
   1. Sequence.
      a. Within (10) days of issuance of the Notice to Proceed, Owner’s Representative will provide the Contractor copies of the Contract Drawings showing station outlets with final Owner assigned backbone cable and horizontal jack and cable ID numbers.
      b. Reproduceables, as applies:
         i. 1 set of reproducible bond.
         ii. CAD files: 1 set
      c. Contractor shall use drawings provided in executing the work of the Project.

1.10 OPERATING AND MAINTENANCE DATA

A. Commercial off the shelf manuals shall be furnished for operation, installation, configuration, and maintenance of products provided as a part of the Telecommunications cabling and pathway system.

1. Submit operations and maintenance data in accordance with Section 01770 - Closeout Procedures and as specified herein not later than 2 months prior to the date of beneficial occupancy.

1.11 PROJECT RECORD DOCUMENTS

A. Comply with Section 01770 - Closeout Procedures, and the following:
   1. Record Drawings
      a. CAD.
         i. Use a Computer Aided Drafting (CAD) system in the preparation of record drawings for this Project. CAD system shall produce files in AutoCAD® .DWG format, latest version at time of bid.
      b. Except where prohibited by Contract, Owner's Representative will furnish CAD backgrounds in AutoCAD® .DWG format, latest version at time of bid, for use by the Contractor in preparing Record Drawings.
      c. CD copy of Record Drawings: Provide 2 separate disc copies of each drawing file in the format noted above. Submit of CD-R disk.

1.12 WARRANTY SERVICE

A. In addition to provisions of 01780 - Warranties, provide the following:
   1. Response Time: Provide a qualified technician familiar with the work at the Project Site within 24 hours after receipt of a notice of malfunction. Provide the Owner's Representative with telephone number attended 8 hours a day, 5 days a week, to be called in the event of a malfunction.

B. Provide all additional Warranties as defined in each Communication Systems Section.

1.13 ACCEPTANCE REVIEW AND TESTING PROCEDURES

A. Complete all Work of this section. Submit Test Report. Submit review copies of Operating and Maintenance Manuals, less reduced set of Record Drawings. Notify the Owner's Representative in writing that the Work of these Sections is complete and fully complies with the Contract Documents. Request Acceptance Review and Testing. The Owner's Representative will conduct Verification of Submitted Test Data, and otherwise direct testing and adjustment of this Work. These procedures may be performed at any hour of the day or night as required by the Owner's Representative to comply with the project schedule and avoid conflict with residents. Provide all specified personnel and equipment at any time without claim for additional cost or time.

B. Personnel: Provide services of the designated supervisor and additional technicians familiar with work of this section. Provide quantity of technicians as required to comply with project schedule.

C. In Addition, provide:
   1. All tools appropriate for performance of adjustment of and corrections to this Work. Include spare cable and connectors and specified tooling for application.
   2. Ladders, scaffolding and/or lifts as required to access high devices.
   3. All test equipment.

4. Complete set of latest stamped, actioned submittals of record for reference.
5. Complete set of manufacturer test reports.
6. Complete set of manufacturer's original operation, instruction and service manuals for each equipment item for reference.
    a. Demonstrate: Complete operation of all systems and equipment, including portable equipment.
    b. Adjust: As directed by the Owner's Representative.
    c. Correct: In timely manner, failure to comply with the Contract Documents, as reasonably determined by the Owner's Representative.

D. Temporary Equipment: Provide and operate, without claim for additional cost or time, temporary equipment and/or systems to provide reasonably equivalent function, as determined by the Owner's Representative, in place of the Work of this section which is incomplete or found not in conformance with the Contract Documents as of ten (10) business days prior to the scheduled completion date. Provide such temporary equipment until Acceptance of the Work of this section. Thereafter, remove such temporary equipment.

1.14 CLOSEOUT

A. Punch List: Perform any and all remedial work, at no claim for additional cost or time. Where required, re-test and re-submit certification test report(s). Notify the Owner's Representative of completion of Punch List.

B. Portable Equipment: Furnish all portable equipment and spares to the Owner's Representative, along with complete documentation of the materials presented. Where applicable, furnish portable equipment in the original manufacturer's packing.

C. Operating and Maintenance Data: Install framed operating and maintenance instructions. Submit manuals.

D. Project Record Documents: Submit print and digital copies. Digital files shall be in CAD system shall produce files in AutoCAD® .DWG format, latest version at time of bid.

E. Keys: If applicable, replace construction locks with permanent locks. Provide five (5) sets of keys to the Owner's Representative.

F. Training: Conduct specified training.

G. Warranty: Submit Contractor and Manufacturer Warranties dated to run from date of Acceptance of the Work of this section.

PART 2 PRODUCTS

2.1 GENERAL

A. Where a particular material, device, piece of equipment or system is specified directly, the current manufacturer's specification for the same shall be considered to be a part of these specifications, as if completely contained herein in every detail.

B. Each material, device or piece of equipment shall comply with all of the manufacturer's current published specifications for that item.

C. Products shall be made by manufacturers regularly engaged in the production of such products.

D. Provide quantity as shown on Contract Drawings, or as otherwise indicated.
E. Provide all auxiliary and incidental materials and equipment necessary for the operation and protection of the Work of this section as if specified in full herein.
F. Unless recycled content is specified, provide new materials.
G. Provide the manufacturer's latest design/model, permanently labeled with the manufacturer's name, model number and serial number.
H. Where products are of similar type or use, provide products of the same manufacturer, unless otherwise indicated.
I. Components:
    1. UL or third party certified. Cabling and interconnecting hardware and components for Telecommunications systems shall be UL listed or third party independent testing laboratory certified, and shall comply with NFPA 70 and conform to the requirements specified herein.
    2. Where equipment or materials are specified to conform to industry and technical society reference standards of the organizations, submit proof of such compliance.
        a. The label or listing by the specified organization will be acceptable evidence of compliance.
        b. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Owner's Representative.
        c. The certificate shall state that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.
J. Enclosures:
    1. Provide steel frames and enclosures designed and wired to eliminate all induced currents.
    2. Make bolted connections with self-locking devices.
K. Finishes: Any item or component of the Work of this section which is visible shall comply with the following:
    1. Finishes noted or scheduled on the Contract Drawings take precedence.
    2. Where design location requires that products, materials or equipment are visible to the public, no manufacturer's logos larger than 1/2 inch shall be visible. Unless otherwise noted or directed, neatly remove or permanently paint out such logos.
    3. Where finishes are not noted or otherwise defined in the Contract Documents, submit manufacturer's standard finish samples for selection by the Owner's Representative.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine existing conditions before starting work. Document conflicts in writing and submit to Owner’s Representative in a timely manner for resolution.

3.2 WIRING CLASSIFICATION AND RELATED

A. Audio Signal Wiring Classification:
   1. Type A-1: Microphone level wiring less than -30 dBu, 20 Hz to 20 kHz.
   2. Type A-2: Line level wiring -30 dBu to +24 dBu, 20 Hz to 20 kHz.
   3. Type A-3: Loudspeaker level or circuit wiring greater than +24 dBu, from 20 Hz to 20 kHz.

B. Video and Related Signal Wiring Classification:
   1. Type V-1: Baseband and composite video wiring I volt peak-to-peak into 75 ohms, 0 to 10.0 MHz.
   2. Type V-2: Synchronization and switching pulse wiring 4 volts peak-to-peak into 75 ohms, 15.62 to 15.75 kHz.
   3. Type V-3: Color subcarrier wiring 0 to 4 volts peak-to-peak into 75 ohms, 3.57 to 4.43 MHz.
   4. Type V-4: MATV system wiring 0.1 to 1000 microVolts peak-to-peak into 50 or 75 ohms, 47 to 890 MHz.

C. Control Signal Wiring Classifications:
   1. Type C-1: DC control wiring 0 to 50 volts.
   2. Type C-2: Synchronous control or data wiring 0 to 40 volts, peak-to-peak.
   3. Type C-3: AC control wiring 0 to 48 volts, 60 Hz.

D. Additional Wiring Classifications:
   1. Type M-1: DC power wiring 0 to 48 volts.
   2. Type M-2: AC power wiring greater than 50 volts, 60 Hz.
   3. Wiring Combinations.

E. Except as indicated herein, conduit, wireways and cable bundles shall contain only wiring of a single classification. The following combinations are acceptable in conduit, or cable harnesses. Additional acceptable combinations may be indicated on the Drawings.
   1. Types A-1, C-1, and M-1.
   2. Types A-2, C-1, C-2, and M-1, runs less than 20 feet.
   3. Types A-2, C-1, and M-1.
   4. Types A-3, C-1, C-2, and M-1.
   5. Types A-2, V-1, and V-3.
   6. Types V-1, V-2, V-3, and C-1.
   7. Types M-2 and C-3.

3.3 PREPARATION

A. Prepare and sequence the work to minimize disruption to each room environment and existing communications systems.

B. Protection: Cover all computers, electronic equipment, desks, chairs, furniture and other articles when working at ceiling level and/or performing dust producing tasks.

3.4 REPAIR AND RESTORATION

A. Where working in spaces occupied by the Owner, return to their original positions any furniture or articles relocated to perform the work.

3.5 CLEANING

A. Where working in spaces occupied by the Owner:
   1. Immediately after completing work within each space, clean up and remove all materials, scrap and dust.

2. All scrap material in work area shall be picked up and removed from the building at the end of each day. See also Section 01770 - Closeout Procedures for additional requirements.
3. All dust resulting from work performed shall be vacuumed up daily.
4. All scrap material shall be removed from site and disposed of in an authorized disposal site. Refer to Section 01565 - Site Waste Management Program.

END OF SECTION

SECTION 17026
GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Section includes grounding and bonding of Communications Work, including but not limited to:
   1. Communications Race
   2. Cable Runway
   3. Cable Shields
   4. Protector Fields
   5. Communications cabinets and enclosures.

1.2 RELATED WORK UNDER OTHER SECTIONS

A. Section 07840 - Firestopping
B. Section 16400 - Service and Distribution System
C. Section 17010 - Common Work Results for Communications
D. Section 17029 - Hangers and Supports for Communications Systems
E. Section 17033 - Conduits and Backboxes for Communications Systems
F. Section 17036 - Cable Trays for Communications Systems Communications Systems
G. Section 17100 - Structured Cabling, Basic Materials and Methods
H. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures
I. Section 17119 - Communications Termination Blocks and Patch Panels
J. Section 17123 - Communications Cable Management
K. Section 17150 - Communications Horizontal Cabling

1.3 SYSTEM DESCRIPTION

A. Provide telecommunications system grounding conductor as described herein and indicate on drawings.
B. Except as otherwise indicated, the complete communications installation including the, metallic conduits and raceways, cable trays, boxes, cabinets and equipment shall be completely and effectively grounded in accordance with all code requirements, whether or not such connections are specifically shown or specified.
C. Resistance:
   1. Resistance from the farthest ground bus through the ground electrode to earth shall not exceed 5 Ohms or the requirements of ANSI-J-STD-607-A-2002, whichever is more restrictive.

1.4 REFERENCES

A. American National Standards Institute (ANSI)
   1. ANSI/TIAIEIA-606-A-2002 Administration Standard for Commercial Telecommunications Infrastructure
   2. ANSI-J-STD-607-A-2002 Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
   3. Underwriters Laboratories (UL)
   4. UL 467 (1993); R 2004 Grounding and Bonding Equipment

1.5 SUBMITTALS

A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 Common Work Results for Communications.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Equal products by the following manufacturers will be considered providing that all features of the specified product are provided:
   1. Ground Rod:
      a. High strength high carbon steel, with electrolytically bonded jacket of copper on surface.
      b. UL spec. 467
      c. ANSI C-33.8-10n.
      d. Manufacturer:
         i. Allied Bolt
         ii. Inwesco 12A60
         iii. Blackburn
         iv. Cooper Power Systems
         v. Weaver.
         vi. Erico "Cadweld" Products, Inc.
         vii. ITT Blackburn.
         viii. Or equal.
   2. Ground Wells:
      a. Christy Concrete Products, Inc.
      b. Forni Corp.
      c. Or equal.
   3. Ground Bushings, Connectors, Jumpers and Bus:
      a. O-Z/Gedney.
      b. Thomas & Betts Corp.
      c. Or equal.
   4. Compression Connector Lug
      a. Panduit
      b. B-Line SB-479 Series
      c. Thomas & Betts
      d. Or equal.
   5. Telecommunications Ground Bus Bar
      a. CPI
      b. B-Line
      c. Panduit
      d. Or equal.
   6. Bonding Ribbon:
      a. Annealed solid copper 3/8 inch wide x 1/16 inch thick, tin plated.
      b. Manufacturer:
         i. Inwesco 12A55
         ii. Corning Cable Systems

iii. Preformed Line Products.
iv. Or equal.

7. Bonding Ribbon Clamp:
   a. Soft lead
   b. 1/16 inch thick
   c. Bolt hole for attachment
   d. Manufacturer:
      i. Inwesco 12A56
      ii. Corning Cable Systems
      iii. Preformed Line Products.
      iv. Or equal.
8. Fargo Clamp:
   a. Cast copper, silver plated, furnished with copper bolt.
   b. RUS Listed
   c. Manufacturer:
      i. Allied Bolt
      ii. Inwesco 12A57
      iii. Corning Cable Systems
      iv. or equal.
9. Ground Inserts:
   a. Cast Bronze w 1/4 Copper Rod.
   b. Provide minimum one each maintenance hole or vault.
   c. Manufacturer:
      i. Inwesco 12H69
      ii. Or equal by vault or manhole manufacturer.
      iii. Or equal.

2.2 GROUND CONDUCTORS

A. General purpose insulated: UL listed and code sized copper conductor, with dual rated THHN/THWN insulation, color identified green. Where continuous colorcoded conductors are not commercially available, provide a minimum 4" long color band with green, non-aging, plastic tape in accordance with NEC.

B. Bonding pigtails: Insulated copper conductor, identified green, sized per code, and provided with termination screw or lug. Provide solid conductors for #10 A WG or smaller and stranded conductors for #8 A WG or larger.

2.3 COMPRESSION CONNECTOR LUG

A. Description
   1. Connector lug with compression connection to conductor.
   2. Copper alloy body.
   3. Provide lug size to match conductor being terminated.
   4. Provide 2 hole pattern lugs.
   5. Provide each lug with silicon bronze hardware, including 2 bolts, 2 split lock washers and 2 nuts.

2.4 INSULATED GROUNDING BUSHINGS

A. Plated malleable iron or steel body with 150 degree Centigrade molded plastic insulating throat and lay-in grounding lug.

2.5 CONNECTIONS TO PIPE

A. For cable to pipe: UL listed bolted connection complying with CEC requirements.

2.6 CONNECTIONS TO STRUCTURAL STEEL, GROUND RODS, OR SPLICES

A. Where required by the Drawings or Specifications, grounding conductors shall be spliced together, connected to ground rods or connected to structural steel using exothermic welds or high pressure compression type connectors.
   1. Exothermic welds shall be used for cable-to-cable and cable-to-ground rod and for cable to structural steel surfaces. Exothermic weld kits shall be as manufactured by Cadweld, Thermoweld or equal. Each particular type of weld shall use a kit unique to that type of weld.
   2. High-pressure compression type connectors shall be used for cable-to-cable and cable-to-ground rod connections. Connections shall be as manufactured by Thomas & Betts #53000 series, Burndy "Hy-Ground" or equal.

2.7 EXTRA FLEXIBLE, FLAT BONDING JUMPERS

A. Where required by the drawing or specified herein.

PART 3 EXECUTION

3.1 GENERAL

A. Provide Grounding and Bonding according to the most restrictive requirements of:
   1. ANSI-J-STD-607-A.
   2. California Electrical Code Article 250 and references therein.
   3. California Electrical Code Article 800.

B. In the event of conflicting requirements, National Electrical Code requirements shall prevail.

C. Point of Connection
   1. Under Work of this Section, make connections to Communications Ground Busbars provided under Work of Section 16061 Grounding.
   2. Mechanical Connections

D. Make connections bare metal to bare metal.
   1. Where required, remove paint to bare metal, make grounding or bonding connection, and touch up paint.
   2. Torque threaded fasteners to manufacturer's recommended values.

E. Compression Connections
   1. Make compression connections with the lug or fitting manufacturer's recommended tooling, with the tooling set to the recommended force and stroke.

F. Communications Raceways and Sleeves
   1. Bond metallic raceway and sleeves to the Communications Ground Busbar at the Communications Room that serves the related Communications Receptacle.
   2. Where a metallic raceway connects 2 or more Communications Rooms, bond to the Communications Ground Busbar at each.

G. Cable Tray and Cable Runway

1. Coordinate with the Work of Section 17033 - Communications Raceways, Boxes and Fittings, paragraph Cable Runway.
2. Provide manufacturer's bonding clips, plates or jumpers as required to comply with the UL Classified conditions for use as an equipment grounding conductor.
3. Bond the Cable Runway to the Communications Ground Busbar at the Communications Room served.

H. Cable Shields
1. Comply with California Electrical Code Article 800.

I. Protector Fields
1. Comply with California Electrical Code Article 800.

J. Communications cabinets and enclosures
1. Bond to the Communications Ground Busbar at the Communications Room.

K. Emergency/Information Telephone enclosures
1. Bond as detailed on Communications Drawings.

L. Communications Broadband Systems
1. Comply with California Electrical Code Article 820.
2. Ground Broadband passives as shown on Communications Drawings.

3.2 LABELING

A. Provide labeling according to the requirements of:
1. ANSI/TIA/EIA-606-A.
2. Section 17053 Identification for Communications Systems.

END OF SECTION

SECTION 1702
HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK

A. The work covered under this section consists of the furnishing of all necessary labor, supervision, materials, equipment, and services to completely execute the provision of communications supports and cable hook system as described in this specification, including but not limited to:
   1. Strut Supports
   2. Cable Hooks (J-Hooks)
   3. Beam Clamps
   4. Concrete Fasteners
   5. Touch-Up Materials
   6. Conduit Supports
   7. Equipment Supports
   8. Fastening Hardware

B. Related work: Consult all other Sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.
   1. Section 03300 - Cast-in-place Concrete. Concrete equipment pads.
   2. Division 5: Metals. Hangers for electrical equipment.
   3. Section 09260 - Gypsum Board Assemblies, Section 09510 - Acoustical Ceilings, Section 09512 - Manufactured Wood Ceilings, and Section 09520- Textile Ceiling System. Slack Fixture support wires.
   4. Section 17010 - Common Work Results for Communications
   5. Section 17026 - Grounding and Bonding for Communications Systems
   6. Section 17033 - Conduits and Backboxes for Communications Systems
   7. Section 17036 - Cable Trays for Communications Systems
   8. Section 17053 - Identification for Communications Systems
   9. Section 17100 - Structured Cabling, Basic Materials and Methods
   10. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures
   11. Section 17123 - Communications Cable Management
   12. Section 17150 - Communications Horizontal Cabling

1.2 SYSTEM DESCRIPTION

A. Provide devices specified in this Section and related Sections for support of communications equipment specified for this Project.

B. Provide support systems that are adequate for the weight of equipment, conduit and wiring to be supported.

1.3 REFERENCES

A. American Society For Testing and Materials (ASTM)

1. ASTM AI23/AI23M-02 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
2. ASTM AI53/AI53M-04 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
3. ASTM B633-98el Specification for Electro-deposited Coatings of Zinc on Iron and Steel.
4. ASTM A653/A653M-04a Standard Specification for Steel Sheet, ZincCoated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the HotDip Process.

B. American National Standards Institute (ANSI)
1. ANSI/TIA/EIA-568-B.l-2001, Commercial Building Telecommunications Cabling Standard – Part l: General Requirement.
2. ANSI/TIA/EIA-568-B.2-2001, Commercial Building Telecommunications Cabling Standard – Part 2: Balanced Twisted Pair Cabling Components.
3. ANSI/TIA/EIA-568-B.3;-2000, Optical Fiber Cabling Components Standard.
4. ANSI/ TIA/ EIA 569-B-2003, Commercial Building Standard for Telecommunications Pathways and Spaces.

C. National Fire Protection Association
1. NFPA 70, National Electrical Code

1.4 SUBMITTALS

A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 UALITY ASSURANCE

A. All materials, equipment and parts comprising the units specified herein shall be new and unused, and of current manufacturer.

B. Cable hooks shall be listed and labeled by Underwriters Laboratories (UL) as required.

C. Cable hooks shall have the manufacturers name and part number stamped in the part itself for identification.

PART 2 PRODUCTS

2.1 SUPPORTING DE ICES

A. General
1. Supports to be sized to suit load and selected to match mounting conditions.

B. Manufacturers
2. Equal products by the following manufacturers will be considered providing that all features of the specified product are provided:
   a. Concrete fasteners:
      i. Phillips Red-Head
      ii. Remington
      iii. Ramset
      iv. Hilti
      v. Simpson Strong-Tie
      vi. Or Equal

b. Concrete inserts and construction channel:
   i. Unistrut Corp.
   ii. GS Metals Globe Strut
   iii. Thomas & Betts Kindorf Corp.
   iv. Or Equal
c. Conduit Straps:
   i. O-Z/Gedney
   ii. Erico Caddy Fastening Products
   iii. Thomas & Betts Kindorf Corp.
   iv. Or Equal
d. Beam Clamps
   i. Cooper B-Line
   ii. SuperStrut
   iii. Unistrut
   iv. Or Equal
e. Aircraft Cable Sway Braces
   i. Mason Industries
   ii. M.W. Sausse/ ibrex
   iii. Loos & Company, Inc.
   iv. Or Equal

C. Concrete Fasteners
   1. Provide expansion- type concrete anchors.
   2. Provide powder driven concrete fasteners with washers. Obtain approval from Owner's Representative prior to use.

D. Concrete Inserts
   1. Provide pressed galvanized steel, concrete spot insert, with oval slot capable of accepting square or rectangular support nuts of inch to inch diameter thread for rod support.

E. Aircraft cable sway braces
   1. Steel rope sized to meet load.

F. Construction Channel
   1. Construction:
      a. 1-5/8 square galvanized channel formed from U.S.S.G No. 12 or 0.109 inch cold formed steel with 17/32-inch diameter bolt holes, and 1-1/2 on center in the base of the channel.
      b. 10 foot sections.
   2. All supporting materials by same manufacturer.

G. Beam Clamps
   1. Malleable iron electro-galvanized steel beam clamps selected to match building structural steel members.

H. Conduit Straps
   1. One hole strap, steel or malleable iron, with malleable iron clamp-back spacer for surface mounted wall and ceiling applications.
      a. Use malleable strap with spacers for exterior and wet locations.
      b. Use steel strap without spacers for interior locations.

2. Steel channel conduit strap for support from construction channel.
3. Steel conduit hanger for pendant support with threaded rod.
4. Steel wire conduit support strap for support from independent #12 gauge hanger wires.

I. Threaded rods, couplings, screws, and nuts:
1. Electrolytically coated with zinc, 2 oz. zinc per square foot of surface, ASTM A123 or A153.

J. Miscellaneous Parts
1. Hot dipped galvanized after fabrication; after cutting, de-burring and hole drilling. Coated with zinc, 2 oz. zinc per square foot of surface, ASTM Al23 or A153.

K. Paint/Tape for Touch-up:
1. Zinc: CRC "Zinc-It", Glyptal, Enterprise Galvanizing "Galambra", or equal.

2.2 CABLE HANGERS

A. Ceiling Hung J-Hooks
1. Drawing Reference(s):
   a. WMJ
   b. ACJ
2. Features/Functions/Construction
   a. Specifically intended to carry the load of up to 50 communications cables without applying excess forces to cables at bottom of bundle.
   b. Integral broad bottom edge to spread cable load with flat bottom and provide a minimum of 1-5/8 cable bearing surface.
   c. Integral hanger rod attachment hardware at top.
   d. Load rated for application.
   e. Incorporates smooth 90-degree radiused edges to prevent snagging cable jackets on installation.
   f. Designed so the mounting hardware is recessed to prevent cable damage.
   g. Integral mechanical cable latch retainer to provide containment of cables within the hook. The retainer shall be removable and reusable.
   h. Suitable for direct attachment to walls, hanger rods, beam flanges, purlins, strut, floor posts, etc. to meet job conditions.
   i. Multi-tiered cable hooks to be used where required to provide separate cabling compartments, or where additional capacity is needed.
   j. Finishes:
      i. Cable hooks for non-corrosive areas shall be pre-galvanized steel, ASTM A653. Where additional strength is required, cable hooks shall be spring steel with a zinc-plated finish, ASTM B633, SC3.
      ii. Cable hooks for corrosive areas shall be stainless steel, AISI Type 304.
3. Manufacturer
   a. Cooper B-Line series BCH21, BCH32, BCH64

b. Erico/Caddy CableCat
c. Or Equal

PART 3 EXECUTION

3.1 GENERAL

A. The Owner's Representative reserves the right to request additional supports where in their sole opinion said supports are required. Any additional supports shall be installed at no additional cost to the Owner.

3.2 EXAMINATION

A. Thoroughly examine site conditions for acceptance of supporting device installation to verify conformance with manufacturer and specification tolerances. Do not commence with installation until all conditions are made satisfactory.

3.3 PREPARATION

A. Coordinate size, shape and location of concrete pads required for equipment installation with Base Building General Contractor Coordinate size, shape and location of concrete pads required for equipment installation with Base Building General Contractor.
B. Layout support devices to maintain headroom, neat mechanical appearance and to support the equipment loads.
C. Where shown on the Drawings or Specifications, install freestanding communications equipment on concrete pads.

3.4 INSTALLATION

A. Furnish and install supporting devices as noted throughout the Communications Systems work.
B. Communications device and conduit supports shall be independent of all other system supports that are not structural elements of the building, unless otherwise noted.
C. Fasten hanger rods, conduit clamps, outlet and junction boxes to building structure using pre-cast inserts, expansion anchors, preset inserts or beam clamps.
D. Use toggle bolts or hollow wall fasteners in hollow masonry, plaster or gypsum board partitions and walls.
E. Use expansion anchors or preset inserts in solid masonry walls.
F. Use self-drilling anchors, expansion anchor, or preset inserts on concrete surfaces.
G. Use sheet metal screws in sheet metal studs and wood screws in wood construction.
H. Do not fasten supports to piping, ductwork, mechanical equipment, conduit, or acoustical ceiling suspension wires.
I. Do not drill structural steel members unless first approved in writing by the Owner's Representative.
J. Fabricate supports from structural steel or steel channel, rigidly welded or bolted to present a neat appearance. Use hexagon head bolts with spring lock washers under all nuts.
K. Install surface-mounted cabinets with minimum of four anchors. Provide additional support backing in stud walls prior to sheet rocking as required to adequately support cabinets and panels.

L. Bridge studs top and bottom with channels to support flush mounted cabinets and panelboards in stud walls.

3.5 ERECTION OF METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal fabrications accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS "Structural Welding Code."

3.6 WOOD SUPPORTS

A. Cut, fit, and place wood grounds, nailers, blocking, and anchorage accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

3.7 ANCHORAGE

A. As part of the equipment submittals, cot' all provide anchorage calculations for floor and wall mounted communications equipment so that it shall remain attached to the mounting surface after experiencing forces in conformance with CCR, Title 24, Table 23P, Part II and with Section 2312 "Earthquake Regulations" of the "Uniform Building Code" for Seismic Zone 4 Area, Importance Factor of 1.25. Structural Calculations shall be prepared and signed by a California Registered Structural Engineer. Specify proof loads for drilled-in anchors, if used.

1. The contractor shall recommend the method of anchoring the equipment to the mounting surface and shall provide the Contractor with the assembly dimensions, weights and approximate centers of gravity.
2. All floor mounted, free standing electrical equipment such as racks and cabinets, etc. shall be securely fastened to the floor structure.

3. DISTRIBUTION PATHWAY IA CEILING HUNG CABLE HOOKS J HOOKS

A. oid, Plenum or Suspended Ceiling Exposed Cable Installation. Where drawings specifically show or permit use of exposed cable installation in voids, conform to the most restrictive requirements of Code TIA-569-B and this Section.

B. Provide support for all cabling. Do not place or attach direct grid, concealed spline grid, flexible or rigid ductwork, H AC registers, sprinkler piping or fixtures, light fixtures or building structure. Conform to the California Electric Code.

C. Placement:

1. All pathways created by ceiling hung cable hooks shall be reviewed by The Owner s Representative prior to installation.
2. Ceiling hung cable hooks and cabling supported by same shall not obscure access to access doors, hatches, air dampers, valves, filter sections, A boxes, cable trays, junction boxes, pull boxes or similar areas of access required by other trades.
3. All ceiling hung cable hooks shall be mounted close enough together such that upon completion of the station cable installation a minimum amount of cable droop occurs between adjacent rings. The distance between supporting rings shall not exceed 48 in wood frame construction, 60 in concrete construction, or as required by the current edition of TIA-569-B.
4. Refer to the separation requirements listed in Section 17150 - Communications Horizontal Cabling for minimum distances from electrical power and other electro-magnetic sources.

D. Follow manufacturer's recommendations for allowable fill capacity for each size of cable hook.
   1. Cable hooks shall be capable of supporting a minimum of 30 pounds with a safety factor of 3.
   2. Spring steel cable hooks shall be capable of supporting a minimum of 100 pounds with a safety factor of 3 where extra strength is required.
   3. Where aggregate cable bundle supported by ceiling hung cable hooks exceeds either the rated cable or weight load limit of the ceiling hung cable hook system, provide ceiling basket tray - Type CTW - as specified in Section 17036 Cable Trays for Communications Systems.

END OF SECTION

SECTION 17033
CONDUITS AND BACKBOXES FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Provide telecommunications pathways in accordance with EIA TIA/EIA-569-B, as specified in this Section and as shown on the plans. Provide system furniture pathways in accordance with UL 1286. Provision of all low voltage Communications Systems Pathway and Electronic Security and Safety System Pathway, including:
   1. Rigid steel conduit and fittings.
   2. P C insulated rigid steel conduit and fittings
   3. Intermediate metal conduit and fittings
   4. Electrical metallic tubing and fittings.
   5. Flexible metallic conduit and fittings.
   6. Liquidtight flexible metallic conduit and fittings.
   7. Miscellaneous conduit fittings and products.
   8. Junction Boxes
   9. Floor Boxes
   10. Hinged cover enclosures.
   11. Pullboxes and Terminal Cabinets.

B. At Hazardous Occupancies, installation conforms to the requirements of California Electric Code for Class and Division rating of spaces.

1.2 RELATED WORK IN OTHER SECTIONS

A. Related work: Consult all other Sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation
   1. Section 01730 - Cutting and Patching.
   2. Section 07600 - Flashing and Sheet Metal.
   3. Section 09900 - Paints and Coatings. Exposed conduit and other devices.
   4. Section 17010 - Common Work Results for Communications.
   5. Section 17026 - Grounding and Bonding for Communications Systems.
   6. Section 17029 - Hangers and Supports for Communications Systems.
   7. Section 17036 - Cable Trays for Communications Systems.
   8. Section 17100 - Structured Cabling, Basic Materials and Methods.
   9. Section 17150 - Communications Horizontal Cabling.

1.3 REFERENCES

A. Usage: In accordance with Section 01110 - Summary of Work.
   1. American National Standards Institute (ANSI).
      a. ANSI C80.l 1994 Rigid Steel Conduit - Zinc Coated.
      b. ANSI C80.3 1991 Electrical Metallic Tubing - Zinc Coated.
   2. National Electrical Manufacturers Association (NEMA).
      a. NEMA 250-2003 Enclosures for Electrical Equipment (1000 olts Maximum).

b. NEMA FB 1 (ANSIINEMA FB 1-2003) Fittings, Cast Metal Boxes and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable.
c. FB 2.10 2000 Selection and Installation Guidelines For Fittings For Use With Non-Flexible Metallic Conduit Or Tubing (Rigid Metal Conduit, Intermediate Metal Conduit, And Electrical Metallic Tubing).
d. FB 2.20 2000 Selection and Installation Guidelines for Fittings for use with Flexible Electrical Conduit and Cable.
e. NEMA ICS 6 1988 (Rev. 1) Enclosures for Industrial Control and Systems.
f. NEMA OS 3-2002 Selection and Installation Guidelines for Electrical Outlet Boxes.
g. NEMA RN 1-1998 Polyvinyl Chloride (P C) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
h. NEMA TC 7 2000 Smooth Wall Coilable Polyethylene Electrical Plastic Duct.
i. NEMA TC 13 2000 Electrical Nonmetallic Tubing (ENT).
j. NEMA TC 14 1984(R 1986) Filament-Wound Reinforced Thermosetting Resin Conduit and Fittings.

3. Underwriters Laboratories, Inc. (UL).
a. UL 1 2000 Flexible Metal Conduit.
b. UL 6 2004 Electrical Rigid Metal Conduit – Steel.
c. UL 50 (1995; R 1999, Bul. 2001) Enclosures for Electrical Equipment.
d. UL 360 1986 (Bul. 1991) (R 1993) Liquid-Tight Flexible Steel Conduit.
e. UL 514A 1991 (R 2004) Metallic Outlet Boxes.
f. UL 514B 1989 (R 2004) Conduit, Tubing and Cable Fittings.
g. UL 514C 1996 (R 2000) Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers.
h. UL 651 1989 (R 1989) (Bul. 1993) Schedule 40 and 80 Rigid P C Conduit.
i. UL 797 1993 (R 2004) Electrical Metallic Tubing – Steel.
j. UL 1242 1983 (R1993) (Bul. 1993) Intermediate Metal Conduit.
k. UL 1286(1999; R 2001, Bul. 2002) Office Furnishings.
l. UL 1479 Fire Tests of Through Penetration Firestops.
m. UL Fire Resistance Directories.

1.4 SUBMITTALS

A. Conform to the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 UALITY ASSURANCE

A. All materials, equipment and parts comprising the units specified herein shall be new and unused, and of current manufacturer.
B. Only products and applications listed in this Section may be used on the project unless otherwise submitted and approved by the Owner's Representative.

PART 2 PRODUCTS

2.1 GENERAL

A. Provide the following types of conduit systems listed by their commonly used generic name.

2.2 RACEWAY

A. Manufacturers:
   1. Raceway:
      a. Allied Tube and Conduit Co.
      b. Triangle PWC, Inc.
      c. Western Tube and Conduit Corp.
      d. Spring City Electrical Manufacturing Co.
      e. Occidental Coating Co. (OCAL).
      f. Alflex Corp.
      g. American Flexible Metal Conduit Co.
      h. Anaconda.
      i. Or equal.
   2. Fittings:
      a. Appleton Electric Co.
      b. OZ/Gedney.
      c. Thomas & Betts Corp.
      d. Spring City Electrical Manufacturing Co.
      e. Occidental Coating Co. (OCAL).
      f. Carlon.
      g. Or equal.

B. Rigid Steel Conduit.
   1. Drawing and Spec Reference: RSC.
   2. Construction:
      a. Conduit: Full weight, threaded, hot-dip galvanized steel, conforming to ANSI C80.1 and UL 6.
      b. Standard threaded couplings, locknuts, bushings, and elbows: Only materials of steel or malleable iron are acceptable. Locknuts shall be bonding type with sharp edges for digging into the metal wall of an enclosure.
      c. Three piece couplings: Electroplated, cast malleable iron.
      d. Insulating bushings: Threaded polypropylene or thermosetting phenolic rated 150 degree C minimum.
      e. Insulated grounding bushings: Threaded cast malleable iron body with insulated throat and steel "lay-in" ground lug with compression screw.

f. Insulated metallic bushings: Threaded cast malleable iron body with plastic insulated throat rated 150 degrees C.
g. All fittings and connectors shall be threaded.

C. Coated Rigid Steel Conduit:
1. Drawing and Spec Reference: CRSC.
2. Conduit: Full weight, threaded, hot-dip galvanized steel, conforming to ANSI C80.l and NEMA RN-l with nominal 40 mil thermoplastic vinyl coating, heat fused and bonded to the exterior of the conduit.
3. Fittings:
   a. Conduit couplings and connectors shall be as specified for galvanized rigid steel conduit and shall be factory P C coated with an insulating jacket equivalent to that of the coated material.
   b. Fittings over-sleeve to extend 1 conduit diameter or 1-1/2" beyond fitting, whichever is less.
4. Performance:
   a. Tensile Strength: 3500 psi.
5. Approvals:
   a. NEMA RNI (Type 40 - 40 mils thick).
   b. CalTrans Type 2
6. Manufacturers:
   a. Plastibond by RobRoy Industries.
   b. Occal-40 by Occidental Coating Company.
   c. KorKap by Plastic Applicators.
   d. Ocal-Blue.
   e. Or equal.

D. Intermediate Metal Conduit.
1. Drawing Reference: IMC.
2. Conduit: Hot dip galvanized steel meeting the requirements of CEC Article 345 and conforming to ANSI C80.6 and UL 1242.
3. Fittings: Conduit couplings, connector and bushing shall be as specified for galvanized rigid steel conduit. Integral retractable type IMC couplings are also acceptable.

E. Electrical Metallic Tubing.
1. Drawing and Spec Reference: EMT.
2. Conduit: Shall be formed of cold rolled strip steel, electrical resistance welded continuously along the longitudinal seam and hot dip galvanized after fabrication. Conduit shall conform to ANSI C80.3 specifications and shall meet UL classifications.
3. Set screw type couplings: Electroplated, steel or cast malleable iron, UL listed concrete tight. Use set screw type couplings with four setscrews each of conduit sizes over 2 inches. Setscrews shall be of case hardened steel with hex head and cup point to firmly seat in wall of conduit for positive grounding.

4. Set screw type connectors: Electroplated steel or cast malleable iron UL listed concrete tight with male hub and insulated plastic throat, 150 degree C temperature rated. Setscrew shall be same as for couplings.
5. Raintight couplings: Electroplate steel or cast malleable iron; UL listed raintight and concrete tight, using gland and ring compression type construction.
6. Raintight connectors: Electroplated steel or cast malleable iron, UL listed raintight and concrete tight, with insulated throat, using gland and ring compression type construction.

F. Flexible Conduit:
1. Drawing Reference: FLE
2. Construction:
   a. Flexible steel, zinc coated on both inside and outside by hot-dipping process.
   b. Interlocking spirally wound continuous steel strip.
   c. 3/4" minimum size.
3. Fittings: Connectors shall be of the single screw clamp variety with steel or cast malleable iron bodies and threaded male hubs with insulated throats. Exception: Pressure cast screw-in connectors shall be acceptable for fixture connection in suspended ceilings and cut-in outlet boxes within existing furred walls.
4. Approvals:
   a. UL 1

G. Liquidtight Flexible Metallic Conduit:
1. Drawing Reference: Liquidtight
2. Conduit: Shall be fabricated in continuous lengths from galvanized steel strips, interlocking spirally wound, covered with extruded liquidtightjacket of polyvinyl chloride (P C) and conforming to UL 360. Provide conduit with a continuous copper-bonding conductor wound spirally between the convolutions.
3. Fittings: Connector body and gland nut shall be of cadmium plated steel or cast malleable iron, with tapered, male, threaded hub; insulated throat and neoprene "0" ring gasket recessed into the face of the stop nut. The clamping gland shall be of molded nylon with an integral brass push-in ferrule.

2.3 MISCELLANEOUS CONDUIT FITTINGS AND PRODUCTS

A. General
1. UL 514B.
2. Listed in UL Electrical Construction Materials List.

B. Conduit Fittings, Insulated Throat Grounding Bushings
1. Description
   a. Threaded for Rigid Steel Conduit and Intermediate Metal Conduit.
   b. UL Listed for use with copper conductors.
   c. Thermoplastic insulated liner for 105 degrees Celsius.
   d. Body of malleable iron, zinc plated; or die cast zinc.
2. Manufacturer

a. Thomas & Betts (Steel City) BG-801 Series
b. O-Z/Gedney
c. Or equal.

C. Watertight conduit entrance seals: Steel or cast malleable iron bodies and pressure clamps with P C sleeve, neoprene sealing grommets and P C coated steel pressure rings. Fittings shall be supplied with neoprene sealing rings between the body and P C sleeve.

D. Watertight cable sealing bushings: One piece, compression molded sealing ring with P C coated steel pressure disks, stainless steel sealing screws and zinc plated cast malleable iron locking collar.

E. Expansion fittings: Multi-piece unit comprised of a hot dip galvanized malleable iron or steel body and outside pressure bussing designed to allow a maximum of 4" conduit movement (2" in either direction). Furnish with external braid tinned copper bonding jumper. Unit shall be UL listed for wet or dry locations.

F. Expansion/deflection couplings: Multi-piece unit comprised of a neoprene sleeve with internal flexible tinned copper braid attached to bronze end couplings with stainless steel bands. Coupling shall accommodate .75- inch deflection, expansion, or contraction in any direction, and allow 30-degree angular deflections. Flexible, corrosion-resistant, watertight, moisture and heat resistant molded rubber jacket and stainless steel jacket clamps. Unit shall comply with UL467 and UL514.

1. Manufacturer:
   a. OZ/Gedney Type D
   b. Steel City Type EDF
   c. Or equal.

G. Fire rated penetration seals:

1. UL classified.
2. Conduit penetrations in fire rated separation shall be sealed with a UL classified assembly consisting of fill, void or cavity materials.
3. The fire rated sealant material shall be the product best suited for each type of penetration, and may be a caulk, putty, composite sheet or wrap/strip.
4. Penetrations of rated floors shall be sealed with an assembly having both F and T ratings at least equal to rating of the floor.
5. Penetrations of rated walls shall be sealed with an assembly having an F rating at least equal to the rating of the wall.

H. Standard products not herein specified:

1. Submit for review a listing of standard electrical conduit hardware and fittings not herein specified prior to use or installation, i.e. locknuts, bushings, etc.
2. Listing shall include manufacturers name, part numbers, and a written description of the item indicating type of material and construction.
3. Miscellaneous components shall be equal in quality, material, and construction to similar items herein specified.

I. Hazardous area fittings: UL listed for the application.

2.4 JUNCTION AND DE ICE BOXES

A. Junction and Device Boxes

1. Drawing References: As shown on Symbol Schedule
2. Construction:
    a. Concealed/Flush Mounted:
    b. One or two piece welded knockout boxes.
    c. UL 514A, cadmium or zinc-coated 1.25 oz/sq. ft., if ferrous metal.
    d. Pressed sheet steel, for indoor locations.
    e. UL 514C approved if non-metallic.
    f. At hollow masonry, tile walls and plaster walls, provide with device rings as required.
    g. Surface mounted:
        i. Exterior – Conform to the Junction and/or PullBox construction scheduled on the Plans. Where construction not otherwise scheduled or noted on the plans, conform to the following:
            (1) Cast iron or aluminum with threaded hubs and mounting lugs.
            (2) Gasketed cover with spring lid.
        ii. Concrete floor embedded:
            (1) Cast iron concrete pour boxes with screwed brass cover, unless otherwise noted.
            (2) Cadmium plated screw cover attachment at least 6 on center.
    h. If size not otherwise noted, at least 4S (4" square) by 2-1/8" deep, or Code minimum size, whichever is larger.
        i. Wherever 4S is indicated, contractor may at their option substitute 4-11/16" square boxes while maintaining the minimum depth required by these specifications and the drawings.
    i. Provide complete with approved type of connectors and required accessories, including attachment lugs or hangers. Provide raised device covers as required to accept scheduled device.
3. Approvals.
    a. UL 514A
4. Manufacturers:
    a. Interior:
        i. Steel City.
        ii. Bowers.
        iii. Or equal.
    b. Exterior, exposed with cover of same construction.
        i. Appleton
        ii. Pyle-National
        iii. Or equal.
    c. Other conditions:
        i. Any meeting approvals and requirements.

B. Locking Wall Boxes

2. Drawing References: L WB3, L WB4.
3. Features/Functions/Construction.
    a. Locking hinged steel cover.
    b. Accepts 3 or 4 gang plate inserts.
    c. 2-1/8" minimum depth behind plate insert.
    d. Protects contents from tampering when closed.
    e. Lid incorporates push-to-open retention latch.
    f. Lid folds down 180 degrees, out of way during use.
    g. Size.
        i. LWB3: NEMA 3 gang capacity.
        ii. LWB4: NEMA 4 gang capacity.
    h. Finish:
        i. Submit White or Prime options for selection by the Architect.
4. Manufacturers
    a. FSR Inc.
        i. LWB3: WB-3G with 3 gang Bowers backbox.
        ii. L WB4: WB-4G with 4 gang Bowers backbox.
    b. Custom by C.W. Cole.
    c. Or equal.

2.5 CABINETS AND ENCLOSURES

A. Terminal Cabinets.
1. Drawing Reference: As Scheduled.
2. Construction:
    a. Zinc Coated Sheet Steel, code gauge with standard concentric knockouts for conduit terminations.
    b. Interior dimensions not less than those scheduled.
    c. Finish: Manufacturer's standard gray baked enamel finish.
    d. Covers: Trim fitted, continuous hinged steel door, flush catch-lockable and keyed to match. Screw fastened doors not acceptable.
        i. Door face to be not less than 95 of panel interior dimensions.
    e. Provide with 3/4" fire retardant treated ply backboard.
3. Mounting:
    a. Flush cabinets shall be furnished with concealed trim clamps and shall be not less than 4 inches deep.
    b. Surface cabinets shall be furnished with screw cover trim, flush hinged door and shall not be less than 6 inches deep.
    c. Interior Applications:
        i. NEMA 250 Type 1, unless otherwise noted. Refer to plans and schedules.
    d. Exterior Applications:
        i. NEMA 250 Type - As Scheduled, not less than NEMA 3R.
4. Manufacturers:
    a. B-Line Electrical Enclosures.

b. Circle AW Products.
c. Hammond.
d. Henessey.
e. Hoffman.
f. Myers Electric Products.
g. Rittal.
h. Or equal.

2.6 FLOOR BOXES, POKE THROUGHS AND MONUMENTS

A. Floor Box High Capacity, 3 Compartment
  A. Plan Reference: FC4, FW4, FR4
  2. Features
    a. UL Listed
    b. Box
      i. Size at least 10 inches by 12 inches by 6 inches deep.
      ii. Three compartments, with voltage barriers, with standard electrical plate mounting brackets for at least:
        (1) One single gang.
        (2) One 2 gang.
        (3) One 4 gang.
    c. Knockouts concentric, combination 1 inch and 1.25 inch.
    d. Cover for carpet finish.
    e. Cover size approximately 10.5 inches by 12.5 inches.
    f. At least 11 gage steel.
    g. Carpet flange of mitered brass or aluminum edging.
      i. Option of brass or aluminum to be selected by the Architect.
      ii. Option of 0.25 inch or 0.5 inch flange height to be selected by the Contracting Officer.
    h. Within cover, provide a lift-off, full-access door, open area approximately 6.5 inches by 8 inches.
    i. Within the lift-off, full-access door, provide a hinged, fold-back cable exit port.
    j. Open area approximately 2 inches by 2 inches.
    k. Flush in closed position.
  3. Applications:
    a. FC4: Concrete floor systems. Provide "pour pan" protection at slab on grade conditions.
    b. FR4: Raised Floor Conditions.
    c. FW4: Wooden Floor Conditions.
  4. Approvals:
    a. UL 514A scrub water.
  5. Manufacturers:
    a. FSR Inc.
      i. FC4: FL-500P-(cover flange code)-4. Supply larger boxes where scheduled and indicated plates and jacks require it.

Provide manufacturer's "Pour Pan" FL-GRD2 or FL-GRD4 to protect from moisture at installations at grade level.

ii. FW4, FR4: FL-540P-(cover flange code)-4. Supply larger boxes where scheduled and indicated plates and jacks require it.

b. RCI Systems, Inc.

i. FC4: FB-2600. Supply larger boxes where scheduled and indicated plates and jacks require it. Provide manufacturer's "Pour Pan" to protect from moisture at installations at grade level.

c. Wiremold/Walker RFB-ll.

d. Or equal.

B. Electrified Furniture Monuments.

1. Plan Reference: EFM
2. Construction:
   a. Above slab box construction.
      i. Die-cast aluminum with satin finish.
      ii. Four-piece assembly consisting of base plate, three-sided housing, and removable faceplates.
      iii. Equipped with faceplate that accepts modular jacks specified in Section 17150.
   b. Manufacturers:
      i. Wiremold 525RT
      ii. Or equal.

2.7 TABLETOP BOXES

A. Presenter Desk Network Interface.

1. Drawing Reference: PDN.
2. Construction/Features/Function.
   a. Steel Enclosure with flip-up lid - refer to detail on plans.
   b. Installs flush in Presenter Desktop or Conference Table.
3. Approvals
   a. UL Spill Rating
4. Accommodates Keystone standard network jack.
5. Convenience power receptacle.
6. Manufacturer:
   a. Mockett PCSS.
   b. Wiremold.
   c. Or equal.

PART 3 EXECUTION

3.1 CONDUIT APPLICATION

A. General: Install the following types of conduits and fittings in the locations listed, unless otherwise noted in the drawings:

1. Exterior, Exposed:

a. Type RSC for applications up to 8 feet AFF or to first pull box, whichever is first, applications subject to physical abuse or for applications greater than 4" diameter.
b. EMT acceptable in all other applications not noted above up to 4", where used in conjunction with specified Raintight (compression) couplers.

2. Interior, Exposed, Wet and Damp Locations:
   a. Type RSC.
   b. At interior locations over 8 feet above finished floor, EMT acceptable.
3. Interior, Hazardous Locations.
   a. Type RSC
   b. Type IMC, where permitted by the CEC.
4. Interior, exposed or concealed, dry locations:
   a. RSC, if subject to physical abuse.
   b. EMT, if not subject to physical abuse.
5. Interior, concealed, damp locations, including in masonry walls.
   a. RSC
6. Embedded in Concrete.
   a. RSC or rigid non-metallic conduit.
   b. P C Type DB-120.
7. Transition from walls to open plan furniture systems:
   a. Liquidtight.

3.2 GENERAL RE UIREMENTS

A. Refer to the manufacturer's instructions and conform thereto.
B. Distribution Pathway via EMT Raceway:
   1. The EMT conduit is to be installed meeting the NEC handbook Article 348 Installation Specifications.
   2. Provide escutcheon plates for all through wall conduit stubs.
   3. All ends of conduits shall be cut square, reamed and fitted with insulated bushing.
   4. All conduit which passes through fire walls shall be sealed with fire stop putty after all station wire has been installed.

3.3 MOUNTING AND INSTALLATION DE ICE BOXES

A. Conform to the more restrictive of NEMA OS 3-2002 and the following.
B. Provide backboxes at all communications systems devices. Installation of device plates directly to wall surface without use of a backbox, unless specifically directed on plans, is unacceptable.
C. The distance between pull boxes shall not exceed 150 feet or more than two 90 degree bends.
D. Align boxes plumb with floor and surrounding construction. At door frames, locate 4" from frame. erify placement with Owner's Representative details to ensure that box clears all trim, etc.
E. Support and fasten boxes securely. At stud walls use rigid bar hangers, attached to hanger with stud and nut.

F. At existing locations, provide cutting, patching and finishing as required to maintain or restore finishes so that resulting installation is integrated into the Architectural decor of the particular location.

G. Mounting Height: the mounting height of a wall-mounted outlet box is defined as the height from the finished floor to the horizontal center line of the cover plate.

H. Mount outlet boxes with the long axis vertical. Three or more gang boxes shall be mounted with the long axis horizontal.

I. Install wiring jacks and outlet devices only in boxes which are clean; free from excess building materials, dirt, and debris.

J. Install wiring jacks and outlet devices after wiring work is complete.

3.4 TERMINAL CABINETS, JUNCTION BOXES AND PULL BOXES

A. General

1. Thoroughly examine site conditions for acceptance of cabinets and enclosures installation to verify conformance with manufacturer and specification tolerances. Do not commence with installation until all conditions are made satisfactory.

B. Set cabinets and enclosures plumb and symmetrical with building lines. Furnish and install all construction channel bolts, angles, etc. required to mount all equipment.

C. Cabinets and enclosures shall be anchored and braced to withstand seismic forces calculated in accordance with standards referenced in Section 17029.

D. "Train" interior wiring, bundle and clamp using specified plastic wire wraps. Separate power and signal wiring.

E. Replace doors or trim exhibiting dents, bends, warps or poor fit that may impede ready access, security or integrity.

F. Terminate conduit in cabinet with lock nut and grounding bushing.

G. Cleaning

1. Touch-up paint any marks, blemishes or other finish damage suffered during installation.
2. acuum clean cabinet on completion of installation.

3.5 SUPPORT

A. Provide supports for raceways as specified in Section 17029 - Hangers and Supports for Communications Systems.

B. All raceways installed in exposed dry locations shall be grouped in a like arrangement and supported by means of conduit straps, wall brackets or trapeze hangers in accordance with Code and the requirements of the this Section and Section 17029 - Hangers and Supports for Communications Systems. Fasten all hangers from the building structural system.

C. Provide supports and mounting attachments per the most restrictive of Code and the following.

Raceway Size (inches)	No of cables in run	Location	Support Spacing (feet)	
			RSC	EMT
Horizontal Runs				
1/2, 3/4	1-2	Flat Ceiling Wall Runs	5	5
1/2, 3/4	1-2	Where access limited to building	7	7

		structure		
1/2, 3/4	3≥	Any location	7	7
1≥	1-2	Flat ceiling or wall	6	6
1≥	1-2	Where access limited to building structure	10	10
1≥	3≥	Any locations	10	10
Any	Any	Concealed	10	10
ertical Runs				
1/2, 3/4	Any	Exposed	7	7
1, 1-1/4	Any	Exposed	8	8
1-1/2 ≥	Any	Exposed	10	10

D. Install no more than one coupling or device between supports.

E. Conduit support.

1. As specified in Section 17029 - Hangers and Supports for Communications Systems.

F. The Owner's Representative reserves the right to request additional supports where in their sole opinion said supports are required. Any additional supports shall be installed at no additional cost to the Owner.

3.6 PENETRATIONS

A. Gypsum Wall Board Penetrations: Provide circular penetrations maximum 1/8" inch larger than outer diameter of conduit being used. On both sides of the wall fill space between conduit and wall with joint compound, depth to match gypsum board thickness.

B. Install UL listed fire-stop system whenever a raceway penetrates a firewall in conformance with the manufacturer's directions, the published systems assembly requirements, CBC Section 709 and 710 and CEC 300-21, whichever is the most restrictive. At cable tray penetrations, provide pillow type removable fire stop per CBC Section 709 and 710, the published systems assembly requirements and the manufacturer's directions, whichever is the most restrictive.

C. All communications systems conduit openings in walls and floors are the responsibility of the Contractor. Install sleeves shown on the drawings when the concrete is poured. Any openings required after the concrete has set maybe core drilled.

3.7 RACEWAY INSTALLATION, GENERAL

A. Raceway runs are shown schematically. Install concealed unless specifically shown otherwise. Supports, pull boxes, junction boxes and similar generally not indicated. Provide where designated.

1. Install exposed conduit and raceway parallel and perpendicular to nearby surfaces or exposed structural members, and follow the surface contours. Level and square conduit and raceway runs.

2. Raceway runs shall be mechanically and electrically continuous between all each equipment rack and utility demarcation point, receptacle and/or surface raceway strip, as applies.
3. Each conduit shall enter and be securely connected to a cabinet, junction box, pull box, or outlet by means of a locknut on the outside and a bushing on the inside or by means of a liquid-tight, threaded, self-locking, cold-weld type wedge adapter.
4. Bends.
   a. All bends or elbows shall have a minimum radius as follows:

Conduit Size	Min. Radius (Inches)
	8
1	12
1-1/4	18
2	24
2-1/2	24
3	30
3-1/2	30
4	30
5	36
6	42

   b. Use factory elbows or machine bends for conduit bends 1-1/4" and larger.
5. Make bends and offsets so the inside diameter is not effectively reduced. Make bends in parallel or banked runs from the same center line so that the bends are parallel.
6. Install at least one (1) 3/8", 200 pound strength nylon pull cord in all empty raceways.
7. Raceways crossing building expansion joints or in straight runs exceeding 1 00 feet shall be provided with UL listed expansion fittings.
8. Install conduit seals and drains to prevent accumulated moisture in conduits from entering Communications System enclosures.

B. Do not install conduit in concrete slabs unless specifically directed by Owner's Representative. Embedded conduits in concrete slab walls, and columns shall be installed in center third between upper and lower layers of reinforcing steel as directed by the Owner's Representative. Space conduits 8" on center except at cabinet locations where slab thickness shall be increased as directed by the Owner's Representative.

C. All conduits to be kept 12" away from steam or hot water lines. Install horizontal conduit and raceway runs below water and steam piping.

D. Conduit dropping down to equipment shall be as straight as possible without any offsets, parallel or perpendicular to walls, ceilings and other building features.

E. Conduit installed on any equipment shall be run symmetrical with the equipment and in such a manner as to:
   1. not to be exposed to damage;

2. not interfere with access to components of the equipment that will interfere with maintenance operation or;
3. not to be in a manner that the Owner deems detrimental to its operation.

F. Whenever an installation such as that listed occurs, the Contractor shall make all necessary changes at no additional cost to the Owner.

G. All cut ends of conduit, scratches, tool marks, etc. on any metallic raceway installed in the ground or on the exterior of the building shall be treated with two coats of specified Touch Up Paint/Tape.

H. Exposed conduit and metallic surface raceway installed in finished spaces shall be painted to match surrounding surfaces using paint and methods directed by the Owner's Representative.

I. All raceways stubbing up into equipment or racks shall be sealed. Raceways with conductors shall be plugged with duct-seal. Spare raceways shall be capped. Prevent foreign matter from entering conduit and raceway; use temporary closure protection. Replace conduits containing concrete, varnish or other foreign material.

J. Complete installation of conduit and raceway runs before starting installation of cables/wires within conduit and raceway.

K. Use specified conduit and raceway fittings that are of types compatible with the associated conduit and raceway and suitable for the use and location. Join and terminate conduit and raceway with fittings designed and approved for the purpose of the conduit and raceway system and make up tight.

L. Where chase nipples are used, align the raceway and coupling square to the box and tighten the chase nipple so no threads are exposed.

M. Horizontal conduit or EMT runs, where required and permitted, shall be installed as close to ceiling or ceiling beams as practical.

N. Conduit and EMT connected to wall outlets shall be run in such a manner that they will not cross water, steam or waste pipes or radiator branches.

O. Conduit and EMT shall not be run through beams, purlins or columns except where permission is granted by Owner's Representative in writing.

P. Bond installed metallic raceway in accordance with the requirements of the CEC.

3. RACEWAY FOR ACCESS CONTROL AND INTRUSION DETECTION SYSTEMS

A. Refer to general requirements herein above.

B. Access control and intrusion detection systems shall be installed in entirely in raceway, including:
   1. Rough- in for the field devices as detailed and scheduled on the plans.
   2. Pull cabinets located at regular intervals in the building, sized to accommodate the access control and intrusion detection cabling.
      a. Size raceway between pull cabinets to accommodate fill of field devices.
      b. Provide two separate raceway systems.
         i. one for power cabling, including power for door locks and field devices.

ii. one for Access Control and Intrusion Detection System field devices, including card readers, motion detectors, glass break sensors, request-to-exit sensors and similar.

(1) For Owner's Security contractor provided card readers, assume a 0.26 inch diameter cable is required from the serving IDF or BD to each door scheduled to receive a card reader.

3. Gutter at backboard of BD and IDF to terminate the raceway arriving from the pull cabinets and directly from the field devices.
4. Terminal cabinets at backboard of BD and IDF to enclose the TB15's used to terminate the field wiring installed under the work of this contract.

3. HA ARDOUS LOCATIONS

A. Use rigid steel conduit only.

B. Install UL listed sealing fittings that prevent passage of explosive vapors in accordance with the manufacturers written instructions. Locate fittings at suitable, accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank coverplate having a finish similar to that of adjacent plates or surfaces.

C. Install raceway sealing fittings at the following points and elsewhere as indicated:
1. Where conduits enter or leave hazardous locations.

3.10 REUSE OF EXISTING CONDUIT

A. Existing conduit is to be used as a pathway only where so shown on the drawings.

B. Prior to beginning work involving the use of an existing conduit, the Contractor shall consult with the Owner's Representative in order to establish whether or not the conduit contains active service.

C. If no active service exists within the conduit, all cable is to be removed, and work is to proceed.

D. If active service does exist within the conduit and it has been determined that service needs to be disrupted, then work on that conduit shall not proceed until a schedule of service outage has been established by Owner's Representative. Once given permission to proceed, the Contractor shall within the time period of one (l) working day; remove the old cable, install, terminate and test the new cables, and notify the Owner's Representative the work using the specific conduit has been completed.

E. Conduit preparation procedure:
1. Remove existing Wires and Cables (if any).
2. Run a mandrel Y2" smaller than the inside diameter of the conduit through the conduit receiving new wires and cables.
3. If the specified size mandrel will not pass through the existing conduit, start with a smaller size mandrel and increase mandrel size until the specified sized mandrel will pass.
4. Run a wire brush and clean rag with an outside diameter 1/8" larger than the inside of the conduit through the conduit receiving new wires and cables.
5. Repeat above until conduit is clean and materials detrimental to the wire and cables to be installed no longer exit conduit with the clean rag.

3.11 STATION CABLE PATHWAY INSTALLATION

A. Cut In Boxes and Station Outlet Boxes.

1. Unless otherwise noted on the plans, all cut in boxes and surface station outlet boxes are to be installed at a height of 36" A.F.F. (above finished floor) to center, except for those intended to be used for telephone wall jacks. Those plates or boxes that are to be used for telephone wall jacks shall be installed at a height of 54 A.F.F. to center.
2. All station outlets shall be installed so that their edges are parallel to the vertical and horizontal edges of the surface on which they are mounted.

END OF SECTION

SECTION 17036
CABLE TRAYS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK
A. Cable Trays for Communications Cabling.
   1. Cable Trays
   2. Cable Runways
   3. Basket Tray

B. Cable Tray Support

1.2 RELATED WORK UNDER OTHER SECTIONS
A. Section 17010 - Common Work Results for Communications.
B. Section 17026 - Grounding and Bonding for Communications Systems.
C. Section 17029 - Hangers and Supports for Communications Systems.
D. Section 17033 - Conduits and Backboxes for Communications Systems.
E. Section 17053 - Identification for Communications Systems.
F. Section 17100 - Structured Cabling, Basic Materials and Methods.
G. Section 17150 - Communications Horizontal Cabling.

1.3 REFERENCES
A. Usage: In accordance with Section 01110 - Summary of Work.
   1. National Electrical Manufacturers Association (NEMA).
      a. NEMA FG 1 1-1998 Fiberglass Cable Tray Systems.
      b. NEMA E 1 1-1998 Metal Cable Tray Systems.
      c. NEMA E 2 2001 Metal Cable Tray Installation Guidelines.

1.4 SUBMITTALS
A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 Common Work Results for Communications.

1.5 DELI ERY, STORAGE AND HANDLING
A. Procedures: In accordance with Section 01600 - Product Requirements.

1.6 SE UENCING
A. Not Used.

PART 2 PRODUCTS

2.1 CABLE TRAY, CABLE RUNWAY AND BASKET TRAY
A. Cable Tray
   1. Drawing and spec reference: CTxx-yy, where "xx" denotes nominal width of cable runway in inches and "yy" denotes nominal depth.
   2. Construction:
      a. Steel or aluminum.
      b. Rungs 9" on center, unless otherwise noted.
      c. UL Classified splice kits.
   3. Approvals:

a. ASTMA513.
b. California Electrical Code, Article 318.
c. NEMA El Class 12C minimum, or to suit indicated cable and raceway loads, whichever is greater.

4. Manufacturers:
a. B-Line Cable Tray Systems Ladder Type Cable Tray.
b. Globe Tray.
c. PW Industries.
d. Or equal.

B. Cable Runway
1. Drawing and spec reference: CR , where " " denotes nominal width of cable runway in inches.
2. Construction:
a. Solid Steel Side Bar per ASTM A-36 or Tubular Steel Side Bar per ASTM A-513.
b. 1.5" x 0.375 minimum tubular side stringers.
c. UL Classified splice kits.
d. Designed to support at least 100 pounds per foot load with a Safe Working Load deflection of or less.
3. Finish: Telco gray powder coat or gold on zinc plating.
4. Approvals:
a. ASTM A513
b. UL Classified as an equipment grounding conductor.
c. California Electrical Code, Article 318
5. Manufacturers:
a. B-Line Telecom-Saunders SB-17.
b. Chatsworth Products Inc. 11275 series.
c. PW Industries.
d. Or equal.

C. Cable Tray, Open Wire Frame
1. Drawing and spec reference(s): CTWxx-y, where xx denotes the tray width and y the depth of the tray, in inches.
2. Construction.
a. Welded wire mesh with continuous safety edge wire lip.
b. Mesh forms grid at nominally 2" by 4".
c. Carbon Steel.
d. Electroplated zinc galvanized.
e. All bends, seams and joints field fabricated from basic straight section pieces and splice components as supplied by the manufacturer.
f. Where supported from ceiling, supported at both sides in trapeze arrangement - centerline support not acceptable.
g. Provides pathway complying with EIA/TIA-569B and NEMA Publications El & E2.
h. Meets requirements of California Electrical Code, Article 318.

3. Approvals:
   a. NEMA Publications El & E2.
4. Manufacturers:
   a. B-Line Wire Basket Runway.
   b. Cablofil.
   c. G.S. Metals Corp.
   d. Or equal.

D. Cable Tray, Fiberglass
1. Drawing and spec reference(s): CTFxx-y, where xx denotes the tray width and y the depth of the tray, in inches.
2. Construction
   a. Non-metallic, Non-conductive, Fiberglass Construction, suitable for continuous exterior exposure in a marine environment.
   b. Deep structural C-form side channels.
   c. Ladder rungs at 9" O.C., UON
   d. All bends, seams and joints field fabricated from basic straight section pieces and splice components as supplied by the manufacturer.
3. Approvals:
   a. UL Listed as a system.
   b. ASTMA568.
   c. NEMA Publication FGl.
   d. NEMA 12C.
   e. California Electrical Code, Article 318.3.
   f. Meets ASTM E-84 smoke density rating; Polyester 680, inyl Ester 1025.
   g. Class 1 Flame Rating and self-extinguishing requirements of ASTM D-635.
4. Manufacturers:
   a. Enduro Composite Systems.
   b. Robroy.
   c. PW Industries.
   d. Or equal.

PART 3 EXECUTION

3.1 C T A

A. Unless otherwise noted, communications cable tray installations shall conform to the following:
1. Type CT - Within Communications Rooms (including Telecomm Building (ADF), BDF and IDF spaces).
2. Type CTW - Horizontal station cabling outside of the communications rooms where shown on plans or where more than 100 cables are supported, whichever is greater.

3. Type CR - Wherever vertical transitions from ceiling or floor sleeves are required within the Communications Room.

3.2 I

A. Provide all required supports, fittings and accessories for a complete system as described in NEMA E-2, by Code, manufacturer recommendation or as shown on the plans, whichever is most restrictive.

B. Bond sections to one another and to building ground.

C. Access Clearance. Maintain access for use by Owner's personnel to tray as described below. Coordinate installation with work of structural, mechanical, plumbing/fire protection and electrical trades to maintain required access.

1. Unless shown otherwise on the plans, provide a clear access of at least 24" wide along one side of each tray for use by Owner's personnel.
2. Unless shown otherwise on the plans, installation to maintain at least 12" vertical clearance over the top of each tray for use by Owner's personnel.

3.3 S

A. Support in accordance with the most restrictive of the following:

1. Contractor's engineered means of engineered support submitted in accordance with the requirements of 17010 - Common Work Results for Communications and Section 17029 - Hangers and Supports for Communications Systems.
2. California Building Code, including but not limited to requirements of olume 2, Chapter 16, Division *N,* Section 1632 and Table 16-0.
3. Metallic Cable Tray: NEMA E 2-2001, or latest edition.
4. Fiberglass Cable Tray: NEMA FG-I-1998, or latest edition.

B. Provide lateral sway bracing as required by Code.

END OF SECTION

SECTION 17053
IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Provide all labor, materials, tools, and equipment required for permanent intelligible labeling on, or adjacent to, all cabling, connectors, innerduct, faceplates, jacks, receptacles, controls, fuses, circuit breakers, patching jacks, and racks.

B. This section includes minimum requirements for the following:
   1. Labeling Communications Cabling
   2. Labeling Closet Hardware
   3. Labeling Work Stations
   4. Labeling Pathways, Spaces, Grounding and Bonding.

C. Refer to detailed plans for additional requirements.

D. Clearly and distinctly indicate the function of the item.

E. Coordinate with Record Drawings

1.2 REFERENCES

A. Usage: In accordance with Section 01110 – Summary of Work.

B. American Society for Testing and Materials (ASTM)
   1. ASTM D 709(2001) Laminated Thermosetting Materials

C. Electronic Industries Alliance (EIA)
   1. EIA TIA/EIA-606-A(2002) Administration Standard for Commercial Telecommunications Infrastructure (ANSI/TIA/EIA-606)

D. Underwriters Laboratories (UL)
   1. UL 969 (1995: R 2001) Marking and Labeling Systems

1.3 UALITY ASSURANCE

A. Identification and administration work specified herein shall comply with the applicable requirements of:
   1. ANSI/TIA/EIA-606-A Administration Standards.
   2. ANSI/TIA/EIA-569B Pathway and Spaces
   3. ANSI/TIA/EIA-568B Telecommunications Cabling Standard
   4. BICSI Telecommunications Distribution Methods Manual
   5. UL 969 (1995; R 2001) Marking and Labeling Systems.

1.4 SUBMITTALS

A. Conform with the requirements of Section 01300 – Administrative Requirements and Section 17010 – Common Work Results for Communications.

1.5 DELI ERY, STORAGE, AND HANDLING

A. Procedures: In accordance with Section 01600 – Product Requirements.

1.6 SE UENCING

A. Not Used.

PART 2 PRODUCTS

2.1 COMMUNICATIONS CABLING LABELS, INTERIOR

A. Shall meet the legibility, defacement, exposure, and adhesion requirements of UL 969.

B. Shall be preprinted or computer printed type. Handwritten labels are not acceptable.

C. Provide vinyl substrate with a white printing area and black print. If cable jackets are white, provide cable label with printing area that is any other color than white, preferably orange or yellow – so that the labels are easily distinguishable.

D. Shall be flexible vinyl or other substrates to apply easy and flex as cables are bent.

E. Shall use aggressive adhesives that stay attached even to the most difficult to adhere to jacketing.

F. Manufacturers:

1. Cable Type – Silver Satin
   a. Brady TLS2200 labels – PTL-31-427
   b. Brady laser printable labels – LAT-18-361, LAT-53-361
   c. Or equal.
2. Cable Type – 4 pair UTP
   a. Brady TLS2200 labels – PTL-31-427
   b. Brady laser printable labels – LAT-18-361, LAT-53-361
   c. Or equal.
3. Cable Type – 4 Pair STP
   a. Brady TLS2200 labels – PTL-21-427
   b. Brady laser printable labels – LAT-19-361
   c. Or equal.
4. Cable Type – 25 pair copper
   a. Brady TLS2200 labels – PTL-21-427
   b. Brady laser printable labels – LAT-19-361
   c. Or equal.
5. Cable Type – 50 pair copper
   a. Brady TLS200 labels – PTL-33-427
   b. Or equal.
6. Cable Type – 100 pair copper
   a. Brady TLS2200 labels – PTL-34-427
   b. Or equal.
7. Cable Type – 6-12 strand fiber
   a. Brady TLS2200 labels – PTL-21-427
   b. Or equal.
8. Cable Type – RG-6 Coax
   a. Brady TLS2200 labels – PTL-31-427, PTL-32-427
   b. Brady laser printable labels – LAT-18-361, LAT-53-361
   c. Or equal.
9. Cable Type – RG-59 Coax
   a. Brady TLS2200 labels – PTL-31-427, PTL-32-427
   b. Brady laser printable labels – LAT-18-361, LAT-53-361

10. Cable Bundles
    a. Brady TLS2200 labels – PTL-12-109
    b. Or equal.

2.2 COMMUNICATIONS CABLE LABELS, OUTSIDE PLANT

A. Cable Tags in Manholes, Handholes, and aults
   1. Provide tags for communications cable or wire located in manholes, handholes, and vaults.
      a. The tags shall be polyethylene.
      b. The tags shall be machine printed – handwritten tags are not acceptable.
   2. Polyethylene Cable Tags
      a. Provide tags of polyethylene that have an average tensile strength of 3250 pounds per square inch; and that are .08 inch thick (minimum), non-corrosive, non-conductive, resistive to acids, alkalis, organic solvents, and salt water; and distortion resistant to 170 degrees F.
      b. Provide .05 inch (minimum) thick black polyethylene tag holder.
      c. Provide a one-piece nylon, self-locking tie at each end of the cable tag.
      d. Ties shall have a minimum loop tensile strength of 175 pounds. The cable tags shall have black block letters, numbers, and symbols one inch high on a yellow background.
      e. Letters, numbers, and symbols shall not fall off or change positions regardless of the cable tag s orientation.
   3. Manufacturers:
      a. Brady
      b. Or equal.

2.3 CLOSET HARDWARE LABELS

A. Shall meet the legibility, defacement, exposure, and adhesion requirements of UL 969.
B. Shall be preprinted or computer printed type. Handwritten labels are not acceptable.
C. Where insert type labels are used provide clear plastic cover over label.
D. Manufacturer:
   1. Copper Patch Panels
      a. 6 port group
         i. Ortronics OR-70700408
         ii. Or equal.
      b. Patch Panel Name Label
         i. Brady
         ii. Or equal.

2.4 GROUNDING AND BONDING, PATHWAY, AND SPACE LABELS

A. Shall meet the legibility, defacement, exposure and adhesion requirements of UL 969.
B. Shall be preprinted or computer printed type. Handwritten labels are not acceptable.
C. Manufacturers:

1. Brady Corporation
   a. TLS2200 labels
      i. PTL-20-422, Size 2.0 x 1.0
      ii. PTL-22-422, Size 3.0 x 1.0
      iii. PTL-37-422, Size 3.0 x 1.9
      iv. PTL-23-422, Size 4.0 x 1.0
      v. PTL-38-422, Size 4.0 x 1.0
   b. Laser printable labels
      i. LAT-13-747, Size 1.875 x 0.833
      ii. LAT-24-747, Size 1.75 x 1.0
      iii. LAT-32-747, Size 3.0 x 0.9
      iv. LAT-33-747, Size 2.0 x 1.437
      v. LAT-34-747, Size 3.0 x 1.437
   c. Continuous tape for TLS2200
      i. PTL-8-422, Size 0.5 , white polyester
      ii. PTL-8-430, Size 0.5 , clear polyester
      iii. PTL-8-439, Size 0.5 , white vinyl
      iv. PTL-42-439, Size 1.0 , white vinyl
      v. PTL-43-439, Size 1.9 , white vinyl
2. Or equal.

2.5 WORKSTATION LABELS

A. Shall meet the legibility, defacement, exposure and adhesion requirements of UL 969.
B. Shall be preprinted or computer printed type. Handwritten labels are not acceptable.
C. Where insert type labels are used provide clear plastic cover over label.
D. Manufacturers:
   1. Ortronics OR-70400411
   2. Or equal.

2.6 NAMEPLATES

A. Field Fabricated Nameplates
   1. Features/Function/Construction
      a. Provide laminated plastic nameplates for each equipment enclosure, relay, switch, and device; as specified or as indicated on the drawings.
      b. Comply with ASTM D 709.
      c. Each nameplate inscription shall identify the function and, when applicable, the position.
      d. Nameplates shall be melamine plastic, 0.125 inch thick, white with black center core.
      e. Surface shall be matte finish.
      f. Corners shall be square.
      g. Accurately align lettering and engrave into the core.
      h. Minimum size of nameplates shall be 1 x 2.5 .
      i. Lettering shall be a minimum of 0.25 inch high normal block style.

PART 3 EXECUTION

3.1 GENERAL

A. Apply labeling to clean surfaces free of oil, dust, solvents, or loose material.
B. Apply after Project painting in area of application is complete.
C. Apply to locations where labeling will not be damaged, covered over, or in the way of the infrastructure or system.
D. Apply labeling right side up, parallel to major edges of surfaces to which it is applied. When no line is evident, apply parallel to the floor line. Correct conditions of labeling applied out of true.
E. Protect installed labeling from damage.
F. Replace labeling that is defaced, illegible or peeling off the surface to which it is applied.

3.2 IDENTIFICATION LABELING

A. The Owner will provide the Contractor copies of the Contract Drawings showing station outlets with Owner assigned data & voice jack ID numbers. Label all installed work according to this master set.
B. Workstation faceplates
   1. Workstation faceplates shall be labeled according to the format *fs-n*, where:

      f numeric character(s) identifying the floor of the building occupied by the BDF

      s alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

      n three numeric characters designating the port on a patch panel on which a four-pair horizontal cable is terminated in the BDF

      E: Faceplate with cables terminating on the 6th ports of each patch panel in the second BDF on the first floor is identified as:

      1B-006

   2. The cover plate areas directly above and beneath the jacks are the labeling areas. In the top area, using the specified means, label the faceplate number assigned on the contract documents.
C. Pathways
   1. Pathways shall be marked at each endpoint and at all intermediate pull or junction boxes. In the case of partitioned pathways (i.e. innerduct) each partition shall have a unique identifier.
   2. Use adhesive type labels as specified in the Products portion of this section.
D. Labels shall be affixed at the entry to all telecommunications rooms and spaces (including entrance facilities, communication equipment rooms, communication equipment spaces and work areas).

1. Use adhesive type labels for all communications space labeling as specified in the Products portion of this section.
2. Affix labels to entrance doors – coordinate location with Owner s Representative.

E. Cables

1. Horizontal, Building Backbone, and Campus Backbone cables shall be marked within 12 of each endpoint or to innerduct in which the cable is installed.
2. Except where installed in innderduct or conduit, all backbone fiber optic cable shall have affixed to the outer jacket, labels of a bright color that contain at least the legend FIBER OPTIC CABLE. These labels must be affixed at intervals no greater than 10 ft.
3. Within every manhole, vault, or pullbox and within 4 ft of the entrance into a building every backbone cable s assigned identifier shall be affixed to either the cable s outer jacket or to an innerduct in which the cable is installed.
4. Any cable installed in conduit shall be labeled at all intermediate pull or junction boxes.
5. Use adhesive type labels as specified in the Products portion of this section.
6. Affix labels to cables – marking cables is not permitted.
7. Where cable is fully encased in innerduct, label the outside of the innerduct with the cable label and, where the contents are fiber optic cabling, the FIBER OPTIC CABLE label.
8. Horizontal cables shall be labeled according to the format fs-an, where:

   f numeric character(s) identifying the floor of the building occupied by the BDF

   s alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

   a one or two alpha characters uniquely identifying a single patch panel or a group of patch panels with sequentially numbered ports

   n three numeric characters designating the port on a patch panel on which a four-pair horizontal cable is terminated in the BDF

   E: 9th cable terminating on the first patch panel in the 3rd BDF on the 8th floor is identified as:

   8C-A009

9. A unique building backbone pair or optical fiber identifier shall be used to identify each single copper pair or each single optical fiber in a backbone cable between two BDFs in one building, and shall have a format fs_1/fs_2-*n.d*, where:

   fs_1/fs_2-*n* a building backbone cable identifier

d two to four numeric characters identifying a single copper pair or a single optical fiber

E: Building backbone fiber connecting BDFs 1A and 2A within a building

Cable 1, Pair 1 1A/2A-1.1,2
Cable 1, Pair 2 1A/2A-1.3,4
Cable 1, Pair 3 1A/2A-1.5,6

10. A unique campus backbone pair or optical fiber identifier shall be assigned to each pair or optical fiber in a backbone cable connecting BDFs in different buildings, and it shall have the format b_1-fs_1 / b_2-fs_2 -n.d, where:

b_1-fs_1 / b_2-fs_2 -n campus backbone cable identifier
d two to four numeric characters identifying a single copper pair or a single optical fiber

E: Campus backbone fiber Cables 1 and 2 connecting Building SLO101, BDF 1A, and Building SLO108, BDF 1B

Cable 1, Pair 1 SL0101-1A / SL0108-1B -1.1,2
Cable 1, Pair 2 SL0101-1A / SL0108-1B -1.3,4

Cable 2, Pair 1 SL0101-1A / SL0108-1B -2.1,2
Cable 2, Pair 2 SL0101-1A / SL0108-1B -2.3,4

F. Patch Panels
1. Fiber patch panels shall be marked using adhesive labels indicating the identifiers of all fibers installed to them.
2. If not shown on the contract documents, Owner s Representative will provide specific fiber ID information.
3. Category rated patch panels shall be labeled according to the format fs-a, where:

f numeric character(s) identifying the floor of the building occupied by the BDF

s alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

a one or two alpha characters uniquely identifying a single patch panel or a group of patch panels with sequentially numbered ports

E: First patch panel in the first BDF of the first floor is identified as:

1A-A

G. 66 Blocks

1. Each cable termination position on 66 blocks shall be labeled with number designators.
   a. All backbone copper cable termination blocks shall be labeled with both the pair count of every 5th pair and the cable s assigned identifier.

H. Grounding and Bonding

1. The Telecommunications Main Grounding Busbar (TMGB) shall be labeled as such with an adhesive type label affixed reading TMGB.
2. The Telecommunications Grounding Busbar (TGB) within a BDF shall be labeled as such with an adhesive type label affixed which follows the format TGB-*fs*, where:

   TGB Telecommunications Grounding Busbar

   f numeric character(s) identifying the floor of the building occupied by the BDF

   s alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

3. The conductor connecting the TMGB to the building ground shall be labeled at each end with an adhesive label affixed in a visible location as close as practicable to the bonding point at each end of the conductor. The label shall follow the format BC-TMGB, where:

   BC Bonding Conductor

   TMGB Telecommunications Main Grounding Busbar

   f numeric character(s) identifying the floor of the building occupied by the BDF

   s alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

4. The conductor connecting the TGB within a BDF to the building ground shall be labeled at each end with an adhesive label affixed in a visible location as close as practicable to the bonding point at each end

of the conductor. The label shall follow the format BC-TGB-*fs*, where:

BC Bonding Conductor

TGB Telecommunications Grounding Busbar

f numeric character(s) identifying the floor of the building occupied by the BDF

s alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

I. Firestops

1. Each firestop shall be labeled at each location where firestopping is installed, on each side of the penetrated fire barrier, within 12 inches of the firestopping material.
2. Firestops shall be labeled according to the format FS-fn, where:

FS Firestop

f numeric character(s) identifying the floor of the building occupied by the BDF

n = three numeric characters designating firestop sequential number.

END OF SECTION

SECTION 17100
STRUCTURED CABLING, BASIC MATERIALS METHODS

PART 1 GENERAL

1.1 SCOPE OF WORK

A. This Section defines commons means and methods for the work of the following Sections:
   1. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures.
   2. Section 17119 - Communications Termination Blocks and Patch Panels.
   3. Section 17123 - Communications Cable Management.
   4. Section 17150 - Communications Horizontal Cabling.

B. Related work specified in other Sections.
   1. Section 16080 - Electrical Commissioning.
   2. Section 16261 - Static Uninterruptible Power Supply.
   3. Section 16620 - Fire Alarm System.
   4. Section 17054 - EMCS - Communications Devices.

1.2 RELATED DOCUMENTS

A. Section 17010 - Common Work Results for Communications applies to the work of this Section.

1.3 REERENCES

A. Usage: In accordance with Section 01110 - Summary of Work.

B. In addition to the requirements of Section 17010 - Common Work Results for Communications, conform to the applicable portions of the following standards agencies:
   1. American Society for Testing and Materials (ASTM).
      a. ASTM A228/A228M-02 Steel Wire, Music Spring uality.
   2. Bellcore.
      a. TR-NWT-000253Intermediate Reach, 1,OC3.
   3. Telecommunications Industry Association/Electronic Industries Association (TIA/EIA)Telecommunications Industry Association/Electronic Industries Association (TIA/EIA).
      a. TIA/EIA-455-B Standard Test Procedure for Fiber Optic Fibers, Cables, Transducers, Sensors, Connecting and Terminating Devices, and other Fiber Optic Components (ANSI/TIA/EIA-455-B-98) Oct. 1998.
      b. TIA/EIA-455-1-BFOTPl - Cable Flexing for Fiber Optic Interconnecting Devices (ANSI/TIA/EIA-455-1B-98) Oct. 1998.
      c. TIA/EIA-455-2-CFOTP2 - Impact Test Measurements for Fiber Optic Devices (ANSI/TIA/EIA0455-2C-98) Jul. 1998.
      d. TIA/EIA-455-3-AFOTP3 - Procedure to Measure Temperature Cycling Effects on Optical Fibers, Optical Cable, and Other Passive Fiber Optic Components (May 1989).

e. TIA/EIA-455-5-CFOTP5 - Humidity Test Procedure for Fiber Optic Components (ANSI/TIA/EIA-455-5C-2002).
f. TIA/EIA-455-7FOTP7 - Numerical Aperture of Step-Index Multimode Optical Fibers by Output Far-Field Radiation Pattern Measurement (ANSI/TIA/EIA-455-7-92) Dec. 1992.
g. TIA/EIA-455-11-BFOTP11 - ibration Test Procedure for Fiber Optic Components and Cables (ANSI/TIA/EIA-455-11B-94) Jut. 1994.
h. TIA/EIA-455-13-AFOTP13 - isual and Mechanical Inspection of Fiber Optic Components, Devices, and Assemblies (ANSI/TIA/EIA-455-13A-02).
i. TIA/EIA-455-20-BFOTP20 - IEC60793-1-26 Optical Fibers - 1-46: Measurement Methods and Test Procedures - Monitoring of Changes in Optical Transmittance (ANSI/TIA/EIA-455-20-B-2004).
j. EIA TIA-455-21-A(2) FOTP-21 (r2002) - Mating Durability of Fiber Optic Interconnecting Devices.
k. TIA/EIA-455-25-CFOTP25 - Impact Testing of Optical Fiber Cables and Cable Assemblies (ANSI/TIA/EIA-455-25C-2002).
l. TIA/EIA-455-31-CFOTP31 - Proof Testing Optical Fibers by Tension (ANSI/TIA/EIA-455-31C-95) (R04).
m. TIA-455-33BFOTP33 -Optical Fiber Cable Tensile Loading and Bending Test 2005.
n. TIA/EIA-455-34-AFOTP34 - Interconnection Device Insertion Loss Test (ANSI/TIA/EIA-455-34A-99).
o. TIA/EIA-455-37-AFOTP37 - Low or High Temperature Bend Test for Fiber Optic Cable (ANSI/TIA/EIA-455-37A-93) (R-2002).
p. TIA/EIA-455-38FOTP38 - Measurement of Fiber Strain in Cables Under Tensile Load (ANSI/TIA/EIA-455-38-95) Nov. 1995.
q. TIA/EIA-455-39-BFOTP39 - Fiber Optic Cable Water Wicking Test (ANSI/TIA/EIA-45 5- 39B-03).
r. TIA/EIA-455-41-AFOTP41 - Compressive Loading Resistance of Fiber Optic Cables (ANSI/TIA/EIA-455-41A-01).
s. TIA/EIA-455-42-AFOTP42 - Optical Crosstalk in Fiber Optic Components (ANSI/TIA/EIA-455-42-A-1989) (R2001).
t. TIA/EIA-455-43-AFOTP43 - Output Near-Field Radiation Pattern Measurement of Optical Waveguide Fibers (ANSI/TIA/EIA-455-43A-99) Oct. 1999).
u. TIA/EIA-455-54-BFOTP54 - Mode Scrambler Requirements for Overfilled Launching Conditions to Multimode Fibers (ANSI/TIA/EIA-455-54B-98) (R2001).
v. TIA/EIA-455-56-BFOTP56 -Test Method for Evaluating Fungus Resistance of Optical Fiber and Cable (ANSI/TIA/EIA-455-56B-95) (R2004).

w. TIA/EIA-455-57-BFOTP57 - Preparation and Examination of Optical Fiber Endface for Testing Purposes (ANSI/TIA/EIA-455-57B-96) (R2000).
x. TIA/EIA-455-64FOTP64 - Procedure for Measuring Radiation-Induced Attenuation in Optical Fibers and Optical Cables (ANSI/TIA/EIA-455-64-97) (R2002).
y. TIA/EIA-455-67AFOTP67 - IEC 60793-1-51 Optical Fibers Part 1-51: Measurement Methods and Test Procedures - Dry Heat (ANSI/TIA-455-67 -A-2003).
z. TIA/EIA-455-72FOTP72 - Procedure for Measuring Temperature and Humidity Cycling Aging Effects on Optical Characteristics of Optical Fibers (ANSI/TIA/EIA-455-72-97) (R2001).
aa. TIA/EIA-455-73FOTP73 - Procedure for Measuring Temperature and Humidity Cycling Aging Effects on Mechanical Characteristics of Optical Fibers. (ANSI/TIA/EIA-455-73-97) (R2001).
ab. TIA/EIA-455-74AFOTP74 - IEC 60793-1-53 Optical Fibers Part 1-53: Measurement Methods and Test Procedures - Water Immersion.
ac. TIA/EIA-455-78-BFOTP-78 - IEC 60793-1-40 Optical Fibers Part 140: Measurement Methods and Text Procedures – Attenuation.
ad. TIA/EIA-455-80-CFOTP80 - IEC 60793-1-53 Optical Fibers Part 1-44: Measurement Methods and Test Procedures - Cut-off.
ae. TIA/EIA-455-84-BFOTP84 - Jacket Self-Adhesion (Blocking) Test for Fiber Optic Cable (ANSI/TIA/EIA-455-84B-98) (R 2003).
af. TIA/EIA-455-85-AFOTP85 - Fiber Optic Cable Twist Test (ANSI/TIA/EIA-455-85A-92) (R99) May. 1999.
ag. TIA/EIA-455-86FOTP86 - Fiber Optic Cable Jacket Shrinkage (ANSI/TIA/EIA-455-86-83) (R 90) (R99) May. 1999.
ah. TIA/EIA-455-87-BFOTP87 - Fiber Optic Cable Knot Test (ANSI/TIA/EIA-455-87B-93) (R99) May. 1999.
ai. TIA/EIA-455-88FOTP88 - Fiber Optic Cable Bend Test Jun. 2001.
aj. TIA/EIA-455-89-BFOTP89 - Optical Fiber Cable Jacket Elongation and Tensile Strength (ANSI/TIA/EIA-455-89B-98) (R 2003).
ak. TIA/EIA-455-91FOTP9l - Fiber Optic Cable Twist-Bend Test (ANSI/TIA/EIA-455-9l-86) (R 2003).
al. TIA/EIA-455-95-AFOTP95 - Absolute Optical Power Test for Optical Fibers and Cables (ANSI/TIA/EIA-455-95-A-2000) Apr. 2000.
am. TIA/EIA-455-l 00-AFOTP100 - Gas Leakage Test for Gas-Blocked Fiber Optic Cables (ANSI/TIA/EIA-455-l00A-89) (R99) May. 1999.
an. TIA/EIA-455-l04-AFOTP104 - Fiber Optic Cable Cyclic Flexing Test (ANSI/TIA/EIA-455-l04A-93)(R2000) Jul. 2000.
ao. TIA/EIA-455-1 07-AFOTP 1 07 - Determination of Component Reflectance or Link/System Return Loss Using a Loss Test Set (ANSI/TIA/EIA-455-107A-99) Feb. 1999.

ap. TIA/EIA-455-111FOTP111 - Procedure for the Measurement of Optical Fiber Curl (ANSI/TIA/EIA-455-111-2000) Jul. 2000.

aq. TIA/EIA-455-113FOTP113 - Polarization-Mode Dispersion Measurement of Single-Mode Optical Fibers by the Fixed Analyzer Method (ANSI/TIA/EIA-455-113-96) (R 2001).

ar. TIA/EIA-455-122AFOTP122 - Polarization-Mode Dispersion Measurement for Single-Mode Optical Fibers by Stokes Parameter Evaluation (ANSI/TIA/-455-122-A-02).

as. TIA/EIA-455-123FOTP123 - Measurement of Optical Fiber Ribbon Dimensions (ANSI/TIA/EIA-455-123-2000) Jun. 2000.

at. TIA/EIA-455-124AFOTP124 - Polarization-Mode Dispersion Measurement for Single-Mode Optical Fibers by Interferometry (ANSI/TIA/EIA-455-124-A-04).

au. TIA/EIA-455-126FOTP126 - Spectral Characterization of LEDs (ANSI/TIA/EIA-455-126-2000) Feb. 2000.

av. TIA/EIA-455-128FOTP128 - Procedures for Determining Threshold Current of Semiconductor Lasers (ANSI/TIA/EIA-455-128-96) (R 2003).

aw. TIA/EIA-455-129FOTP129 - Procedures for Applying Human Body Model Electrostatic Discharge Stress to Package Optoelectronic Components (ANSI/TIA/EIA-455-129-96) (R 2003).

ax. TIA/EIA -4 5 5-131 FOTP 131 - Measurement of Optical Fiber Ribbon Residual Twist (ANSI/TIA/EIA-455-131-97) (R2000) Oct. 2000.

ay. TIA/EIA-455-132-AFOTP132 - Measurement of the Effective Area of Single-Mode Optical Fiber (ANSI/TIA/EIA-455-132-2001) Jun. 2001.

az. TIA/EIA-455-133AFOTP133 IEC-60793-1-22 Optical Fibers - Part 1-22: Measurement Methods and Test Procedures - Length (ANSI/TIA-455-133-A-03).

ba. TIA/EIA-455-134FOTP134 - Measurement of Connector Ferrule Hole Inside Diameter (ANSI/TIA/EIA-455-134-96) (R 2002).

bb. TIA/EIA-455-135FOTP135 - Measurement of Connector Ferrule Inside and Outside Diameter Circular Runout (ANSI/TIA/EIA-455-135-96) (R 2002).

bc. TIA/EIA-455-141FOTP141 - Twist Test for Optical Fiber Ribbons (ANSIITIA/EIA-455-141-1999) Oct. 1999.

bd. TIA/EIA-455-157FOTP157 - Measurement of Polarization Dependent (PDL) of Single-mode Fiber Optic Components (ANSI/TIA/EIA-455-157-2000) May. 2000.

be. TIA/EIA-455-158FOTP158 - Measurement of Breakaway Frictional Force in Fiber Optic Connector Alignment Sleeves (ANSI/TIA/EIA-455-158-97) (R 2001).

bf. TIA/EIA-455-160AFOTPI60 - IEC 60793-1-50 Optical Fibers - Part 1-50: Measurement Methods and Test Procedures - Damp Heat (Steady State) (ANSI/TIA-455-160-A-03).

bg. TIA/EIA-455-162-AFOTPI62 - Fiber Optic Cable Temperature-Humidity Cycling (ANSIITIAIEIA-455-162A-99) Aug. 1999.

bh. TIA/EIA-455-175-BFOTPI75 - IEC 60793-1-42 Optical Fibers Part 1-42: Measurement Methods and Test Procedures - Chromatic Dispersion (ANSI/TIA-455-175-B-03).

bi. TIA/EIA-455-176AFOTPI76 - IEC 60793-1-20 Optical Fibers Part 1-20: Measurement Methods and Test Procedures - Fiber Geometry (ANSI/TIA-455-176-A-03).

bj. TIA/EIA-455-177-BFOTPI77 - IEC 60793-1-43 Optical Fibers Part 1-43: Measurement Methods and Test Procedures - Numerical Aperture (ANSI/TIA-455-177-B-03).

bk. TIA/EIA-455-178-BFOTPI78 - IEC 60793-1-32 Optical Fibers Part 1-32: Measurement Methods and Test Procedures - Coating Stripability (ANSI/TIA-455-178-B-03).

bl. TIA/EIA-455-180-AFOTPI80 - Measurement of the Optical Transfer Coefficients of a Passive Branching Device (Coupler) (ANSI/TIA/EIA-455-180-A-99) Dec. 1999.

bm. TIA/EIA-455-181FOTPI81 - Lightning Damage Susceptibility Test for Fiber Optic Cables with Metallic Components (ANSI/TIA/EIA - 455-181-92) (2001) Jul. 2001.

bn. TIA/EIA-455-183FOTPI83 - Hydrogen Effects on Optical Fiber Cable (ANSI/TIA/EIA-455-183-2000) Jul. 2000.

bo. TIA/EIA-455-184FOTPI84 - Coupling Proof Overload Test for Fiber Optic Interconnecting Devices (ANSI/TIA/EIA-455-184-91) (R95) (R99) Oct. 1999.

bp. TIA/EIA-455-185FOTPI85 - Strength of Coupling Mechanism for Fiber Optic Interconnecting Devices (ANSI/TIA/EIA-455-185-91) (R95) (R99) Oct. 1999.

bq. TIA/EIA-455-186FOTPI86 - Gauge Retention Force Measurement for Fiber Optic Components (ANSI/TIA/EIA-455-186-91) (R 2004).

br. TIA/EIA-455-187FOTPI87 - Engagement and Separation Force Measurement of Fiber Optic Connector Sets (ANSI/TIA/EIA-455-187-91) (R 2004).

bs. TIA/EIA-455-191-BFOTPI91 - IEC 60793-1-45 Optical Fibers Part 1-45: Measurement Methods and Test Procedures - Mode Field Diameter (ANSI/TIA-455-191-B-2003).

bt. TIAIEIA-455-192FOTPI92 - H-Parameter Test Method for Polarization- Maintaining Optical Fiber (ANSIfTIAIEIA-455-192-99) May. 1999.

bu. TIA/EIA-455-193FOTPI93 - Polarization Crosstalk Method for Polarization-Maintaining Optical Fiber and Components (ANSI/TIA/EIA-455-193-99) May. 1999.

bv. TIA/EIA-455-194FOTPI94 - Measurement of Fiber Pushback in Optical Connectors (ANSI/TIA/EIA-455-194-2000) Jan. 2000.

bw. TIA/EIA/455-195AFOTPI95 - IEC 60793-1-21 Optical Fibers - Part 1-21: Measurement Methods and test Procedures - Coating Geometry (ANSI/TIA-455-195-A-2003).

bx. TIA/EIA-455-197rOTPI97 - Differential Group Delay Measurement of Single-mode Components and Devices by the Differential Phase Shift Method (ANSI/TIA/EIA-455-197-2000) Jul. 2000.

by. TIA/EIA-455-201FOTP201 - Return Loss of Commercial Polarization - Maintaining Fiber or Polarizing Fiber Pigtailed Devices and Cable Assemblies Aug. 2001.

bz. TIA/EIA-455-203FOTP203 - Launched Power Distribution Measurement Procedure for Graded-Index Multimode Fiber Transmitters (ANSI/TIA/EIA-455-203-2001) Jun. 2001.

ca. TIA/EIA-455-204FOTP204 - Measurement of Bandwidth on Multimode Fiber (ANSI/TIA/EIA-455-204-2000) Dec. 2000.

cb. TIA/EIA-4920000-B Generic Specification for Optical Waveguide Fibers (ANSI/TIA/EIA-4920000-B-97) (R2002).

cc. TIA/EIA-492AOOO-A Sectional Specification for Class Ia Multimode, Graded-Index Optical Waveguide Fibers (ANSI/TIA/EIA-492AOOO-A-97) (R 2002).

cd. TIA/EIA-492AAAA-A Detail Specification for 62.5-um Core Diameter/125-um Cladding Diameter Class Ia Graded-Index Multimode Optical Fibers (ANSI/TIA/EIA-492AAAA-A-98) (R 2002).

ce. TIA/EIA-492AAAB Detail Specification for 50-urn Core Diameter/125-um Cladding Diameter Class Ia Graded-Index Multimode Optical Fibers (ANSI/TIA/EIA-492AAAB-98) (R 2002).

cf. TIA/EIA-492COOO Sectional Specification for Class I a DispersionUnshifted Single-Mode Optical Fibers (ANSI/TIA/EIA-492COOO-98) (R 2002).

cg. TIA/EIA-492CAAA Detail Specification for Class I a Dispersion-Unshifted Single-Mode Optical Fibers (ANSI/TIA/EIA-492CAAA-98) May 1998 (R 2002).

ch. TIA/EIA-492CAAB Detail Specification for Class I a Dispersion-Unshifted Single-Mode Optical Fibers with Low Water Peak (ANSI/TIA/EIA-492CAAB-2000) Sep.2000.

ci. TIA/EIA-492EOOO Sectional Specification for Class I d NonzeroDispersion Single-Mode Optical Fibers for the 1550 nm Window (ANSI/TIA/EIA-492EOOO-96) (R 2002).

cj. EIA/TIA-526-7 OFSTP-7 - Optical Power Loss of Installed Single-Mode Fiber Cable Plant (2003).

ck. EIA/TIA-526-14A OFSTP-14 - Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant (1998) (R 2003).

cl. TIA-559 Single-Mode Fiber Optic System Transmission Design Mar. 1989 (R 2002).
cm. TIA/EIA-568-B.1 Commercial Building Telecommunications Cabling Standard - Part 1: General Requirements (ANSI/TIA/EIA-568-B.1-2001).
cn. TIA/EIA-568-B.l-1 Commercial Building Telecommunications Cabling Standard - Part 1: General Requirements - Addendum 1 - Minimum 4-Pair UTP and 4-Pair ScTP Patch Cable Bend Radius (ANSI/TIA/EIA-568-B.I-I-2001).
co. TIA/EIA-568-B.2 Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted Pair Cabling Components (ANSI/TIA/EIA-568-B.2-2001).
cp. TIA/EIA-568-B.3 Optical Fiber Cabling Components Standard (ANSI/TIA/EIA -568- B.3-2000).
cq. TIA-569-B Commercial Building Standard for Telecommunications Pathways and Spaces.
cr. EIA TIA/EIA-604-2-A-2003 FOCIS 2 Fiber Optic Connector Intermateability Standard, Type Fiber Jack Connector.
cs. EIA TIA/EIA-604-3A(2000) FOCIS 3 Fiber Optic Connector Intermateability Standard - Standard Type SC.
ct. EIA TIA/EIA-604-12(2000) FOCIS 12 Fiber Optic Connector Intermateability Standard Type MT-RJ.
cu. EIA TIA/EIA-606-A(2002) Administration Standard for the Telecommunications Infrastructure (ANSI/TIA/EIA-606).

4. Federal Communications Commission (FCC).
   a. The Code of Federal Regulations, Title 47, Telecommunications, Chapter 1 - FCC Part 68 (1982 issue or latest revision) (47 CFR 68).
5. Institute of Electrical and Electronic Engineers.
   a. IEEE 383-2003 Standard for ualifying Class IE Electric Cables and Field Splices for Nuclear Power Generating Stations.
   b. IEEE 100-00 The Authoritative Dictionary of IEEE Standards Terms.
6. Insulated Cable Engineers Association (ICEA).
   a. ICEA S-56-434 (1983, 5th Ed.) Polyolefin Insulated Communication Cables for Outdoor Use.
   b. ICEA S-83-596(2001) Fiber Optic Premises Distribution Cable.
   c. ICEA S-90-661(2002) Category 3,5 and 5e Individually Unshielded Twisted Pair Indoor Cables With or Without Overall Shield for use in General Purpose and LAN Communications Wiring Systems - Technical Requirements.
7. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA).
   a. NEMA WC 63.1(2000) Twisted Pair Premise oice and Data Communications Cables.
8. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).

a. NFPA 70 National Electrical Code.

9. Underwriters Laboratories, Inc. (UL).
   a. UL 444(2002; Bul. 2002, 2003) Communications Cables.
   b. UL 910(1998) Flame-Propagation and Smoke-Density alues for Electrical and Optical-Fiber Cables Used in Spaces Transporting Environmental Air.
   c. UL 1286(1999; R 2004) Office Furnishings.
   d. UL 1581 Reference Standard for Electrical Wires, Cables, and Flexible Cords. Oct. 2001.
   e. UL 1666(2000; R 2002) Flame Propagation Height of Electrical and Optical-Fiber Cables Installed ertically in Shafts.
   f. UL 1863(2000; R 2004) Communications Circuit Accessories.

1.4 DEFINITIONS

A. Unless otherwise specified or indicated, electrical and electronics terms used in this specification shall be as defined in:
   1. ANSI/TIA/EIA-568-B.l.
   2. ANSI/TIA/EIA-568-B.2,
   3. ANSI/TIA/EIA-568-B.3,
   4. ANSI/TIA/EIA-569-B,
   5. ANSI/TIA/EIA-606-A,
   6. IEEE Std 100 and
   7. this Section.

B. Campus Distributor (CD) - A distributor from which the campus backbone cabling emanates. (International expression for main cross-connect (MC).)

C. Building Distribution Facility (BDF) - A distributor in which the building backbone cables terminate and at which connections to the campus backbone cables may be made. (International expression for intermediate cross-connect (IC).)

D. Floor Distributor (FD) - A distributor used to connect horizontal cable and cabling subsystems or equipment. (International expression for horizontal cross-connect (HC).)

E. Telecommunications Room (TR) - An enclosed space for housing telecommunications equipment, cable, terminations, and cross-connects. The room is the recognized cross-connect between the backbone cable and the horizontal cabling.

F. Entrance Facility (EF) - An entrance to the building for both private and public network service cables (including antennae) including the entrance point at the building wall and continuing to the entrance room or space.

G. Equipment Room (ER) - A centralized space for telecommunications equipment that serves the occupants of a building. Equipment housed therein is considered distinct from a telecommunications room because of the nature of its complexity.

H. Open Cabling - Cabling that is not run in a raceway as defined by NFPA 70. This refers to cabling that is "open" to the space in which the cable has been installed and is therefore exposed to the environmental conditions associated with that space.

I. Open Office - A floor space division provided by furniture, movable partitions, or other means instead of by building walls.

J. Pathway - A physical infrastructure utilized for the placement and routing of telecommunications cable.

1.5 SUBMITTALS

A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.6 DELI ERY, STORAGE AND HANDLING

A. Comply with requirements of Section 01600 - Product Requirements, Section 17010 - Common Work Results for Communications Systems and the following:

B. Shipping Conditions:

1. All cable shall be shipped on reels or manufacturer supplied "handy boxes".
2. The diameter of the drum shall be at least 13 times the diameter of the cable.
3. The reels shall be substantial and so constructed as to prevent damage during shipment and handling.
4. Secure the outer end of the cable to the reel head so as to prevent the cable from becoming loose in transit.
5. Project the inner end of the cable into a slot in the side of the reel, or into a housing on the inner slot of the drum, in such a manner and with sufficient length to make it available for testing.
6. The inner end shall be fastened so as to prevent the cable from becoming loose during installation. End seals shall be applied to each of the cables to prevent moisture from entering the cable.

C. Storage:

1. Retain factory cable protection until installation. Supplement with heavy gauge plastic sheeting if factory protective membrane is pierced prior to installation. Tape ends and seams water and dust tight.
2. The reels with cable shall be suitable for outside storage conditions when the temperature ranges from minus 40 degrees C to plus 65 degrees C, with relative humidity from 0 to 100 percent.
3. Protect cable reels from physical damage from site construction vehicles or from settling into the soil.
4. Equipment, other than cable, to be delivered and placed in storage shall be stored with protection from the weather, humidity and temperature variation, dirt and dust, or other contaminants.

1.7 SE UENCING

A. Not Used.

1. PERFORMANCE STANDARDS

A. Telephone (oice) Copper Cabling Plant:

1. Suitable for direct connection to the Public Switched Network in accordance with rules set forth by FCC Part 68, California Public Utilities Commission, and other Authorities Having Jurisdiction.
2. Category 3 as defined in TIA/EIA-568-B.2 paragraph 4.4.

B. Horizontal (Station) Copper Cabling – Permanent Link.

Category 6, as defined in ANSI/TIA/EIA-568-B.2-1, Chapter 7 (*a n ans ss n n s*), with the test measurements performed in accordance with ANSI/TIA/EIA-568-B.2-1, Annex A (*a n f d as n d s*

n a) using a Level III field tester, as defined in ANSI/TIA/EIA-568-B.2-1, Annex B (*s ns n s n a*). Cabling shall meet or exceed the requirements stated therein.

C. Fiber Optic Cabling
   1. Optical Budget, any end to end link not to exceed the sum of the following:
      a. Optical fiber loss (attenuation).
      b. Splice loss.
      c. Connector loss.
   2. Optical fiber loss shall be the optical fiber specified cable performance, pro-rated for total link distance.
      a. Fiber Loss, Multimode, not to exceed:
         i. At 850 nanometers, 3.0 dB per Kilometer.
         ii. At 1300 nanometers, 1.0 dB per Kilometer.
      b. Fiber Loss, Single mode, Outside Plant Cable, not to exceed:
         i. At 1310 nanometers, 0.35 dB per Kilometer.
         ii. At 1550 nanometers, 0.25 dB per Kilometer.
      c. Fiber Loss, Single mode, Campus Backbone Cable, not to exceed:
         i. At 1310 nanometers, 0.4 dB per Kilometer.
         ii. At 1550 nanometers, 0.3 dB per Kilometer.
   3. Splice Loss.
      a. Multimode.
         i. 0.15 dB for each fusion splice.
      b. Single Mode.
         i. 0.06 dB for each fusion splice.
   4. Connector Loss
      a. Multimode.
         i. 0.75 dB for each mated pair of type SC Connector.
      b. Single Mode.
         i. 0.75 dB for each mated pair of type SC, Ultra Physical Contact Connector.
         ii. 0.30 dB for each mated pair of type SC, Angled Physical Contact Connector.

1. TESTING

A. GENERAL
   1. Test and report on each intermediate cabling segment separately, including station cabling, horizontal distribution (each segment, if multiple) and telecommunications room wiring.
   2. Test each end-to-end cable link.
   3. Submit machine-generated documentation and raw data of all test results on Contractor-provided, and Owner's Representative approved, forms; and in electronic format approved by the Owner's Representative.
   4. Provide machine-generated data on an appropriate disk media (CD-ROM CD-R format) to be transferred to the Owner's computers.

a. Where the machine-generated documentation requires use of a proprietary computer program to view the data, provide the Owner with 1 licensed copy of the software.

5. Provide registered testing software used for the actual tests to the Owner for review of test data.

B. Test Equipment:

1. Provide in conformance with the applicable requirements of 17010 Common Work Results for Communications.
2. Test systems using at least one (1) each of the following test measurement devices or their functional equivalents:
   a. Level III Category Category 6 Cable Tester – Agilent, Fluke, or equal.
   b. Outside Plant oice Cabling Plant tester - capable of detecting shorts, opens, reversals, mis-wiring and crosstwists. (Siemon STM-8, Fluke or equal).
   c. Tone Test Sets.
   d. Optical power meter (HP, Corning Cable Systems, Fluke or equal). Site portable communications systems (walkie-talkie, cell phone or similar).
   e. Site portable communications systems (walkie-talkie, cell phone or similar).
   f. Any other items of equipment or materials required to demonstrate conformance with the Contract Documents.

C. Station Wiring, General.

1. Test station wire only after all pairs of station wire in an work area have been terminated at both ends, and no work of this Section or other Sections may cause physical disturbance to the wiring.
2. Correct any and all transpositions found. Retest.
3. If any conductor in a station wire tests either open or short, then the entire station wire is to be removed, replaced, and re-tested.

D. Inside Category 6 Cabling.

1. Using the listed Category 6 cable test set, test 100 of cabling and submit report on the parameters specified for Category 6 cabling in this Section. Report whether tested link passes or fails the Category 6 standards in Part 2 of this Section.
2. Note exceptions to required Category 6 standards. Remedy and retest.

E. Telephone: Outside Plant, Inside Riser Wire:

1. General:
   a. A new cable shall be tested only after all wires within the cable have been terminated at both ends.
   b. For unshielded cable, "measurements to ground" means an electrical connection to the Telecommunications Ground Bus, building steel, electrical metallic conduit or a water pipe.
   c. The Contractor shall correct all defects possible.

d. If less than 100 of cable pairs pass testing, the cable shall be deemed unacceptable and shall be replaced. Contractor shall replace, terminate and test new cable at no additional cost to the Owner.

2. Test procedures:
   a. TEST #1 – Continuity:
      i. Meter set for 20 ohm full scale ohm reading. Each pair shall be shorted at one end and the loop resistance value read at the other.
      ii. The difference between the largest and the smallest resistance reading from each pair in the cable shall be no more than 10 percent of the largest reading.
   b. TEST #2 - Balance, Polarity and Conductor Transpositions:
      i. Upon passing Test #1, the tester at one end of cable shall ground tip side of each pair in turn. The tester at other end of cable reads resistance to building ground of same conductor.
   c. RE UIREMENT: Reading for each tip conductor in pair of approximately one-half the loop resistance value from Test #1.
3. Test Report:
   a. Submit Test Report. Documentation shall include loop resistance regarding any opens, shorts, transpositions found, as well as corrective action taken to correct any found opens, shorts, or transpositions.

F. Fiber Optic Cabling.
1. Perform fiber optic cable testing on all installed fiber optic cabling. Submit test results. Notify Owner's Representative in writing at least 48 hours in advance that fiber optic cable testing shall commence. Submit calibration certification for testing equipment to be used.
2. Submit test report no later than five (5) business days after the cables are tested.
3. Test and submit optical power loss test results on each fiber, in each cable, and in both directions under final installation conditions. Submit with the following information:
   a. Date of test.
   b. Name of test personnel.
   c. Fiber cable type and part number.
   d. Cable Length
   e. Fiber strand number, buffer tube color, and strand color.
   f. T location.
   g. R location.
   h. Optical Light Source manufacturer, model and serial number.
   i. Optical Power Meter manufacturer, model and serial number.
   j. Reference standard, with allowable values for cable attenuation, connector loss, and splice loss.
   k. Allowable loss for the link under test, calculated as the sum of cable attenuation plus connector loss plus splice loss.

l. T wavelength(s).
m. Attenuation in dB at the T wavelength(s).

4. Acceptance Tests.
   a. Power Meter Attenuation Test.
      i. Perform on all fiber cabling segments.
      ii. Method: Perform the following measured attenuation tests using the method B of ANSIlEIAffIA-526-14A for multimode strands and ANSIlEIA/TIA-526-7 for singlemode strands. Measure the attenuation of the fiber optic network inclusive of all splices and patch points called for on the Drawings.
      iii. Measure attenuation between all the coupling points (when applicable) using the insertion method.
      iv. Perform a reference measurement in dBm to determine the injection power level of the stabilized source. Reference cable shall have the same core diameter as strands under test. Connect the optical source directly to the optical power level meter using 2 reference cables and a coupler.
      v. Connect the optical source to the strand under test using I of the 2 reference cables attached to the strand's terminal coupler.
      vi. Connect the optical power level meter to the other end of the strand under test through its terminating coupler using the other reference cable.
      vii. Obtain the measured attenuation (in dB) by subtracting the reference level (dBm) from the received level (dBm).
         (1) Periodically during the acceptance tests, check and document the reference level.
      viii. Test each fiber link for overall attenuation from end-to-end in both directions.
      ix. Perform the attenuation acceptance test at the 850 nm wavelength for multi-mode and 1310 nm for single-mode.
   b. OTDR Distance and Attenuation Assessments.
      i. Perform acceptance testing of all reels of fiber optic cable prior to installation.
      ii. Perform in accordance with the requirements of:
         (1) ANSI/EIA/TIA-568-B.l.
         (2) ANSI/EIA/TIA-568- B.3.
         (3) TIA/EIA-455-59-A.
      iii. Test and submit strip charts and/or tracer recordings on all strands in each tube in every cable in one direction. Submit with the following information:
         (1) Date of test.
         (2) Name of test personnel.
         (3) Test wavelength.

(4) Pulse duration(s) and scale range(s).
(5) Index of refraction.
(6) Fiber cable type and part number.
(7) Fiber tube and/or fiber strand number.
(8) Direction of test.
(9) Overall distance.
(10) Attenuation in dB.

PART 2 PRODUCTS

2.1 COMMUNICATIONS CABLES AND RELATED

A. General:
1. Cabling shall be UL listed for the application and shall comply with EIA TIA/EIA-568-B.l, TIA/EIA-568-B.2, TIA/EIA-568-B.3 and NFPA 70.
2. Ship cable on reels and/or in boxes bearing manufacture date for UTP in accordance with ICEA S-90-661 and optical fiber cables in accordance with ICEA S-83-596 for all cable used on this project. Cabling manufactured more than 12 months prior to date of installation shall not be used.
3. Comply with applicable Code for insulation, jacket, marking and listing for applicable use.
   a. In plenum spaces, provide type CMP or OFNP cabling.
   b. In riser spaces, provide type CMR or OFNR cabling.
   c. Under outside plant cabling conditions, provide type CM or OFN cabling.

PART 3 EXECUTION

3.1 GENERAL

A. All system cabling and terminations be installed in accordance with the manufacturer's instructions and as shown.
B. All necessary interconnections, services, and adjustments required for a complete and operable system shall be provided. All installation work must be done in accordance with the safety requirements set forth in the general requirements of ANSI C2 and NFPA 70.
C. Coordinate insulation displacement (quick connect) terminal devices with wire size and type. Comply with manufacturer's recommendations. Make connections with automatic impact type tooling set to recommended force.
D. Tin terminated shield drain wires and insulate with heat shrinkable tubing.
E. Dress, lace or harness all wire and cable to prevent mechanical stress on electrical connections. No wire or cable shall be supported by a connection point. Provide service loops where harnesses of different classes cross, or where hinged panels are to be interconnected.
F. Correct unacceptable wiring conditions including but not limited to:
1. Deformed, brittle or cracked insulation.
2. Torn or worn cable jacket.

3. Excessively scored cable jackets.
4. Insulation shrunken or stripped further than 1/8" away from the actual point of connection within a connector, or on a punch block.
5. Ungrommeted, unbushed, or uninsulated wire or cable entries.
6. Deformation or improper radius of wire or cable.

3.2 SPLICING

A. All wire and cable shall be continuous and splice-free for the entire length of run between designated connections or terminations.
   1. At designated splices, maintain conductor color code across all splices.
      a. All shielded cables shall be insulated. Do not permit shields to contact conduit, raceway, boxes, panels or equipment enclosures.
      b. Within buildings, make splices only in designated terminal cabinets and/or on designated equipment backboards.

3.3 PULLING IN

A. erify that all raceway has been de-burred and properly joined, coupled, terminated, and bushed prior to installation of cables. erify that all raceway is clear of foreign matter and substances prior to installation of wire or cable.

B. Inspect all conduit bends to verify proper radius. Comply with Code for minimum permissible radius and maximum permissible deformation.

C. Apply a chemically inert lubricant to all wire and cable prior to pulling in conduit. Do not subject wire and cable to tension greater than that recommended by the manufacturer. Use multi-spool rollers where cable is pulled in place around bends. Do not pull reverse bends.

D. Provide a box loop for all wire and cable routed through junction boxes or distribution panels. Cable loops and bends shall not be bent at a radius greater than that recommended by the manufacturer.

3.4 SUPPORT

A. Secure all wire and cable run vertically for continuous distances greater than thirty (30) feet. Secure robust non-coaxial cables with screw-flange nylon cable ties or similar devices appropriate to weight of cable. For all other cables, provide symmetrical conforming nonmetallic bushings or woven cable grips appropriate to weight of cable.

B. Separation. Conform to the following table with respect to separation from power and radio frequency (RF) sources. Provide at least twice the listed separation at fluorescent light fixtures, ballasts and similar high intensity Electromagnetic Field sources, including but not limited to motors, transformers and copiers.

Separation of Telecommunications Cabling and Pathways from 480 or Lower Power Lines

Condition	Minimum Separation Distance		
	2k A	2-5k A	5k A
Unshielded power lines or electrical equipment in proximity to open or nonmetal pathways	5 in.	12 in.	24 in.
Unshielded power lines in proximity to a grounded metal conduit pathway	2.5 in.	6 in.	12 in.
Power lines enclosed in a grounded metal conduit (or equivalent shielding) in proximity to a grounded metal conduit pathway	N/A	3 in.	6 in.

C. Support: Provide support for all cabling. Conform to the restrictions of the National Electric Code and Section 17029.

END OF SECTION

SECTION 17116
COMMUNICATIONS CABINETS, RACKS, FRAMES AND ENCLOSURES

PART 1 GENERAL

1.1 SCOPE OF WORK
A. Communications racks and cabinets.
B. Communications Rack Mounted Power Protection and Power Strips.

1.2 RELATED WORK IN OTHER SECTIONS
A. Section 17026 - Grounding and Bonding for Communications Systems.
B. Section 17033 - Conduits and Backboxes for Communications Systems.
C. Section 17036 - Cable Trays for Communications Systems.
D. Section 17126 - Communications Rack Mounted Power Protection and Power Strips.
E. Section 17150 - Communications Horizontal Cabling.

1.3 REFERENCES
A. American National Standards Institute (ANSI).
   1. EIA-310-D (1992) Cabinets, Racks, Panels, and Associated Equipment (ANSI/EIA/310-D).
   2. ANSI-J-STD-607-A Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications (ANSIIJ-STD-607-A-2002).
B. International Conference of Building Officials (lCBO).
   1. AC156 ICBO ES Acceptance Criteria for Seismic ualification Testing of Nonstructural Components (Jul. 2004).
C. Telecordia Technologies.
   1. Network Equipment Building System (NEBS) GR-63-CORE (Seismic Zone 4).

1.4 SUBMITTALS
A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 DELI ERY, STORAGE AND HANDLING
A. Procedures: In accordance with Section 01600 - Product Requirements and Section 17100 - Structured Cabling, Basic Materials and Methods.

1.6 SE UENCING
A. Not used.

PART 2 PRODUCTS

2.1 GENERAL
A. Keys.
   1. Key all boxes, cabinets, enclosures, panels, controls, doors and related provided for similar usage within a system identically.

2.2 E UIPMENT ENCLOSURE SYSTEMS
A. General:

1. Provide enclosure systems including, but not limited to enclosures, cabinets, cases and related panels and accessories as specified herein. Provide size and quantity as shown on drawings or scheduled.
2. Provide color as shown on drawings. If no color is shown on drawings, submit manufacturer's standard color chips for selection.
3. Provide enclosure systems conforming to the UBC/CBC, latest edition, for seismic design.
4. Equipment Enclosures: Each rack provided with frame angles tapped 10-32, ANSI/EIA 310-D Universal Spaced.

B. Relay Rack
   1. Drawing Reference(s).
      a. R15.
      b. R15S.
   2. Construction.
      a. Two wide vertical side channels tapped with EIA mounting holes on both sides, 3 EIA channel construction.
      b. Full 19" wide EIA Frame fits standard equipment forms - assemblies with non-standard opening widths not permitted.
      c. Two (2) Base Angles.
      d. Two (2) Top angles.
      e. 7 ft Tall.
      f. 44 EIA Rack Units minimum.
      g. Horizontal and vertical cable management unless otherwise indicated on plans.
   3. Manufacturers:
      a. CPI 46353-703
      b. Or equal.

C. Equipment Rack, Zone 4, Front, Rear and Side Access.
   1. Drawing References: R22.
   2. Construction:
      a. Manufacturer tested Zone 4 assembly, rated for at least 900 pounds of uniformly distributed load.
      b. ertical Height (Min): 44RU.
      c. Depth: 36" minimum.
      d. No front or rear door.
      e. Fully Adjustable 19" Mounting Rails, DIN Slot on EIA spacing standard.
      f. Full height receptacle strip, at least two (2) circuits, 20A, unless otherwise noted, as specified in Section 17126.
      g. Provide each rack with the following accessory shelves:
         i. One (1) Exhaust Fan Panel, top or rear doors, at least 200 CFM.
      h. Gangable. Racks have been designed such that they are suitable for installation either as a single, standalone unit, or in a row of identical racks (gangable).

i. Single rack installation. Provide side panels at both sides.
ii. Multirack installation in a row. Bolt racks together using means provided by manufacturer. Omit side panels except at ends of row of racks - provide at ends of rows of racks.

3. Manufacturers. Provide manufacturer's accessories or 3rd party accessories as specified elsewhere in this Section for other specified elements. Coordinate selected shelves, fans and similar with rack submitted for finish and mounting means:
   a. Middle Atlantic/DataTel MRK4436PRO with MRK-Z4 Base angles, MW4 FT-FC top w/4 fans.
   b. Or equal.

2.3 RACK PANELS AND ACCESSORIES

A. Rack Mounting Screws:
   1. Screws 10-32; length as required for at least 1/4" excess when fully seated; oval head with black plastic non marring cup washer or equivalent ornamental head; nickel, cadmium or black plated; Phillips, Allen Hex, Square- Tip or Torx drive. Slotted screws are not acceptable.

PART 3 EXECUTION

3.1 MOUNTING

A. Unless otherwise noted, all floor supported equipment racks shall be bolted to the structure in accordance with the requirements of the CBC, the UBC and the contractors approved structural engineering submittal demonstrating the method to be used to conform to these requirements.
B. Rows of identical racks shall be bolted together, in addition to being bolted to the floor, and bonded to form a single electrical ground plane.
C. Wall mounted equipment racks and cabinets shall similarly be bolted to structural members in accordance with the requirements of the CBC, the UBC and the contractors approved structural engineering submittal demonstrating the method to be used to conform to these requirements.

3.2 E UIPMENT ENCLOSURE RACK AND E UIPMENT BACKBOARD FABRICATION

A. Combustible material, other than incidental trim of indicated equipment, is prohibited within equipment racks.
B. Provide permanent labels for all equipment and devices.
C. Floor racks to be bolted floor unless otherwise indicated.
D. Access shall not require demounting or de-energizing of equipment. Install access covers, hinged panels, or pull-out drawers to insure complete access to terminals and interior components.
E. Provide a permanent label on the front of each equipment rack including the rack designation, and the circuit breaker number and associated electrical distribution panel designation servicing same.
F. Where wiring of mixed types are called for on the plans, maintain separation of wiring classifications as specified in the individual sections of the Communications

Work. Separately dress, route and land microphone, audio line level and data cables and related on the right side of the equipment enclosure, as viewed from the rear; dress, route, and land loudspeaker level, data and control cables on the left side of the equipment enclosure, as viewed from the rear.

G. Provide vertical wire management of cabling within the rack independent of the adjustable EIA mounting rails. ertical wiring management provided by the contractor within the rack shall not prevent such rails from being moved as required by the Owner.

H. Dress and support cabling at a minimum of 24 inch on center.

I. Access shall not require demounting or de-energizing of equipment or cabling. Install access covers, hinged panels, or pull-out drawers to insure complete access to terminals and interior components.

J. Fasten removable covers containing any wired component with a continuous hinge along one side, with associated wiring secured and dressed to provide an adequate service loop. Provide an appropriate stop locks to hold all hinged panels and drawers in a serviceable position.

K. Provide permanent labels for all equipment and devices. Where possible, fasten such labels to the rack frame or to blank or vent panels which will remain in place when active equipment is removed for possible service.

L. At audio and video jack fields, provide service loop to permit removal of jack fields from rack sufficient to conveniently access all jack contacts for routine cleaning and maintenance. Organize the service loop and harness such that reasonable reconnection of jacks and jack normals is possible without cutting apart the harness.

M. Coordinate the design and execution of wire harnessing of multi-bay audio and video rack ensembles with conditions of delivery to installation locations at Project Site, and with the requirement herein for test of the completely wired system in the shop prior to delivery to the Project Site. Organize the wiring harnesses such that they will fold within one shippable unit without risk of damage, or provide polarized multi-pin connectors and related interconnect systems as specified elsewhere herein.

3.3 SIGNAL GROUNDING BONDING PROCEDURES

A. Comply with National Electrical Code and the California Electric Code. Bond equipment racks to ground in accordance with the California Electric Code and ANSI/EIA/TIA 607 and Section 17026.

B. Unless otherwise noted maintain a unipoint ground scheme.

C. Equipment enclosures shall not be permitted to touch each other unless bolted together and electrically bonded.

END OF SECTION

SECTION 1711
COMMUNICATIONS TERMINATION BLOCKS AND PATCH PANELS

PART 1 GENERAL

1.1 SCOPE OF WORK
A. This Section defines material standards for:
   1. Copper Termination Assemblies, including:
      a. Rack and cabinet mounted copper patch panels.
      b. Backboard, rack and cabinet mounted terminal blocks.
   2. Fiber Termination Assemblies, including:
      a. Fiber connectors.
      b. Rack and cabinet mounted fiber patch panels.
      c. Backboard mounted fiber terminal boxes.
   3. Hybrid Copper/Fiber Termination Assemblies.

1.2 RELATED WORK UNDER OTHER SECTIONS
A. Section 17010 – Common Work Results for Communications.
B. Section 17026 - Grounding and Bonding for Communications Systems.
C. Section 17100 - Structured Cabling, Basic Materials and Methods.
D. Section 17113 - Communications Entrance Protection.
E. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures.
F. Section 17123 - Communications Cable Management.
G. Section 17130 - Communications Interior Backbone Cabling.
H. Section 17140 - Communications Outside Plant Backbone Cabling.
I. Section 17150 – Communications Horizontal Cabling.

1.3 REFERENCES
A. ELECTRONIC INDUSTRIES ALLIANCE (EIA).
   1. EIA-310-D (1992) Cabinets, Racks, Panels, and Associated Equipment (ANSI/EIA/310- D).

1.4 SUBMITTALS
A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 DELI ERY, STORAGE AND HANDLING
A. Procedures: In accordance with Section 01600 - Product Requirements and Section 17100 - Structured Cabling, Basic Materials and Methods.

1.6 SE UENCING
A. Not used.

PART 2 PRODUCTS

2.1 COPPER CABLE TERMINATION DE ICES AND RELATED
A. Category 5e oice Termination Block.
   1. Drawing reference(s):
      a. 66TB6 6 pair

b. 66TB25 25 pair
c. 66TB50 50 pair
d. 66TB100 100 pair
e. 66TB300 300 pair
f. 66TB600 600 pair

2. General: Insulation displacement connector blocks consisting of oxygen free mechanical fastening system arranged in a flame-retardant molded plastic fastened to a mounting bracket.
3. Features/Functions:
   a. "66" type terminals.
4. Construction/Implementation.
   a. Provide complete with stand-off mounting bracket.
   b. Provide cable management D-rings at the bottom of and between each column of blocks.
5. Manufacturer:
   a. Siemon S66M1-50
   b. Or equal.

B. Category 5e oice Termination Block with Pre-wired RJ21 (50 Pin) connector.
1. Drawing reference(s):
   a. 66PWTB100 100 pair
   b. 66PWTB200 200 pair
   c. 66PWTB300 300 pair
   d. 66PWTB600 600 pair
2. Features/Functions:
   a. 66 type terminal block with pre-wired RJ21 connector for 25 pairs on each side of block.
   b. Meets or exceeds Category 5e performance.
3. Manufacturers:
   a. Siemon S66M2-5W
   b. Or equal.

C. Data and oice Icons
1. Icons shall be provided for all patch panel ports.
2. Manufacturer:
   a. Icons for Patch Panel A shall be ORANGE, Ortronics P/N OR-40323200 (package of 100) or equal.
   b. Icons for Patch Panel B shall be ORANGE, Ortronics P/N OR-40323200 (package of 100) or equal.
   c. Icons for Patch Panel C shall be ORANGE, Ortronics P/N OR-40323200 (package of 100) or equal.
   d. Icons for Patch Panel D shall be BLUE, Ortronics P/N OR-40326100 (package of 100) or equal.

D. Category 6 Data and oice Patch Panels, Rack Mounted.
1. This section applies to patch panels used to distribute BOTH data and voice connections. See paragraph 2.1.E for specifications for patch panels used to distribute voice only

2. Drawing Reference: C6PP, where refers to port count.
3. Functions/Features:
   a. Shall meet or exceed the current TIA/EIA 568-B.1, B.2 and proposed ISO/IEC 11801-B defined ohm copper cable channel specifications.
   b. 19" EIA rack mountable.
   c. 24 ports per EIA rack unit (1.75").
   d. Arranged in groups of six (6) ports on steel panel.
   e. Ports shall be factory numbered, 1 through 96, 1 through 48, and 1 through 24
   f. Jacks on front.
   g. Terminations on rear.
   h. Holder for port identifier designation strips on front.
   i. Integral cable management bar at rear.
4. Manufacturer:
   a. Ortronics Clarity Category 6 96-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD66U96.
   b. Ortronics Clarity Category 6 48-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD66U48.
   c. Ortronics Clarity Category 6 24-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD66U24.
   d. Or equal.

E. Category 5e oice Patch Panels, Rack Mounted.
1. This section applies to patch panels used to distribute voice connections ONLY. See paragraph 2.1.D for specifications for patch panels used to distribute data and voice connections.
2. Drawing Reference: C5ePP, where refers to port count.
3. Functions/Features:
   a. Shall meet or exceed the current TIA/EIA 568-B.1, B.2 and proposed ISO/IEC 11801-B defined ohm copper cable channel specifications.
   b. 19" EIA rack mountable.
   c. 24 ports per EIA rack unit (1.75").
   d. Arranged in groups of six (6) ports on steel panel.
   e. Ports shall be factory numbered, 1 through 96, 1 through 48, and 1 through 24
   f. Jacks on front.
   g. Terminations on rear.
   h. Holder for port identifier designation strips on front.
   i. Integral cable management bar at rear.
4. Manufacturer:
   a. Ortronics Clarity Category 5e 96-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD5E6U96.
   b. Ortronics Clarity Category 5e 48-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD5E6U48.

c. Ortronics Clarity Category 5e 24-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD5E6U24.
d. Or equal.

F. oice Termination Frames
1. All voice backbone termination blocks and stand-off brackets shall be mounted on an approved termination frame unless otherwise specified on the drawings.
a. Homaco 200-pair voice termination frame P/N 50M-201-R19 Wall/Rack Module.
b. Homaco 400-pair voice termination frame P/N 50M-201-D19 Wall/Rack Module.
c. Homaco 600-pair voice termination frames P/N 50M-201-T19 Wall/Rack Module.
d. Or equal.

2.2 FIBER CABLE TERMINATION DE ICES AND RELATED

A. Fiber Optic Connectors and Related:
1. General.
a. Connectors to comply with:
i. EIA/TIA-4750000-C.
ii. EIA/TIA-604-3A.
2. Connectors:
a. SC, unless otherwise noted or scheduled.
b. Connector performance per TIA/EIA – 568B.3 and the following:
i. Insertion Loss:
(1) Multimode:
a. Less than or equal to 0.75 dB per mated pair.
(2) Single mode, UPC
a. Less than or equal to 0.75 dB per mated pair.
(3) Single mode, APC
a. Less than or equal to 0.30 dB per mated pair.
ii. Return Loss:
(1) Single mode, Ultra Polish, greater than or equal to 55 dB.
(2) Single mode, Angled Physical Contact, greater than or equal to 65 dB.
iii. Manufacturer:
(1) Connector.
a. Berk-Tek/Nexans
b. Or equal.

B. Fiber Optic Pigtails, Fusion Splicing
1. Fiber optic terminations shall be performed using fusion spliced factory pigtails with SC connectors unless otherwise specified on the drawings.
2. Pigtails for fusion spliced terminations of 50/125 micron multimode fiber:

a. Manufacturer:
   i. 1-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626PF9FR-FZ002M or equal.
   ii. 6-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626SF4ZR-FZ002M or equal.
   iii. 12-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626TF4ZR-FZ002M or equal.

3. Pigtails for fusion spliced terminations of 8.3/125 micron singlemode fiber:
   a. Manufacturer:
      i. 1-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626PC9FR-RZ002M or equal.
      ii. 6-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626SC4ZR-RZ002M or equal.
      iii. 12-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626TC4ZR-RZ002M or equal.

C. Heat Shrink Sleeves
1. All splices shall utilize heat shrink sleeves for splice protection.
   a. 60 mm heat shrink sleeves shall be used in all 12 inch splice trays.
   b. 40 mm heat shrink sleeves are acceptable in 6 inch splice trays where 60 mm heat shrink sleeves either will not fit or are not recommended by the splice tray manufacturer.
   c. Manufacturer:
      i. Heat shrink sleeves for splices in surface mount fiber patch/splice cabinets Ortronics P/N OR-20500043 or equal.
      ii. Heat shrink sleeves for splices in rack mount fiber splice cabinets Ortronics P/N OR-20500130 or equal.

D. Splice Trays
1. All finished splices (with heat shrink sleeve in place) shall be mounted and stored within splice trays compatible with the splice enclosure being used. All slack in 250- and 900-micron coated fibers shall be carefully coiled and stored inside the tray.
2. Manufacturer:
   a. Splice trays for fusion splices in surface mount fiber patch/splice enclosures Ortronics P/N OR-62600003 or equal.
   b. Splice trays for fusion splices in rack mount fiber splice enclosures Ortronics P/N OR-61500016 or equal.

E. Fiber Optic Adapter Panels
1. Manufacturer:
   a. Adapter panels for multi mode fiber terminations in surface mount or rack mount patch or patch/splice cabinets 6-SC duplex (12 fibers), metal adapters, phosphor-bronze alignment sleeves, Ortronics P/N OR-615SCDSM6 or equal.
   b. Adapter panels for single mode fiber terminations in surface mount or rack mount patch or patch/splice cabinets 6-SC duplex (12 fibers),

blue adapters, ceramic alignment sleeves, Ortronics P/N OR-615SCDSM6C or equal.

F. Fiber Patch Enclosure, Wall Mount
   1. Drawing Reference: FPEW, where refers to the fiber patch panel count.
   2. Features/Functions:
      a. Provides a location for packaging fiber optic cables with direct terminations.
      b. Two compartments, separated by a partition loaded with fiber optic adapter panels.
         i. Left side typically for storing incoming cable slack and connecting terminated fibers.
         ii. Right side typically for patching rack-mounted network equipment.
      c. Suitable for indoor use.
      d. Constructed of 0.125 inch minimum thick aluminum or powder coated steel.
      e. Cable can be inserted/removed laterally via removable mending plate or similar.
      f. Interior cable storage rings or spools.
      g. Tamper-proof hardware - separate locking sections for cable terminations and patch panel access.
      h. Provides strain relief for entrance cables.
   3. Manufacturer:
      a. Patch enclosures for up to 24 fibers Ortronics P/N OR-615SMFC-L -12P or equal.
      b. Patch enclosures for up to 48 fibers Ortronics P/N OR-615SMFC-24P or equal.
      c. Patch enclosures for up to 96 fibers Ortronics P/N OR-615SMFC-48P or equal.

G. Fiber Patch/Splice Enclosure, Wall Mount
   1. Drawing Reference: FPSEW, where refers to the fiber patch panel count.
   2. Features/Functions:
      a. Provides a location for splicing and packaging fiber optic cables.
      b. Two compartments, separated by a partition loaded with fiber optic adapter panels.
         i. Left side typically for storing incoming cable slack and splice trays and connecting terminated fibers.
         ii. Right side typically for patching rack-mounted network equipment.
      c. Suitable for indoor use.
      d. Constructed of 0.125 inch minimum thick aluminum or powder coated steel.

e. Cable can be inserted/removed laterally via removable mending plate or similar.
f. Interior cable storage rings or spools.
g. Threaded stud or similar anchoring point for stacking and securing splice trays.
h. Tamper-proof hardware - separate locking sections for cable terminations and patch panel access.
i. Provides strain relief for entrance cables.

3. Manufacturer:
a. Patch/splice enclosures for up to 48 fibers Ortronics P/N OR-615SMFC-24P/S or equal.
b. Patch/splice enclosures for up to 96 fibers Ortronics P/N OR-615SMFC-48P/S or equal.

H. Fiber Patch Enclosure, Rack Mount
1. Drawing Reference: FPER, where refers to the fiber patch panel count.
2. Features/Functions:
a. 19" EIA rack mount.
b. Provides a location for packaging fiber optic cables with direct terminations.
c. Two compartments, separated by a partition loaded with fiber optic adapter panels.
i. Rear (larger) side typically for storing incoming cable slack and connecting terminated fibers.
ii. Front (smaller) side typically for patching rack-mounted network equipment.
d. Suitable for indoor use.
e. Constructed of 0.125 inch minimum thick aluminum or powder coated steel.
f. Cable can be inserted/removed laterally via removable mending plate or similar.
g. Interior cable storage rings or spools.
h. Tamper-proof hardware - separate locking sections for cable terminations and patch panel access.
i. Provides strain relief for entrance cables.
j. Suitable for reentry, if required for future maintenance or modification, without damage to the cable or terminated fibers.
3. Manufacturer:
a. Patch enclosures for up to 36 fibers Ortronics P/N OR-615MMC-18P-00 or equal.
b. Patch enclosures for up to 72 fibers Ortronics P/N OR-615MMC-36P-00 or equal.
c. Patch enclosures for up to 144 fibers Ortronics P/N OR-615MMC-72P-00 or equal.

I. Fiber Splice Enclosure, Rack Mount

1. Drawing Reference: FSER, where refers to the fiber splice count.
2. Features/Functions:
   a. 19" EIA rack mount.
   b. Provides a location for packaging fusion spliced fiber optic cables.
   c. Suitable for indoor use.
   d. Constructed of 0.125 inch minimum thick aluminum or powder coated steel.
   e. Interior cable storage rings or spools.
   f. Provides strain relief for entrance cables.
   g. Integral threaded stud or steel wire frame for organizing and securing splice trays
   h. Suitable for reentry, if required for future maintenance or modification, without damage to the cable or terminated fibers.
3. Manufacturer:
   a. Splice enclosures for up to 48 fibers Ortronics P/N OR-615MMC-48S-00 or equal.
   b. Splice enclosures for up to 96 fibers Ortronics P/N OR-615MMC-96S-00 or equal.

PART 3 EXECUTION

3.1 **R S 17130 C I B C R R O P C W EF A BDF .**

3.2 **R S 17100 S C , B M A M .**

3.3 **R S 17150 C H C .**

END OF SECTION

SECTION 17123
COMMUNICATIONS CABLE MANAGEMENT

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Section includes provision of cable management for cabling installed under the work of this Project as well as for Owner furnished patch cords at equipment racks.

B. Scope includes:

1. Innerduct.
   a. Interior.
   b. Outside Plant.
2. Cable End Spillway.
3. Backboard Cable Management.
4. Patch Panel Cable Management at racks and cabinets.

1.2 RELATED WORK IN OTHER SECTIONS

A. Section 17033 - Conduits and Backboxes for Communications Systems.
B. Section 17036 - Cable Trays for Communications Systems.
C. Section 17039 - Surface Raceways for Communications Systems.
D. Section 17053 - Identification for Communications Systems.
E. Section 17100 - Structured Cabling, Basic Materials and Methods.
F. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures.
G. Section 17119 - Communications Termination Blocks and Patch Panels.
H. Section 17150 - Communications Horizontal Cabling.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM).

1. ASTM D2239-03 Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter.

B. Underwriters Laboratories (UL).

1. UL 910 Test for Flame-Propagation and Smoke-Density alues for Electrical and Optical-Fiber Cables used in Spaces Transporting Environmental Air (Nov. 1998).

1.4 SUBMITTALS

A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 DELI ERY, STORAGE AND HANDLING

A. Procedures: In accordance with Section 01600 - Product Requirements and Section 17100 - Structured Cab ling, Basic Materials and Methods.

1.6 SE UENCING

A. Not used.

PART 2 PRODUCTS

2.1 CONDUIT CABLE MANAGEMENT

A. Conduit End Waterfall Spillway.
   1. Drawing Reference: CEW.
   2. Features/Functions:
      a. Spillway fastens to end of EMT conduit, provides radius sweep, open on top, solid from below.
      b. Maintains proper bend radii for fiber/cable.
      c. Provides tie points for fire pillow retention.
      d. Supports up to 100 lbs. of hanging fiber/cable.
      e. Clamp for securing to EMT.
      f. Self-fastening tie down system for supporting cabling.
   3. Construction:
      a. Fire Retardant ABS.
   4. Manufacturers:
      a. Bejed BJ-2049 Spillway.
      b. Or equal (no known equal).

2.2 HORI ONTAL PATCH PANEL CABLE MANAGEMENT

A. Patch Panel Cable Management, Rack Mounted, Snap Cover.
   1. Drawing References:
      a. 1 RU: RMWM1C
      b. 2 RU: RMWM2C
      c. 3 RU: RMWM3C
   2. Construction.
      a. EIA 19 or 23" Rack Mount, as required.
      b. Continuous flexible system of fingers and slots.
      c. De-burred to avoid snagging patch cord jacket.
      d. Snap Cover.
   3. Manufacturer, EIA 19 rack mount:
      a. 1 RU CPI 30139-719 or equal.
      b. 2 RU CPI 30130-719 or equal.
      c. 3 RU CPI 30131-719 or equal.
   4. Manufacturer, EIA 23 rack mount:
      a. 1 RU CPI 30139-723 or equal.
      b. 2 RU CPI 30130-723 or equal.
      c. 3 RU CPI 30131-723 or equal.

2.3 ERTICAL CABLE MANAGEMENT

A. Cable Management, ertical, latches.
   1. Drawing References:
      a. Single-Sided Narrow: CMSSNC
      b. Single-Sided Wide: CMSSWC
      c. Double-Sided Narrow: CMDSNC
      d. Double-Sided Wide: CMDCWC
   2. Construction.
      a. Bolts to racks specified in Section 17116.
      b. De-burred and supplied with protective edge guards to avoid snagging patch cord jacket.

c. System of latches to retain cables.
d. Manufacturer:
i. Single-Sided Narrow CPI 11730-703 or equal.
ii. Single-Sided Wide CPI 11374-703 or equal.
iii. Double-Sided Narrow CPI 12096-703 or equal.
iv. Double-Sided Wide CPI 11729-703 or equal.

2.4 BACKBOARD CABLE MANAGEMENT

A. Fiber Management Ring, Preformed Loop.
1. Drawing Reference: FMR
2. Construction:
a. 24 inch diameter steel ring stores fiber slack using elco fasteners at regular intervals around ring.
b. Screw fastens to backboard at BDF or IDF.
3. Manufacturer:
a. Leviton 48900-0FR.
b. Or equal (no known equal).

B. Wire Management Rings, Wall/Ceiling Mounted:
1. Drawing References/Functions Features:
a. WMRB - Bridle Ring Type, Threaded Lag Screw.
b. WMRC - Closed Ring, U shaped assembly with two screw holes at ends.
c. WMRO - Open, Re-enterable Split Ring permitting cables to be inserted midspan, two screw holes at ends.
d. WMP - Steel back board with 4 inch deep min, 8 inch wide vertical wire management rings, front enterable. Provide trough at bottom of each column of WMP.
e. WMP T - Narrow, steel back board with 4 inch deep min, 3 inch wide vertical wire management rings, front enterable.
2. Provide as required to support indicated cable bundle and location.
3. Provide type WMRB at wood frame construction for cable hung from underside of ceiling, unless otherwise noted.
4. Manufacturers:
a. WMRB:
i. B-Line Fasteners, BR Series.
ii. Senior Industries.
iii. T&B
iv. Or equal.
b. WMRC:
i. AllenTel
ii. Chatworth Products Wall Mount Closed D Ring.
iii. Senior Industries.
iv. Or equal.
c. WMRO:
i. AllenTel.
ii. Chatworth Products Wall Mount Open Ring.

iii. Commscope/Systimax, Inc.
iv. Siemon.
v. Or equal.

d. WMP:
i. Siemon S188- to match adjacent terminal blocks with S188-WD.
ii. Ortronics OR-806003194 or OR-806003196 to match terminal blocks.
iii. By any manufacturer listed for 110TB under Section 17119 – Communications Termination Blocks and Patch Panels.
iv. Or equal.

e. WMP T:
i. Siemon SI10M-WM- to match adjacent terminal blocks.
ii. By any manufacturer of listed for 110TB under Section 17119Communications Termination Blocks and Patch Panels.
iii. Or equal.

PART 3 EXECUTION

3.1 GENERAL

A. Refer to Section 17130 Communications Indoor Backbone Cabling for requirements for cable routing within IDF's, and BDF's.

3.2 INNERDUCT INSTALLATION

A. Schedule of Application.
1. Underground.
a. At 4" ducts and inside maintenance holes and vaults, place fiber cabling and 50 pair and smaller copper telephone cabling inside WMID.
b. Omit WMID at conduits smaller than 4 .
c. At tray conditions in utility tunnel and at backboard, cable runway and tray conditions at communications closets, protect fiber cabling with ID Innerduct.
d. Retention/Sealing of ducts at conduit entrances.
2. At plenum tray conditions, provide IDP.
3. At 4" and larger interior conduits, provide WMID. Provide plenum rated WMID at plenum ceiling conditions.

3.3 CONDUIT END WATERFALL

A. Fasten securely to conduit end wherever cabling will exit conduit 18" or more above the cable tray to prevent damage due to cabling due to weight of cable bearing on a conduit end.
B. Secure cabling with integral cable restraint system.

END OF SECTION

SECTION 17126
COMMUNICATIONS RACK MOUNTED POWER PROTECTION AND POWER STRIPS

PART 1 GENERAL

1.1 SCOPE OF WORK
A. Section includes provision of power strips at racks and cabinets installed under the work of this Project.

1.2 RELATED WORK IN OTHER SECTIONS
A. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures.

1.3 REFERENCES
A. ELECTRONIC INDUSTRIES ALLIANCE (EIA).
   1. EIA-31 0-D (l992) Cabinets, Racks, Panels, and Associated Equipment (ANSIIEIA/31 0- D).

1.4 SUBMITTALS
A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 DELI ERY, STORAGE AND HANDLING
A. Procedures: In accordance with Section 01600 - Product Requirements and Section 17100 - Structured Cabling, Basic Materials and Methods.

1.6 SE UENCING
A. Not used.

PART 2 PRODUCTS

2.1 E UIPMENT ENCLOSURE PWER, PROTECTION AND SIGNAL GROUNDING
A. Comply with applicable Codes. Provide UL Listed devices suitable for commercial use. Provide all junction boxes, raceway, fittings, wire, supports and fastenings as required for complete installation. Unless otherwise noted, provide receptacles of NEMA 5-15R configuration.

B. Full Height Receptacle Strip, One (1) Circuit, 15A.
   1. Features/Construction:
      a. Not less than 70" Long.
      b. Not less than eleven (11) 15A receptacles.
      c. Integral circuit breaker.
      d. NEMA 5-15P plug on 6' cord.
      e. UL Listed Assembly.
      f. Provide mounting hardware as necessary to attach to rack interior.
   2. Manufacturers:
      a. Middle Atlantic/Datatel.
      b. Or equal.

C. Full Height Receptacle Strip, One (1) Circuit, 20A.

1. Features/Construction:
   a. Not less than 70" Long.
   b. Not less than eleven (11) 15A receptacles.
   c. Integral circuit breaker.
   d. NEMA 5-20P plug on 6' cord.
   e. UL Listed Assembly.
   f. Provide mounting hardware as necessary to attach to rack interior.
2. Manufacturers:
   a. Midde Atlantic PD-1020C-NS.
   b. Or equal.

PART 3 EXECUTION

3.1 CONFORM WITH THE RE UIREMENTS OF SECTION 17116 AND THE FOLLOWING

A. Mounting:
   1. Mechanically fasten strips to the rack/cabinet being served using strip or rack being served.
   2. Mount strip so that it does not impede user access to:
      a. ertical wire management integral to the racks.
      b. Front and rear movement of adjustable EIA mounting rails supplied with the rack or cabinet.
      c. Mounting of Owner furnished EIA rack mountable equipment within the served rack.
   3. Unless otherwise noted, the strip to be mounted to derive power from electrical receptacles mounted to the cable tray above the rack or drop box receptacles beneath the floor. Mount strip so that the power cord reaches the provided receptacles without:
      a. Causing tension on the power cord.
      b. Putting it in direct contact with signal cabling.
      c. Putting it in contact with sharp edges.
      d. Lacing it to parts intended to be movable, including, but not limited to:
         i. Slide out drawers and shelving.
         ii. Rack mounted for Owner furnished servers on pullout rails.
         iii. EIA adjustable mounting rails.

END OF SECTION

SECTION 17130
COMMUNICATIONS INDOOR BACKBONE CABLING

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Work of this Section includes:
   1. Indoor Copper Backbone Cabling between Communications Rooms and communications terminal nodes other than station cabling.
   2. Indoor Optical Fiber Backbone Cabling between Communications Rooms and communications terminal nodes other than station cabling.
   3. Terminate fiber on patch panels as specified in Section 17119.
   4. Terminate copper cabling on terminal blocks as specified in Section 17119. Provide terminal block, high pair count copper connector cabling and rack mounted patch panels to permit Owner's telephone contractor to cross connect the entrance and riser cabling to individual station ports using Owner furnished patch cords.
   5. For all cabling:
      a. Test cabling to demonstrate performance to specified standards or better using test equipment and methods as specified in Section 17100.
      b. Label cables, jacks, plates and patch panels as specified in Section 17053.
      c. Document on Record Documents as described in Section 17010.

B. Related work in other Sections.
   1. Section 17026 - Grounding and Bonding for Communications Systems.
   2. Section 17029 - Hangers and Supports for Communications Systems.
   3. Section 17033 - Conduits and Backboxes for Communications Systems.
   4. Section 17036 - Cable Trays for Communications Systems.
   5. Section 17053 - Identification for Communications Systems.
   6. Section 17100 - Structured Cabling, Basic Materials and Methods.
   7. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures.
   8. Section 17119 - Communications Termination Blocks and Patch Panels.
   9. Section 17123 - Communications Cable Management.
   10. Section 17126 - Communications Rack Mounted Power Protection and Power Strips.
   11. Section 17150 - Communications Horizontal Cabling.

1.2 REERENCES

A. Refer to Section 17100 - Structured Cabling, Basic Materials and Methods.

1.3 SUBMITTALS

A. Conform to the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.4 DELI ERY, STORAGE AND HANDLING

A. Procedures: In accordance with Section 01600 - Product Requirements and Section 17100 - Structured Cabling, Basic Materials and Methods.

1.5 SE UENCING

A. Not used.

PART 2 PRODUCTS

2.1 COPPER BACKBONE CABLING

A. General:
   1. Each conductor shall be a minimum of 22 or 24 AWG.
   2. Complies with:
      a. ICEA S-90-661.
      b. EIA TIA/EIA-568-B.1.
      c. EIA TIA/EIA-568-B.2.
      d. NEMA WC 63.1
      e. UL444.
   3. Solid conductor 100 ohm multipair UTP (Unshielded twisted pair), formed into 25 pair binder groups covered with a gray thermoplastic jacket.
   4. Imprinted with:
      a. Manufacturers name or identifier.
      b. Flammability rating.
      c. Gauge of conductor.
      d. Transmission performance rating (category designation).
      e. At regular intervals not to exceed 2 feet.
   5. The word "FEET" or the abbreviation "FT" shall appear after each length marking.
   6. Provide communications general purpose (CM or CMG), communications plenum (CMP) or communications riser (CMR) rated cabling in accordance with NFPA 70.
      a. Type CMP and CMR may be substituted for type CM or CMG and type CMP may be substituted for type CMR in accordance with NFPA 70.
      b. Meets EIA/TIA Category 3.
      c. USOC color code.
      d. NEC Type CM or CMG.
   7. Color coding shall comply with industry standards for 25 pair cables.

B. Inside Distribution Wire, Horizontal.
   1. Drawing Reference ** pro T-IDW, where ** refers to required pair count.
   2. Construction:
      a. 2 to 600 pair count voice pair cabling in overall jacket.
      b. Meets EIA/TIA Category.
      c. USOC color code.
      d. NEC Type CM or CMG.
      e. Nominal Outside Diameter, not to exceed the following:
      f.

Pair County	Outside Diameter (inches)
6 pr.	0.23
12 pr.	0.25
25 pr.	0.34
50 pr.	0.47
100 pr.	0.64
200 pr.	0.97
300 pr.	1.07
400 pr.	1.30
600 pr.	1.50

3. Manufacturer:
   a. Superior/Essex.
   b. General Cable.
   c. Or equal.

C. Inside Distribution Wire, Riser.
1. Drawing Reference ** pr. T-IDW-R, where ** refers to required pair count.
2. Construction:
   a. 25 to 600 pair count voice pair cabling in overall jacket.
   b. P C jacket.
   c. USOC color code.
   d. NEC Type CMR.
   e. Meets EIA/TIA Category 3.
   f. Nominal Outside Diameter, not to exceed the following:

P C	**O D , :**
25 pr.	0.54
50 pr.	0.70
100 pr.	0.86
200 pr.	1.20
300 pr.	1.30
400 pr.	1.50
600 pr.	1.90

3. Manufacturer:
   a. Superior/Essex.
   b. General Cable.
   c. Or equal.

D. Inside Distribution Wire, Plenum.
1. Drawing Reference ** pro T-IDW-P, where ** refers to required pair count.
2. Construction:
   a. 25 to 600 pair count voice pair cabling in overall jacket.
   b. Plenum rated jacket.
   c. USOC color code.
   d. NEC Type CMP.
   e. Meets EIA/TIA Category 3.
   f. Nominal Outside Diameter, not to exceed the following:

P C	**O D**

25 pr.	0.54
50 pr.	0.70
100 pr.	0.86
200 pr.	1.20
300 pr.	1.30
400 pr.	1.50
600 pr.	1.90

3. Manufacturer:
   a. Superior/Essex.
   b. General Cable.
   c. Or equal.

2.2 FIBER OPTIC COMMUNICATIONS CABLING AND RELATED

A. General Requirements:

1. Fiber count per cable to comply with minimum counts indicated on the plans. Plans indicate specific cable counts providing quantities of multimode and single mode fiber strands.
2. uantities are minimum quantities. At Contractor's option, provide a greater number. Where a greater number are provided, terminate, test, label and document all strands on fiber patch panels and/or terminal boxes as indicated as if quantity provided were called out for on the plans.
3. Where contract documents call for individual single mode and multimode cables, Contractor may substitute a hybrid cable with the same or greater strand count of each type.
4. Comply with applicable Code for insulation, jacket, marking and listing for applicable use.
   a. Provide nonconductive optical fiber general purpose cable (OFN or OFNG), nonconductive optical fiber plenum cable (OFNP), and nonconductive optical fiber riser cable (OFNR) rated cable in accordance with NFPA 70 and UL 910.
   b. Type OFNP or OFNR may be substituted for type OFN or OFNG and type OFNP may be substituted for type OFNR in accordance with NFPA 70.
5. Fiber media shall, at minimum, meet the following performance standards:
   a. ANSI/EIA/TIA 568-B.l.
   b. ANSI/EIA/TIA 568-B.3.
6. Fiber media shall, at minimum, meet the following construction standards:
   a. ICEA S-87-640.
   b. ICEA S-83-596.
   c. All dielectric, unless otherwise noted.
7. The cable cordage jacket, fiber, unit, and group color shall be in accordance with EIA TIAIEIA-598-B.
   a. Colors shall be across specified storage/installation temperature range.
   b. Means of providing conforming colors shall not degrade performance of cable.

8. Jacket:
   a. Free of splits, holes or blisters.
   b. Marked and listed in conformance with California Electric Code 770.
   c. Conform with:
      i. UL 1666 and
      ii. NFPA 70.
   d. Heavy duty construction, Fiberglass Epoxy Rod/Kevlar strength member(s).
   e. Each fiber to be 100 attenuation tested by the Manufacturer prior to shipping. Manufacturer's test to be affixed to shipping reel.
   f. Cable shall be imprinted with fiber count, fiber type and aggregate length at regular intervals not to exceed 40 inches. Hybrid fiber optic cable marking shall comply with EIA TIAIEIA-598-B.
9. Performance:
   a. Temperature Sensitivity:
      i. Storage: -40C degrees to 70C degrees.
      ii. Installation: -30C degrees to 70C degrees.
   b. ariance:
      i. Multimode.
   c. Specified attenuation is maximum allowed over entire operating range of cable.
      i. Single mode:
         (1) Average change, not more than 0.05 dB/km at 1550 -40C degrees to 70C degrees.
      ii. Maximum change not more than 0.15 dB/km at 1550 nm.

B. Fiber, Multimode - General.
1. Meeting EIA/TIA 568B.3 and EIA TIAIEIA-492AAAB, multimode, 50/125-urn diameter, 0.275 numerical aperture.
2. Construction:
   a. Multimode fiber strands.
   b. Core Diameter: 50.0 /- 3.0 m per TIA/EIA -455-176.
   c. Cladding Diameter: 125 /- 2.0 / m per TIA/EIA-455-176.
   d. Numerical Aperture:0.200 /- 0.015 per TIA/EIA-455-177.
   e. Core to Cladding Offset $\leq$ 3.0 /µm.
   f. Coating Diameter: 245 /- 10 / m per TIA/EIA-455-173 or 163.
   g. Core and Cladding Non-Circularity.
   h. Core: $\leq$ 5.0% per TIA/EIA -455-176.
   i. Cladding: $\leq$ 2.0% per TIA/EIA-455-176.
   j. Graded Index.
   k. Effective Group Index of refraction:
      i. 1.49 at 850 nm.
      ii. 1.49 at 1300 nm.
   l. Coating to be mechanically strippable, dual layered, U -cured acrylate applied by the fiber manufacturer.

3. Each fiber to be 100 proof-tested by the manufacturer to sustain 100 kpsi load minimum per TIA/EIA-455-31.
4. Performance:
   a. Bandwidth:
      i. Laser source, per TIA/EIA-492AAAC and draft IEC 60793-210 for type Al a.2, ensured by DMD performance specifications for sources meeting launch conditions specified in 10 Gigabit Ethernet (IEEE 802.3ae), OIF OC-192/STM-64 SR-4-04, and draft 10 Gigabit Fiber Channel (Tll.2 10GFC).
      (1) 850 nm: 950 MHz at 1 km.
      (2) 1300 nm: 500 MHz at 1km.
   b. Overfilled Launch/LED, per TIA/EIA-455-204.
      i. 850 nm: 700 MHz at 1 km.
      ii. 1300 nm: 500 MHz at 1km.
   c. Chromatic Dispersion:
      i. Minimum Zero Dispersion Wavelength: 1297 nm per TIA/EIA-455-168 or 175.
      ii. Maximum Zero Dispersion Wavelength: 1320 nm per TIA/EIA-455-168 or 175.
      iii. Maximum Zero Dispersion Slope: 0.101 ps/nm2^{e}km per TIA/EIA-455-168 or 175.
   d. Differential Mode Delay (DMD), ps/m, per DMD test methods TIA/EIA-455-220 and IEC 60793-1-49.
      i. 850 nm: .70.
      ii. 1300 nm: .88.
   e. Attenuation:
      i. 850 nm: ≤ 3.0 dB/km.
      ii. 1300 nm: ≤ 1.0 dB/km.
      iii. Max attenuation point discontinuity: 0.25 dB at any design wavelength.
      iv. Bending Attenuation induced 1550 run, with 100 turns on 75mm dia mandrel: 0.50 dB.
      v. Attenuation Difference at 1380 nm, ≤ attenuation at 1300 nm 3.0 dB/km.
      vi. Water Immersion: Induced attenuation, 23 degrees C water immersion: ≤ 0.1 dB/km.
   f. Manufacturers:
      i. Berk-Tek.
      ii. Or equal.

C. Fiber, Single Mode – General.
1. Meeting EIA/TIA 568B.3 and EIA TIA/EIA-492CAAA, single-mode, 8/125-m diameter, 0.10 numerical aperture.
2. Construction:
   a. Single mode fiber strands.

b. Mode field diameter: 9.3 /- 0.5 m at 1310 nm (measured per Petermann II) 10.5 /- 1.0 m at 1550 nm.
c. Core Diameter: 8.3 m.
d. Numerical Aperture: 0.11.
e. Cladding Diameter: 125 /- 1.0 m.
f. Cloating Diameter: 245 /- 10 m.
g. Cladding Non-Circularity: ≤ 1.0%.
h. Core to Cladding Offset: ≤ 0.8 µm.
i. Cabled Cutoff Wavelength (ccf): <1260 nm.
j. Coating to be mechanically strippable, dual layered, U -cured acrylate applied by the fiber manufacturer.
k. Each fiber to be 100 proof-tested by the manufacturer to sustain 100 kpsi load minimum.

3. Performance:
   a. Chromatic Dispersion:
      i. Minimum Zero Dispersion Wavelength: 1301.5 run.
      ii. Maximum Zero Dispersion Wavelength: 1321.5 nm.
      iii. Maximum Zero Dispersion Slope: 0.092 ps/nm2 per km.
   b. Dispersion:
      i. ≤ 3.2 ps/(nm^{e}km) from 1285 run to 1330 nm.
      ii. 18 ps/(nm^{e}km) at 1550 nm.
      iii. Polarization Mode Dispersion: ≤ 0.5 ps/ SQRT km.
   c. Attenuation:
      i. Point Discontinuity: ≤ 0.10 dB at 1310 nm or 1550 nm.
      ii. Water peak attenuation at 1383 /- 3 nm: ≤ 2.1 dB/km.
      iii. Bending Attenuation induced 1550 nm, with 100 turns on 75mm dia mandrel 0.10 dB.
      iv. Water Immersion: Induced attenuation, 23 degrees C water immersion: ≤ 0.05 dB/km.
   d. Manufacturer:
      i. Berk-Tek.
      ii. Or equal.

D. Fiber Optic Cable, Inside Distribution, Breakout Cable:
1. Drawing References:
   a. FOM-IDW Multimode, where indicates fiber count.
   b. FOS-IDW Single Mode, where indicates fiber count.
   c. FOH-IDW Hybrid, where indicates total fiber count. Ratio of Single mode to Multimode within overall count is 1:1, unless otherwise noted.
2. Fiber: Refer to:
   a. FIBER, MUL TIMODE, GENERAL, and
   b. FIBER, SINGLE MODE, GENERAL, as applies.
3. Application: In-building Distribution. Breakout Cable Applications.
4. Approvals: Where used outside conduit, OFN, OFNP, OFNR per NEC 770-51, as applies.

5. Construction:
   a. Refer additionally to Fiber Cable Construction, General, and elsewhere herein.
   b. Suitable and approved for indoor use.
   c. Tight buffer.
   d. At least one ripcord to facilitate sheath removal.
   e. Breakout style construction, with individual jacket per fiber with overall outside jacket.
   f. Maximum Cable Diameter:
      i. 2 Fibers: .236
      ii. 4 Fibers: .285
      iii. 6 Fibers: .363
      iv. 8 Fibers: .437
      v. 10 Fibers: .473
      vi. 12 Fibers: .506
   g. Performance:
      i. Maximum attenuation per EIA/TIA-455-61.
      ii. Multimode.
         (1) 850 nm: $\leq$ 3.5 dB/km.
         (2) 1300 nm: $\leq$ 1.5 dB/km.
      iii. Single mode.
         (1) 1300 nm: $\leq$ 1.0 dB/km.
         (2) 1550 nm: $\leq$ 1.0 dB/km.
   h. Minimum bend radius:
      i. During installation: 20 times cable outside diameter.
      ii. After installation: 10 times cable outside diameter.
   i. Maximum Safe Longitudinal Load:
      i. At installation:
         (1) 2 Fibers: 150lbs.
         (2) 4 Fibers: 290 lbs.
         (3) 6 Fibers: 380lbs.
         (4) 8 Fibers: 480lbs.
         (5) 10-12 Fibers: 575 lbs.
      ii. Long term application:
         (1) 2 Fibers: 25 lbs.
         (2) 4 Fibers: 90lbs.
         (3) 6 Fibers: 115 lbs.
         (4) 8 Fibers: 145lbs.
         (5) 10-12 Fibers: 75lbs.
      iii. Crush resistance: 250lb/inch.
      iv. Impact Resistance: 3.6 ft-lbs., 10 impacts.
      v. Flex, Twist/Bend 1000 cycles, 22 lbs., 10 x O.D. radius.
   j. Manufacturer, subject to above:
      i. Berk-Tek.
      ii. Or equal.

E. Fiber Optic Cable, Riser:
   1. Drawing References:
      a. FOM-R Multimode, where indicates fiber count.
      b. FOS-R Single mode, where indicates fiber count.
      c. FOH-R Hybrid, where indicates total fiber count. Ratio of Single mode to Multimode within overall count is 1:1, unless otherwise noted.
   2. Fiber: Refer to:
      a. FIBER, MUL TIMODE, GENERAL, and
      b. FIBER, SINGLE MODE, GENERAL, as applies.
   3. Application: Intra-building distribution in building risers and below building crawl space.
   4. Listing: Meeting NEC/CEC OFNR, Listing by nationally recognized testing agency.
      a. Construction:
         i. Refer additionally to Fiber Cable Construction, General, and elsewhere herein.
         ii. Jacket: Subject to listing and rating for vertical riser cable.
         iii. Tight Buffer construction only, "Core Lock" not required.
         iv. Otherwise as for FO -OP, except for construction affecting listing.
      b. Dimensions, not to exceed the following:
         i. 1 to 4 Fibers: 0.20".
         ii. 5 to 12 Fibers: 0.28 .
         iii. 12 to 24 Fibers: 0.50 .
         iv. 25 to 60 Fibers: 0.80 .
         v. 61 to 108 Fibers: 0.90 .
         vi. 109 to 144 Fibers: 1.10 .
      c. Performance:
         i. As for FO -OP.
      d. Manufacturer:
         i. Berk-Tek.
         ii. Or equal.

F. Fiber Optic Cable, Plenum:
   1. Drawing References:
      a. FOM-P Multimode, where indicates fiber count.
      b. FOS-P Single mode, where indicates fiber count.
      c. FOH-P Hybrid, where indicates total fiber count. Ratio of Single mode to Multimode within overall count is 1:1, unless otherwise noted.
   2. Fiber: Refer to
      a. FIBER, MULTIMODE, GENERAL, and
      b. FIBER, SINGLE MODE, GENERAL, as applies.
      c. Application: Intra-building distribution in building plenum and duct space.

3. Listing: Meeting NEC OFNP, Listing by nationally recognized testing agency.
4. Construction:
   a. Refer additionally to Fiber Cable Construction, General, and elsewhere herein.
   b. Jacket: Subject to listing and rating for plenum cable.
   c. Tight Buffer construction only, Core Lock not required.
   d. Otherwise as for FO -OP, except for construction affecting listing.
5. Dimensions, not to exceed the following:
   a. 1 to 4 Fibers: 0.20 .
   b. 5 to 12 Fibers: 0.28 .
   c. 12 to 24 Fibers: 0.50 .
   d. 25 to 60 Fibers: 0.80 .
   e. 61 to 108 Fibers: 0.90 .
   f. 109 to 144 Fibers: 1.10 .
6. Performance:
   a. As for FO -OP.
7. Manufacturer:
   a. Berk-Tek
   b. Or equal.

G. Fiber Optic Cable, Outside Plant, Riser and Inside, Constrained Diameter:
1. Drawing References:
   a. FOM-OPR Multimode, where indicates fiber count.
   b. FOS-OPR Single mode, where indicates fiber count.
   c. FOH-OPR Hybrid, where indicates total fiber. Ratio of Single mode to Multimode within overall count is 1:1, unless otherwise noted.
2. Fiber and Application:
   a. Inter-building and intra-building distribution in building risers, below building crawl space, manholes and site conduit.
   b. Specifically suitable for continuous splice free entry into building from OSP interior past without distance limits due to construction and/or cable diameter.
3. Listing: UL OFNR. Meeting NEC OFNR.
4. Construction:
   a. Refer additionally to Fiber able Construction, General, and elsewhere herein.
   b. Suitable and approved for wet location. Meets requirements for FO -OP where installed in those locations.
   c. As for FO -R with not to exceed dimensional constraint, as follows:

F C	**O C D .**
2	0.18
4	0.20
6	0.22
8	0.24

10	0.26
12	0.28
14	0.28
16	0.28
18	0.28
24	0.31
30	0.35
36	0.35
48	0.41
60	0.43
72	0.47
84	0.51
96	0.55
108	0.55
120	0.59
132	0.61
144	0.63
156	0.71

5. Performance:
   a. As for FO -R.
6. Manufacturer:
   a. Berk-Tek.
   b. Or equal.

PART 3 EXECUTION

3.1 FIBER OPTIC CABLING PRACTICE

A. Service Loop.
   1. At IDF's and BDF's, at both ends of cables, provide at least 30 feet of fiber in excess of that required to reach the patch panel by a dressed route. Form into a storage loop and fix in place as directed by the Owner's Representative.
   2. At the Telecomm Building, provide at least 30 feet of fiber in excess of that required to reach the patch panel by a dressed route. Form into a storage loop and fix in place in the cable vault (outside of the machine room) as directed by the Owner's Representative.

B. Splicing.
   1. Interior: Provide fusion splices.
   2. Exterior: Do not splice at exterior unless splicing is indicated on Plans. In such circumstances, provide fusion splices.

C. Termination Methods.
   1. Review proposed breakout procedure with the Owner's Representative before beginning this work.
   2. Use full cable breakout method. Display both connectorized and non-connectorized fibers entering a patch panel.

3. Remove sheath so that no more than 4 inches of unstripped cable enters the panel.
4. Strip back a sufficient amount of cable so that fiber strands wrap at least one full wrap, circle or figure eight, inside the panel with the connectorized ends attached to the most distant bulkhead connectors.
5. Group together the fibers from each binder group with 0.125 inch nylon spiral wrap. (Commscope/Systimax, Panduit, Corning Cable Systems SAN-DT25-06, or equal.)

D. Outside Plant.
1. Obtain allowable pulling tension for underground fiber cable from the manufacturer. Use pulling equipment with tension gauges to verify that cable pulls do not exceed allowable pulling tension.
2. Loose Tube, Gel Filled Cabling - No flow of filling when tested in accordance with FOTP-81.

E. Loose Tube Breakout.
1. Install breakout tubing over the full exposed length of the fiber strands.
2. Install buffer tubing on all strands, including those not being connectorized as part of this Contract.
3. Reinforce and protect the junction of the cable sheath and buffer tubing using a method approved by the Owner's Representative before beginning this work.

3.2 COPPER BACKBONE TIE CABLE INSTALLATION AND TERMINATION

A. General:
1. Backbone cable(s) shall be installed in conduit system unless otherwise noted.

B. Sequencing:
1. If the installation of a tie cable requires the disconnection and removal of any existing cable(s) carrying active service prior to installation.
   a. Notify the Owner's Representative no less than 5 working days in advance of when this work is to be performed.
2. When this work is performed, the newly installed cables must be installed, tested and passed in one 24 hour period beginning when the active service on the existing cable is interrupted.

C. Installation of Tie Cable:
1. All tie cable between terminal blocks at IDF rooms shall be continuous, unspliced runs.
2. Termination of oice or Shared Use Tie Cable:
   a. Cable shall be terminated on 66 Type punch blocks system in the following order:
      i. Terminate pairs and groups in order top to bottom and then left to right according to insulation or binder color as listed below.
      ii. Mate is the first wire of the pair to be terminated, Wire is the second.
   b. Comply with the following table:

G N	P	M	B	W
1		White	Blue	
2		White	Orange	
3		White	Green	
4		White	Brown	
5		White	Slate	
6		Red	Blue	
7		Red	Orange	
8		Red	Green	
9		Red	Brown	
10		Red	Slate	
11		Black	Blue	
12		Black	Orange	
13		Black	Green	
14		Black	Brown	
15		Black	Slate	
16		Yellow	Blue	
17		Yellow	Orange	
18		Yellow	Green	
19		Yellow	Brown	
20		Yellow	Slate	
21		iolet	Blue	
22		iolet	Orange	
23		iolet	Green	
24		iolet	Brown	
25		iolet	Slate	

3. Cables containing pair counts of 50 or greater shall be terminated as follows:
   a. Columns of punch blocks stacked 2 high shall be mounted on the backboard.
   b. Beginning at the top right of the 1st column, first the blue binder will be punched down, followed by the orange binder directly beneath it.
   c. Binder punch will continue top to bottom, and then left to right until the entire cable has been terminated.
   d. Thus a 50-pair cable requires two punch blocks.
4. Upon completing the termination of all cables within an IDF, install a clear plastic cover at each punch block.

3.3 DATA TELEPHONE IDF ROOM LAYOUT

A. General:
1. Final backboard design layout within an IDF room shall be approved by the Owner's Representative prior to work beginning on the backboard.
2. Reference the design basis layout in the plans and bring to the Owner's Representative's attention any field conditions that would prevent installation as shown on the plans. Submit for resolution in a timely manner.
3. Layout of cable around backboard:

a. All backbone cable shall be formed around the backboard before either rising or dropping vertically to the punch blocks on which they are to be terminated.
b. All backbone cable shall be organized in Wire Management Rings, Split D, Type WMRO. No tywraps or similar bindings are permitted.

4. Termination:
a. Terminate voice pairs and BDF tie cable on 66 blocks.

3.4 DATA TELEPHONE NODE AND BDF ROOM LAYOUT

A. General:
1. Final backboard and cable runway design layout within the Telecomm Building or within a BDF room shall be approved by the Owner's Representative prior to work beginning.
2. Reference the design basis layout in the plans and bring to the Owner's Representative's attention any field conditions that would prevent installation as shown on the plans. Submit for resolution in a timely manner.

B. Layout of cable around backboard:
1. All cables shall be formed around the backboard before either rising or dropping vertically to the punch blocks on which they are to be terminated.
2. All cables shall be organized in Wire Management Rings, Split D, and Type WMRO. No tywraps or similar bindings are permitted.

C. For outside plant, flooded cables entering the Telecomm Building, a BDF or an IDF functioning as a building entrance facility:
1. Transition in a splice case to non-flooded cable prior to termination on protector blocks for voice pairs, or on an unprotected 66 block for systems pairs, where such are indicated. Where systems pairs are not indicated, assume all pairs are for voice use.
2. Position the splice case on the backboard where accessible for future service. Orient parallel to floor to prevent continuous gel flow from OSP cabling. Place on cable tray only where such placement is indicated on the plans.

END OF SECTION

SECTION 17150
COMMUNICATIONS HORI ONTAL CABLING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes, but is not necessarily limited to provision of:
   1. Horizontal Station Cabling
      a. Horizontal copper station cabling, meeting TIA/EIA Category 6 standards, homerun from receptacles to indicated BDF. Terminate on rack mounted patch panels, as indicated.
   2. For all cabling:
      a. Terminate on patch panels as specified in Section 17119 – Communications Termination Blocks and Patch Panels.
      b. Test cabling to demonstrate performance meets or exceeds specified standards using test equipment and methods as specified in Section 17100 – Structured Cabling, Basic Materials and Methods.
      c. Label cables, jacks, plates and patch panels as specified in Section 17053 – Identification for Communications Systems.
      d. Document on Record Documents as described in Section 17010 – Common Work Results for Communications.

B. Related Documents:
   1. Specification Section 17010 – Common Work Results for Communications applies to this Section.

C. Related Work in Other Sections:
   1. Section 17029 – Hangers and Supports for Communications Systems
      a. J-hooks and hangers for the work of this Section.
   2. Section 17033 – Conduits and Backboxes for Communications Systems
      a. Empty raceway for the work of this Section.
   3. Section 17036 – Cable Trays for Communications Sytstems
      a. Empty tray for the work of this Section.
   4. Section 17039 – Surface Raceways for Communications Systems
      a. Empty raceway for the work of this Section.
   5. Section 17053 – Identification for Communications Systems
      a. Labeling systems and execution for the work of this Section.
   6. Section 17119 – Communications Termination Blocks and Patch Panels
      a. Specification for patch panels and blocks used by work of this Section
   7. Section 17123 – Communications Cable Management
      a. Specification for innerduct, backboard and patch cord management used by the work of this Section.

1.2 REFERENCES

A. As listed in Section 17100 – Structured Cabling, Basic Materials and Methods.

1.3 SUBMITTALS

A. Conform with the requirements of Section 01300 – Administrative Requirements and Section 17010 – Common Work Results for Communications.

1.4 DELI ERY, STORAGE AND HANDLING

A. Procedures: In accordance with Section 01600 – Product Requirements and Section 17100 – Structured Cabling, Basic Materials and Methods.

1.5 SE UENCING

A. Not Used.

PART 2 PRODUCTS

2.1 GENERAL

A. All products shall be NEW.

B. All devices shall comply with all parts of ANSI/TIA/EIA 568-B.1, B.2, B.3 Commercial Building Telecommunications Standard.

C. The wiring configuration for all telecommunications devices shall be T568-B.

D. All UTP cabling shall meet or exceed all requirements in this specification, ANSI/TIA/EIA S-80-576 that are applicable to four-pair inside wiring cable for non-plenum spaces within a building.

E. All Copper data cabling and data connectivity products shall be manufacturer-recommended end-to-end combinations (patch cords, station connectors, horizontal cabling, and patch panels). The selected combination must meet the following criteria:

1. ETL erified Components to ANSI/TIA-568-B.2-1 (Category 6)
2. ETL erified Patch Cords to ANSI/TIA-568-B.2-1 (Category 6)
3. ETL erified Communications Cables to ANSI/TIA 568-B.2-1 (Category 6).

F. Products are specified throughout this specification either by reference standard or by manufacturer and part number in order to establish quality and performance characteristics of individual products. Contractor s options for selecting each product are as follows:

1. Product specified only by reference standards: Select any product meeting standards.
2. Product specified by naming several products and/or manufacturers: Select any product and/or manufacturer named.
3. Product specified by naming several products and/or manufacturers and reference standards: Select any product meeting standards. Product and/or manufacturer names indicate products and/or manufacturers, which meet standards.
4. Product specified by naming only product: Select product specified.
5. Product specified by naming one or more products and stating or equal with the specified product: Select any product named or submit request for substitution for any product not specifically named. Product substitutions submitted prior to bid shall be handled according to procedures outlined in section 00430 – Supplements to Bid Form. Product substitutions submitted after contract award shall be handled according to procedures outlined in sections 00700 – General Requirements and 01600 – Product Requirements.

2.2 DATA AND OICE HORI ONTAL CABLE

A. Drawing Reference:
   1. Plenum rated (CMP) cables: UTP6-4P, where: cable count
   2. Riser rated (CMR) cables: UTP6-4, where: cable count

B. The horizontal cable, running to/from each data or voice port, shall be BLUE in color.

C. Manufacturer:
   1. In plenum spaces, Berk-Tek 4 pair, 24 AWG, Category 6, CMP, LanMark 1000 P/N 10032094 or equal.
   2. In spaces not noted as plenum space, Berk-Tek 4 pair, 24 AWG, Category 6, CMR, LanMark 1000 P/N 10032455 or equal.

2.3 MODULAR JACKS AND BLANK INSERTS

A. Modular Jacks
   1. Single modular inserts for data and voice ports shall be 8-position, 8-conductor, 180 , T568A/B.
   2. Manufacturer:
      a. The modular insert for data port #1 shall be DARK ORANGE, Ortronics P/N OR-TJ600-43 or equal.
      b. The modular insert for data port #2 shall be DARK ORANGE, Ortronics P/N OR-TJ600-43 or equal.
      c. The modular insert for data port #3 shall be DARK ORANGE, Ortronics P/N OR-TJ600-43 or equal.
      d. The modular insert for data/voice port #4 shall be DARK BLUE, Ortronics P/N OR-TJ600-36 or equal.

B. Blank Inserts
   1. All empty positions within a faceplates and surface mount boxes shall be filled with blank inserts.
   2. Manufacturer:
      a. Ortronics TracJack, FOG WHITE P/N OR-42100002-88 or equal.

2.4 WORK AREA FACEPLATES AND DE ICE BOXES

A. Drawing Reference:
   1. MMP4 Wall mount, single gang, 4-port faceplate
   2. MMP6 Wall mount, single gang, 6-port faceplate
   3. IRR4 Inline surface raceway, single gang, 4-port faceplate
   4. IRR6 Inline surface raceway, single gang, 6-port faceplate
   5. OMP4 System furniture, 4-port faceplate
   6. OMP6 System furniture, 6-port faceplate

B. All faceplates shall be UL listed and CSA certified.

C. All faceplates shall be constructed of high-impact, ABS plastic UL 94 -0 construction (unless otherwise specified).

D. All faceplates shall have a minimum of four (4) modular inserts.

E. Manufacturer:

1. Wall mount, single gang 4 port faceplate Ortronics TracJack Series, FOG WHITE, P/N OR-40300546 or equal.
2. Wall mount, single gang, 6 port faceplate Ortronics TracJack Series, FOG WHITE, P/N OR-40300545 or equal.
3. Inline surface raceway faceplates shall be from the same manufacturer and product series as the raceway itself. Faceplates shall be specifically designed by the manufacturer to accept the data and voice modular inserts specified in this section.
4. System furniture, 4-port faceplate Ortronics TracJack Series, BLACK, P/N OR-40300633-00 or equal.

2.5 WALL TELEPHONE FACEPLATES

A. Drawing References:
   1. Wall Mounted Telephone, Flush
   2. 630A

B. Construction, where not otherwise specified, scheduled, or indicated:
   1. Mechanically fastened to building or similar. Adhesive fastening is not acceptable.
   2. Stainless steel or high strength 94 O plastic.
   3. Mounts to single gang ring, single gang box, or surface mount box. Refer to schedule on drawings.
   4. Shall accept one (1) modular jack specified in paragraph 2.3.
   5. Face of jack is flush with surface of faceplate when mounted into faceplate.

C. Manufacturer:
   1. Ortronics OR-40300637
   2. Or equal.

2.6 DATA PATCH CORDS

A. All UTP patch cords shall be factory terminated.

B. Lengths at the workstation shall not be less than 5 ft nor more than 9 ft.

C. Lengths at the patch panel shall not be less than 3 ft nor more than 15 ft.

D. Coordinate lengths in with the owner through the construction chain of command prior to purchasing.

E. Manufacturer:
   1. 3 ft patch cords Ortronics Clarity Category 6, BLUE, P/N OR-MC603-06 or equal.
   2. 5 ft patch cords Ortronics Clarity Category 6, BLUE, P/N OR-MC605-06 or equal.
   3. 7 ft patch cords Ortronics Clarity Category 6, BLUE, P/N OR-MC607-06 or equal.
   4. 9 ft patch cords Ortronics Clarity Category 6, BLUE, P/N OR-MC609-06 or equal.
   5. 15 ft patch cords Ortronics Clarity Category 6, BLUE, P/N OR-MC615-06 or equal.

2.7 OICE PATCH CORDS

A. This section applies to patch cords used to distribute dial tone from voice backbone termination blocks to patch panels in the telecommunications Entrance Facility (EF)

and each Telecommunications Room (TR) ONLY. See paragraph 2.5 for specifications for patch cords used to distribute data connections in Telecommunications Equipment Rooms (ER), Telecommunications Rooms (TR), and work areas.

B. oice patch cords shall be single-ended, 4-pair solid cable assembly, T568B, gray jacket, 20 ft, CMR, no boot

C. Manufacturer:
   1. Siemon P/N IC5-8A-20
   2. Or equal.

2. UNSPECIFIED PRODUCTS

A. Any product not specifically addressed in this specification or on the drawings but required in order to provide a complete and functional structured cabling system shall be provided by the telecommunications contractor in a quantity and level of quality consistent with the specified items. Unspecified products shall be approved by the owner through the construction chain of command prior to installation. Product submittal requirements for specified products shall also apply to unspecified products.

PART 3 EXECUTION

3.1 GENERAL

A. All devices shall comply with ANSI/TIA/EIA 568-B., B.2, B.3 Commercial Buildings Telecommunications Standard.

B. All telecommunication outlets shall be T568B wiring configuration.

C. All products shall meet or exceed all requirements of this specification.

D. The telecommunications contractor s work shall comply with all contract documents including, but not limited to:
   1. Architectural floor plans
   2. Furniture plans
   3. Equipment layouts
   4. Electrical contract documents
   5. Telecommunications contract documents

E. The telecommunications contractor shall coordinate all work with all other trades and:
   1. Project manager
   2. General contractor
   3. Electrical contractor
   4. Owner

F. The telecommunications contractor shall refer to drawings for pathways including sleeves, conduits, cable trays and runways, and J-hook supports to be utilized for the structured cabling system.

G. The telecommunications contractor shall perform work so that progress of entire project including work of other sections is not interfered with or delayed.

H. The telecommunications contractor shall obtain detailed installation information from all manufacturers under other specification sections that affect the installation of the

structured cabling system and provide information on products furnished under this section that affect work specified in other sections.

I. The telecommunications contractor shall not disrupt existing services. Existing services shall remain operational at all times unless there is a compelling need to disrupt them. If such a compelling need is determined to exist, then the telecommunications contractor shall coordinate an outage through the construction chain of command at least 48 hours in advance.

3.2 WORKMANSHIP

A. All work shall adhere to the reference standards in Part 1 of this specification.

B. Work shall be executed in workmanlike manner and shall be neat, plumb, parallel to the building structure, perpendicular to all electronics and associated cabling and neat in appearance when completed.

C. The telecommunications contractor shall maintain maximum headroom at all times and shall not run work exposed unless noted as such on the drawings.

D. Material and equipment shall be new and installed according to manufacturer s recommended best practices so that the completed installation operates safely and efficiently.

E. The telecommunications contractor is responsible for the greater quantity and better quality where conflicts exist.

F. Any reference to telecommunications outlet shall indicate faceplate, modular insert, termination, cabling, labeling, etc.

G. All cabling shall be terminated at both ends unless otherwise noted on the drawings.

3.3 DATA AND OICE HORI ONTAL CABLE

A. Install one (1) horizontal Category 6 cable from each data and voice modular insert within faceplate to its corresponding patch panel.

B. All cables shall be labeled at both ends with the cable ID using equipment and permanent labels approved by the owner. See Section 17053 – Identification for Communications Systems for cable identification specifications.

C. All four pairs of each horizontal cable shall be terminated at both ends.

1. One end of the horizontal cable shall be terminated in an 8-position, 8-conductor modular jack at the telecommunications outlet.
2. One end of the horizontal cable shall be terminated in an 8-position, 8-conductor 110 data patch panel within the Telecommunications Room (TR).

D. Install cable in specified raceways and cable trays.

E. Cable pulling: Pulling tension: Maximum pulling tensions for 4-pair horizontal UTP cable shall not exceed 110N (25 lbf).

F. Maintain cable twist to within inch of the main point of Insulation Displacement Contact (IDC).

G. When stripping cable for termination remove only a minimum amount (i.e., as little as possible) of cable jacket insulation (not to exceed inch).

H. Additional cable slack (Service Loop) shall be provided at both ends for maintenance or future cabling system changes:

1. Telecommunications Entrance Facility (EF)/Telecommunications Rooms (TRs)/Service Loop: 10 feet (arranged in figure 8 or serpentine fashion wherever possible to avoid inductance).

2. Work Area or Wall Telephone outlet: 3 feet

I. Splices are not permitted in any horizontal cabling.

J. No horizontal cable run from modular connector to patch panel shall exceed 90 m (295 ft) including slack.

K. Horizontal cable shall run loose throughout all conduits. At no time shall any horizontal cable within a conduit be secured by zip ties, electrical, tape, hook and loop closure straps or similar bindings.

L. Cables for corresponding data and voice ports shall be terminated on separate patch panels. See Section 17053 – Identification for Communications Systems for cable identification specifications.

1. Patch panel A shall be used to terminate data port #1 for all stations.
2. Patch panel B shall be used to terminate data port #2 for all stations.
3. Patch panel C shall be used to terminate data port #3 for all stations.
4. Patch panel D shall be used to terminate data/voice port #4 for all stations.
5. Patch panel P shall be used to terminate all wall telephones.

3.4 MODULAR JACKS AND BLANK INSERTS

A. Install all data and voice modular inserts.

B. Refer to the drawings for configuration and orientation of modular inserts within each data and voice faceplate.

C. Refer to the drawings for configuration and orientation of icons.

3.5 WORK AREA AND WALL TELEPHONE FACEPLATES AND DE ICE BOXES

A. Install all faceplates and device boxes.

B. Refer to the drawings for location of work area and wall telephone faceplates and device boxes.

C. Refer to the drawings for configuration and orientation of work area and wall telephone faceplates and device boxes.

D. Coordinate exact location, configuration, and orientation of all work area and wall telephone faceplates and device boxes through the construction chain of command prior to installation.

3.6 DATA PATCH CORDS

A. The telecommunications contractor shall provide a quantity of patch cords to match 100 percent of the total quantity of data and voice ports terminated within each installed patch panel.

B. The telecommunications contractor shall provide a quantity of patch cords to match 100 percent of the total quantity of installed data modular inserts within the data/voice faceplates at the work areas.

C. The telecommunications contractor shall deliver all patch cords to Owner s Representative.

3.7 TESTING AND CERTIFICATION

A. 100 percent of horizontal data and voice cabling shall be tested and certified in accordance with Section 17160 – Communications Structured Cable Testing and Certification.

END OF SECTION

APPENDIX D – STRUCTURAL CALCULATIONS

SLO Police Department Fence

1120 Walnut St.

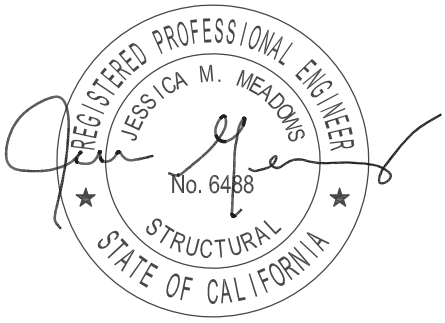
RRM Project No. 2504-05-PS23

STRUCTURAL CALCULATIONS

August 23, 2024

Prepared by: Ian Kelly, EIT

Under Direction of: Jessica Meadows, SE



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FOUNDATION AND ANCHORAGE CALCULATIONS		
PERIMETER FENCE CALCULATIONS	6	THRU 8
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PROJECT DESIGN CRITERIA

PROJECT LOCATION:

Address: 1120 Walnut St.
San Luis Obispo, CA 93401

Latitude: N 35.2861°
Longitude: W 120.6628°

DESIGN CODES:

Notation	Code/ Standard Reference	Title
A	ASCE 7-16	Minimum Design Loads for Buildings and Other Structures
C	2022 CBC	2022 California Building Code
I	ACI 318-19	2019 Building Code Requirements for Structural Concrete
M	TMS 402/ 602-16	2016 Building Code Requirements and Specification for Masonry Structures
S	AISC 360-16	2016 Steel Construction Manual
W	2018 NDS	2018 National Design Specification for Wood Construction
SDP	2021 SDPWS	2021 Seismic Deisgn Provisions for Wind and Seismic (American Wood Council)

MATERIAL REFERENCES:

Notation	Material Reference	Title
B		Design of Wood Structures ASD/LRFD, Breyer, 6th Edition
T	TJ-4000	Weyerhaeuser Specifier's Guide

PROJECT DESCRIPTION:

The calculations herewith represent the following structures as described:

Fence Anchorage and Foundation
Configuration: Fence Post Anchorage and Foundation
Gravity System: N/A

Lateral System: N/A

Foundation System: Continous Concrete Footings Suppourting Walls and Deepend Footings for Posts and
Special Considerations: 25' Rolling Gate
Existing Wood and CMU Walls around the Perimeter

PROJECT DESIGN CRITERIA

GEOTECHNICAL PARAMETERS: CBC Ch. 18 Table 1806.2

Geotechnical Report:

Prepared by:	N/A	
Project No:	N/A	
Dated:	N/A	

Bearing Pressure:

Allowable Bearing Pressure:	1500	psf
Passive Earth Pressure:	100	psf/ft
Friction Coefficient:	0.25	
Friction + Passive:	100% Greater + 100% Lesser	

Retaining Walls:

Allowable Bearing Pressure:	N/A	psf
Passive Earth Pressure:	N/A	psf/ft
Friction Coefficient:	N/A	
Friction + Passive:	N/A	
Active Lateral Earth Pressure:	N/A	psf/ft for Level Backfill
Increase for Slope:	N/A	psf/ft per degree of incline
At Rest Lateral Earth Pressure:	N/A	psf/ft for Level Backfill
Increase for Slope:	N/A	psf/ft per degree of incline
Seismic Active Earth Pressure:	N/A	psf/ft for Level Backfill
Seismic At-Rest Earth Pressure:	N/A	psf/ft for Level Backfill

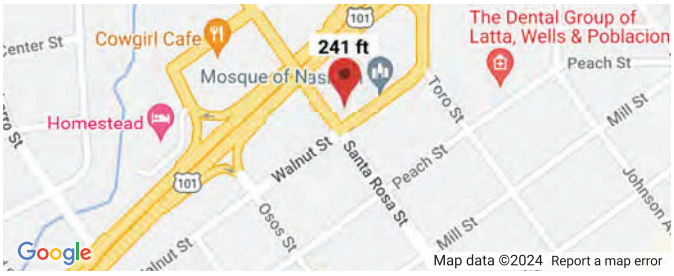
This is a beta release of the new ATC Hazards by Location website. Please contact us with feedback.

The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Hazards by Location

Search Information

Coordinates:	35.286176023013915, -120.66280248560875
Elevation:	241 ft
Timestamp:	2024-06-25T21:43:33.357Z
Hazard Type:	Seismic
Reference Document:	ASCE7-16
Risk Category:	IV
Site Class:	D-default



Basic Parameters

Name	Value	Description
S_S	1.064	MCE_R ground motion (period=0.2s)
S_1	0.392	MCE_R ground motion (period=1.0s)
S_{MS}	1.276	Site-modified spectral acceleration value
S_{M1}	* null	Site-modified spectral acceleration value
S_{DS}	0.851	Numeric seismic design value at 0.2s SA
S_{D1}	* null	Numeric seismic design value at 1.0s SA

* See Section 11.4.8

Additional Information

Name	Value	Description
SDC	* null	Seismic design category
F_a	1.2	Site amplification factor at 0.2s
F_v	* null	Site amplification factor at 1.0s
CR_S	0.899	Coefficient of risk (0.2s)
CR_1	0.902	Coefficient of risk (1.0s)
PGA	0.471	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.566	Site modified peak ground acceleration
T_L	8	Long-period transition period (s)
SsRT	1.064	Probabilistic risk-targeted ground motion (0.2s)
SsUH	1.184	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	2.142	Factored deterministic acceleration value (0.2s)
S1RT	0.392	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.435	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.753	Factored deterministic acceleration value (1.0s)
PGAd	0.879	Factored deterministic acceleration value (PGA)

* See Section 11.4.8

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

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Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Hazards by Location

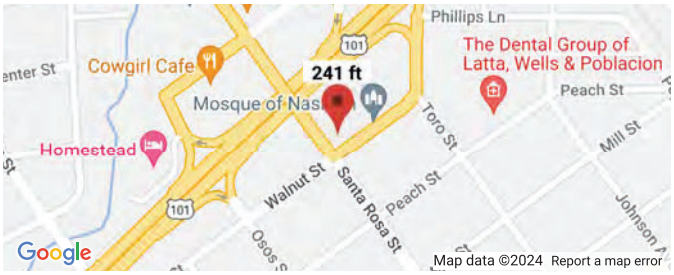
Search Information

Coordinates: 35.286176023013915, -120.66280248560875

Elevation: 241 ft

Timestamp: 2024-06-25T21:46:08.434Z

Hazard Type: Wind



ASCE 7-16

MRI 10-Year	64 mph
MRI 25-Year	70 mph
MRI 50-Year	74 mph
MRI 100-Year	78 mph
Risk Category I	86 mph
Risk Category II	91 mph
Risk Category III	98 mph
Risk Category IV	102 mph

ASCE 7-10

MRI 10-Year	72 mph
MRI 25-Year	79 mph
MRI 50-Year	85 mph
MRI 100-Year	91 mph
Risk Category I	100 mph
Risk Category II	110 mph
Risk Category III-IV	115 mph

ASCE 7-05

ASCE 7-05 Wind Speed	85 mph

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Disclaimer

Hazard loads are interpolated from data provided in ASCE 7 and rounded up to the nearest whole integer. Per ASCE 7, islands and coastal areas outside the last contour should use the last wind speed contour of the coastal area – in some cases, this website will extrapolate past the last wind speed contour and therefore, provide a wind speed that is slightly higher. NOTE: For queries near wind-borne debris region boundaries, the resulting determination is sensitive to rounding which may affect whether or not it is considered to be within a wind-borne debris region.

Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.

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rrm design group

SHEET NO.

PROJECT NO. 2504-05-PS23

DATE 08/2024

PROJECT SLO PD

BY IPK

SUBJECT 6' Perimeter Fence – Lateral Loads

CHECKED BY MSD

8 FT FENCE GATE

WIND LOAD

FOR VELOCITY PRESSURE ON OTHER STRUCTURES, USE ASCE 7-16 EQN (29.4-1);

$q_h = 0.00256(K_Z)(K_{Zt})(K_d)(K_e)(V^2)$ PER ASCE 7-16 EQN (26.10-1)

WHERE:

EXPOSURE LEVEL	:	C	
V = BASIC WIND SPEED (3s GUST, ULTIMATE)	:	102	mph
K_Z = VELOCITY PRESSURE COEFFICIENT PER ASCE 7-16 TABLE 26.10-1	:	0.85	
K_{Zt} = TOPOGRAPHIC FACTOR PER ASCE 7-16, SECTION 26.8.2	:	1.00	
K_d = WIND DIRECTIONALITY FACTOR PER ASCE 7-16 TABLE 26.6-1	:	0.85	
K_e = GROUND ELEVATION FACTOR PER ASCE 7-16 TABLE 26.9-1	:	1.00	

qh = 0.00256(0.85)(1)(0.85)(1)(102^2) = 19.22 psf

FOR WIND ON SOLID FREESTANDING WALL, USE ASCE 7-16 EQN (29.3-1);

$F_{WIND} = q_h(G)(C_f)(A_s)$

WHERE:

G = GUST EFFECT FACTOR PER ASCE 7-16, SECTION 26.11	:	0.85
Cf = NET FORCE COEFFICIENT PER ASCE 7-16, FIG 29.4-1	:	2.064

NOTE: ASSUMED MAXIMUM ASPECT RATIO, B/s = 10.0
REDUCTION FACTOR PER NOTE 4 OF 0.8 FOR s/h = 1.0.
ON TOTAL WALL, 1.85*(0.8) = 2.06

Fwind = 19.22(0.85)(2.064)(As) = 33.72 psf x As

Fwind @ STRENGTH = 33.7 psf x As
Fwind @ SERVICE = 20.2 psf x As

WIND GOVERNS

rrm design group

SHEET NO.

PROJECT NO. 2504-05-PS23

DATE 08/2024

PROJECT SLO PD

BY IPK

SUBJECT 6' Perimeter Fence – Lateral Loads

CHECKED BY MSD

8 FT FENCE GATE (CONT.)

SEISMIC LOAD

SEISMIC BASE SHEAR, $V_{SEIS} = C_S(W)$

WHERE:

C_S = SEISMIC RESPONSE COEFFICIENT PER ASCE 7-16 SECTION 12.8.1.1

W = EFFECTIVE SEISMIC WEIGHT : 5.0 psf

$$C_S = \frac{S_{DS}}{\left(\frac{R}{I_E}\right)}$$

WHERE:

S_{DS} = SEISMIC COEFFICIENT (SITE CLASS D) : 0.851

R = RESPONSE MODIFICATION FACTOR (TABLE 15.4-2) : 1.25

I_e = SEISMIC IMPORTANCE FACTOR : 1.0

WHERE:

S_1 = SEISMIC PARAMETER @ PERIOD = 1.0sec : 0.392

S_{D1} = SPECTRAL RESPONSE ACCELERATION @ PERIOD = 1.0sec : 0.7448

T = FUNDAMENTAL PERIOD (USE T_a PER ASCE 7-16 SECTION 12.8.2.1) : $C_t(h_n^x)$

C_t = APPROXIMATE PERIOD PARAMETER PER TABLE 12.8-2 : 0.02

x = APPROXIMATE PERIOD PARAMETER PER TABLE 12.8-2 : 0.75

h_n = HEIGHT IN FEET OF HIGHEST LEVEL OF STRUCTURE : 8.00 ft

THE VALUE OF C_S SHALL BOT BE LESS THAN 0.03

C_S =	0.681		← GOVERNS
C_{S_MAX} =	6.263	(Ta = 0.095 sec)	
C_{S_MIN} =	0.037		

Vseis = (0.681)(5 psf) = 3.4 psf

Vseis @ STRENGTH = 3.4 psf x As

Vseis @ SERVICE = 2.38 psf x As

rrm design group

SHEET NO.

PROJECT NO. 2504-05-PS23

DATE 08/2024

PROJECT SLO PD

BY IPK

SUBJECT 6' Perimeter Fence – Lateral Loads

CHECKED BY MSD

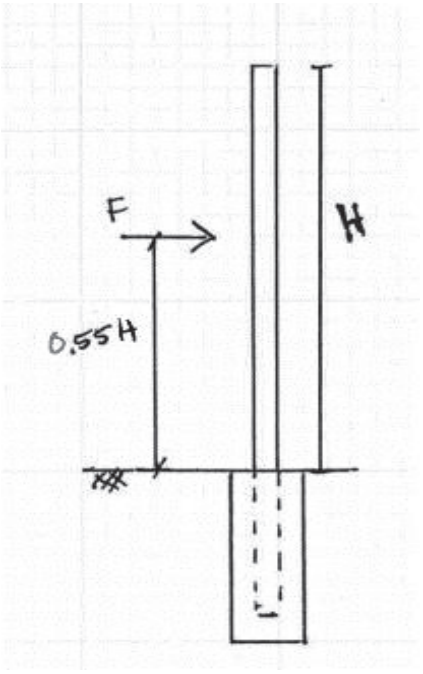
8 FT CE GATE (CONT.)

POLE FOOTING DESIGN

WIND GOVERNS
Fwind @ STRENGTH = 33.7 psf x As
Fwind @ SERVICE = 20.2 psf x As

MAX SPAN =	8	FT OC
H =	8	FT
0.55*H =	4.4	FT

As =	(8 FT) * (8 FT)	
Open Section =	0.5	50%
As =	32	FT^2
Fwind =	648	LBS @ 4.4 FT ABOVE GRADE



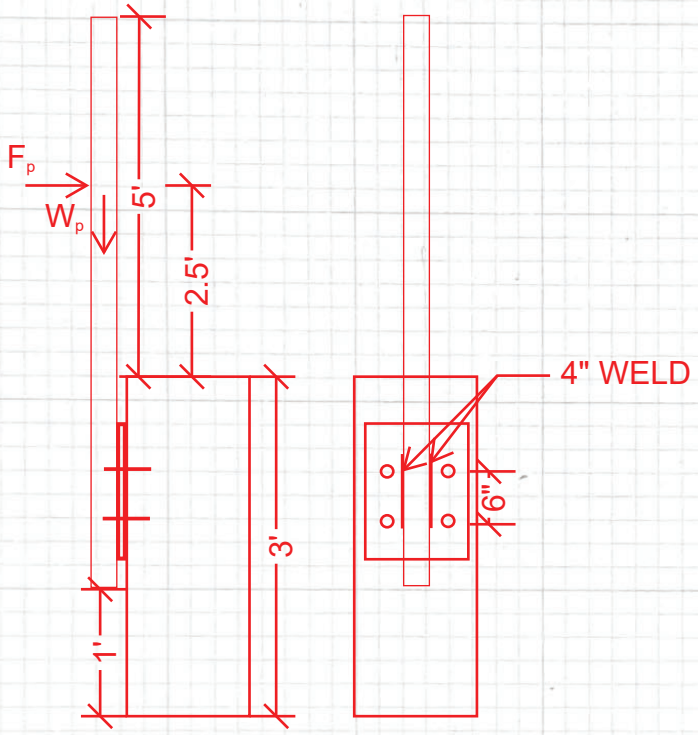
PROVIDE 1'-0" DIAMETER x 5'-0" DEEP POLE FOOTING AT 8' FENCE GATE.
SEE FOLLOWING PAGE FOR POLE FOOTING CALCULATIONS.

Project Name: SLO PD	**Date:** 06/24
Project #: 2504-05-PS23	**Scale:**
Participants:	
Topic/Subject: FENCE CONNECTION TO EXISTING WALL	

Fence Attachment to (E) CMU Wall

DETAIL 33/S-321

Scale: NTS



q = 33.7 psf *from spreadsheet*

As = 8ft x 5ft = 40ft^2

Open Section = 0.5 (50%)

As = 20ft^2

Fw = 404.4lbs

M2over = Fw x 30" = 12,132#-in

M2dead = 0.9 x 150 lbs. x 1" = 135 #-in

$Tw = \frac{12{,}132\ \#\text{-in} + 135\#\text{-in}}{6"} = 2044.5$ lbs / 2 anchors

Tw = 1022.3 lbs / anchor

Vw = 404.4 lbs / 2 anchors = 202.2 lbs / anchor

Load Amplification from 1500 psi CMU

Tw = 1022.25/0.866 = 1180.43 lbs / anchor

Vw = 202.2/0.866 = 233.5 lbs / anchor

USE SET-3G w/ 3/8" Ø F1554 Gr. 36 w/ 3" EMBED

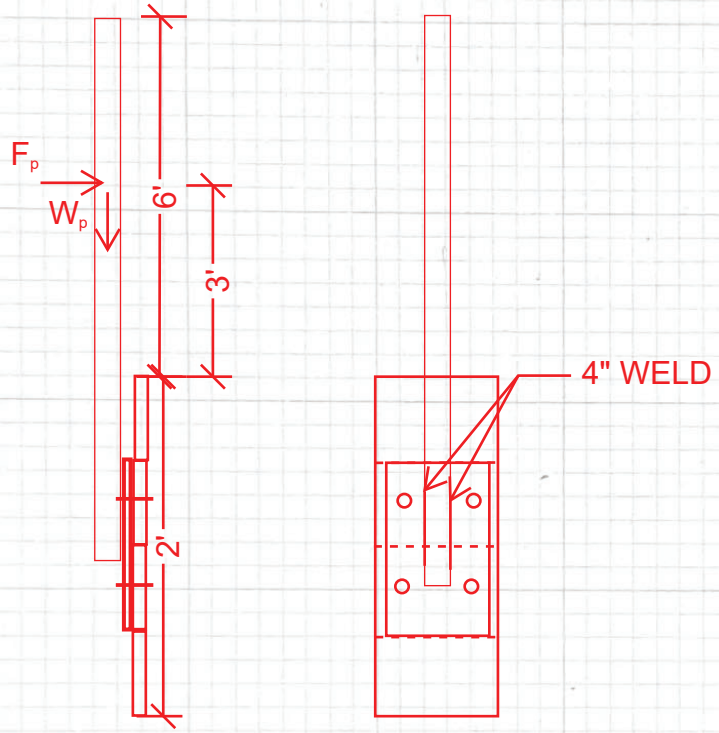
USE A36 PLATE 1'-3" x 0.75' x 0'-1/4"

Project Name: SLO PD	Date: 06/24
Project #: 2504-05-PS23	Scale:
Participants:	
Topic/Subject: FENCE CONNECTION TO EXISTING WALL	

Fence Attachment to (E) Wood Wall

DETAIL 43/S-321

Scale: NTS



q = 33.7 psf *from spreadsheet*

As = 8ft x 6ft = 48ft^2

Open Section = 0.5 (50%)

As = 24ft^2

Fw = 485.3lbs

M2over = Fw x 36" = 17,470.8#-in

M2dead = 0.9 x 150 lbs. x 1" = 135 #-in

$Tw = \frac{17,470.8\ \#\text{-in} + 135\#\text{-in}}{6"} = 3201$ lbs

Vw = 485.3 lbs / 2 anchors = 242.7 lbs / anchor

Z⊥' = 360 lbs * Cd = 360lbs(1.6) = 576 lbs (NDS 12B)

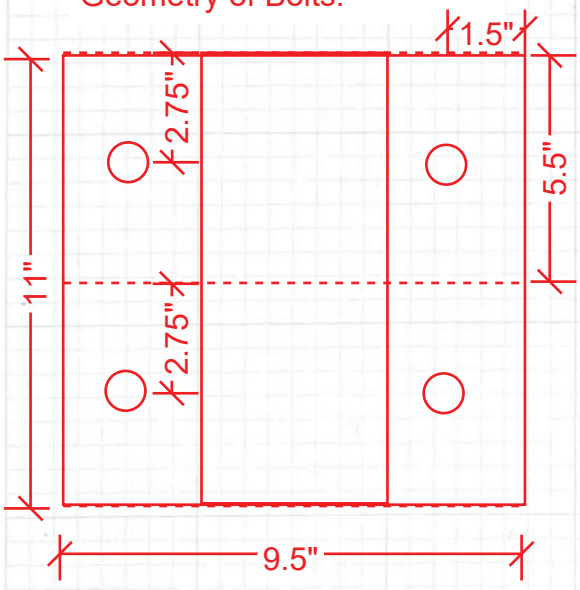
USE (4) 5/8" Ø x 1 1/2" BOLTS

CHECK PLATE FOR CRUSHING:

PER 2018 NDS CHAPTER 3.10:
Cb =1
F'c_PERP = 625 * 1 = 625 PSI
f'c = 3201 lbs / (104.5 SQ IN - 2 SQ IN) = 31.2 PSI < 625 PSI , OK

Use 0'-11" x 9.5" x 0'-1/4" A36 Steel Plate

Geometry of Bolts:



RRM Design Group
3765 S. Higuera Street
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805-597-5287

Project Title:
Engineer:
Project ID:
Project Descr:

Pole Footing Embedded in Soil

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: Post 1 Footing

Code References

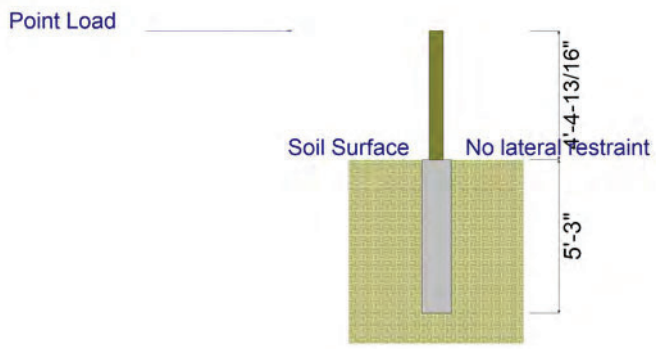
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2021

General Information

Pole Footing Shape	Circular
Pole Footing Diameter	12.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	200.0 pcf
Max Passive	1,500.0 psf

Controlling Values

Governing Load Combination	+0.60W
Lateral Load	0.3888 k
Moment	1.711 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	**341.947** psf
Allowable	**342.810** psf
Minimum Required Depth	**5.250 ft**
Footing Base Area	0.7854 ft^2
Maximum Soil Pressure	0.0 ksf



Applied Loads

Lateral Concentrated Load (k)		Lateral Distributed Loads (kl		Vertical Load (k)	
D : Dead Load	k		k/ft		k
Lr : Roof Live	k		k/ft		k
L : Live	k		k/ft		k
S : Snow	k		k/ft		k
W : Wind	0.6480 k		k/ft		k
E : Earthquake	k		k/ft		k
H : Lateral Earth	k		k/ft		k
Load distance above ground surface	4.40 ft	TOP of Load above ground surface	ft		
		BOTTOM of Load above ground surface	ft		

Load Combination Results

Load Combination	Forces @ Ground Surface Loads - (k)	Moments - (ft-k)	Required Depth - (ft)	Pressure at 1/3 Depth Actual - (psf)	Allow - (psf)	Soil Increase Factor
	0.000	0.000	0.13	0.0	0.0	1.000
+0.60W	0.389	1.711	5.25	341.9	342.8	1.000
+0.450W	0.292	1.283	4.63	304.2	305.9	1.000

Pole Footing Embedded in Soil

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: Rolling Gate Post

Code References

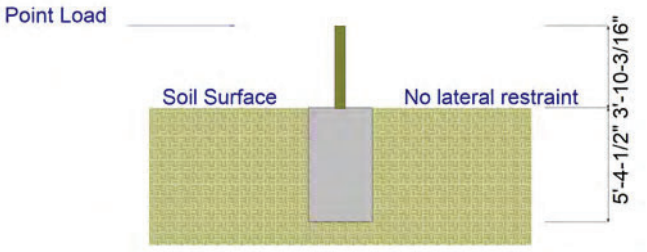
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2021

General Information

Pole Footing Shape	Circular
Pole Footing Diameter	36.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	200.0 pcf
Max Passive	1,500.0 psf

Controlling Values

Governing Load Combination	+D+0.60W
Lateral Load	1.359 k
Moment	5.232 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	**354.829** psf
Allowable	**355.773** psf
Minimum Required Depth	**5.375 ft**
Footing Base Area	7.069 ft^2
Maximum Soil Pressure	0.2122 ksf



Applied Loads

Lateral Concentrated Load (k)		Lateral Distributed Loads (kl		Vertical Load (k)	
D : Dead Load	k		k/ft	1.50	k
Lr : Roof Live	k		k/ft		k
L : Live	k		k/ft		k
S : Snow	k		k/ft		k
W : Wind	2.265 k		k/ft		k
E : Earthquake	k		k/ft		k
H : Lateral Earth	k		k/ft		k
Load distance above ground surface	3.850 ft	TOP of Load above ground surface	ft		
		BOTTOM of Load above ground surface	ft		

Load Combination Results

	Forces @ Ground Surface		Required	Pressure at 1/3 Depth		Soil Increase
Load Combination	Loads - (k)	Moments - (ft-k)	Depth - (ft)	Actual - (psf)	Allow - (psf)	Factor
D Only	0.000	0.000	0.13	0.0	0.0	1.000
+D+0.60W	1.359	5.232	5.38	354.8	355.8	1.000
+D+0.450W	1.019	3.924	4.75	315.7	316.4	1.000
+0.60D+0.60W	1.359	5.232	5.38	354.8	355.8	1.000
+0.60D	0.000	0.000	0.13	0.0	0.0	1.000

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Project Title:
Engineer:
Project ID:
Project Descr:

Pole Footing Embedded in Soil

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: Fence Gate Footing

Code References

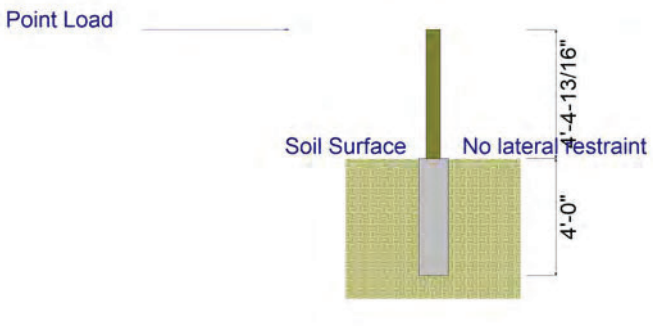
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2021

General Information

Pole Footing Shape	Circular
Pole Footing Diameter	12.0 in
Calculate Min. Depth for Allowable Pressures	
No Lateral Restraint at Ground Surface	
Allow Passive	200.0 pcf
Max Passive	1,500.0 psf

Controlling Values

Governing Load Combination	+0.60W
Lateral Load	0.2028 k
Moment	0.8923 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	**263.557** psf
Allowable	**264.915** psf
Minimum Required Depth	**4.0 ft**
Footing Base Area	0.7854 ft^2
Maximum Soil Pressure	0.0 ksf



Applied Loads

Lateral Concentrated Load (k)		Lateral Distributed Loads (kl		Vertical Load (k)	
D : Dead Load	k		k/ft		k
Lr : Roof Live	k		k/ft		k
L : Live	k		k/ft		k
S : Snow	k		k/ft		k
W : Wind	0.3380 k		k/ft		k
E : Earthquake	k		k/ft		k
H : Lateral Earth	k		k/ft		k
Load distance above ground surface	4.40 ft	TOP of Load above ground surface	ft		
		BOTTOM of Load above ground surface	ft		

Load Combination Results

Load Combination	Forces @ Ground Surface Loads - (k)	Moments - (ft-k)	Required Depth - (ft)	Pressure at 1/3 Depth Actual - (psf)	Allow - (psf)	Soil Increase Factor
	0.000	0.000	0.13	0.0	0.0	1.000
+0.60W	0.203	0.892	4.00	263.6	264.9	1.000
+0.450W	0.152	0.669	3.63	235.7	236.7	1.000

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Project Title:
Engineer:
Project ID:
Project Descr:

General Footing

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: CMU WALL FOOTING (Full Height),

Code References

Calculations per ACI 318-14, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2021

General Information

Material Properties

f'c : Concrete 28 day strength	=	3.0	ksi
fy : Rebar Yield	=	60.0	ksi
Ec : Concrete Elastic Modulus	=	3,155.92	ksi
Concrete Density	=	150.0	pcf
φ Values Flexure	=	0.90	
Shear	=	0.750	

Analysis Settings

Min Steel % Bending Reinf.	=	
Min Allow % Temp Reinf.	=	0.00180
Min. Overturning Safety Factor	=	1.150 : 1
Min. Sliding Safety Factor	=	1.150 : 1
Add Ftg Wt for Soil Pressure	:	Yes
Use ftg wt for stability, moments & shears	:	Yes
Add Pedestal Wt for Soil Pressure	:	No
Use Pedestal wt for stability, mom & shear	:	No

Soil Design Values

Allowable Soil Bearing	=	1.50	ksf
Soil Density	=	110.0	pcf
Increase Bearing By Footing Weight	=	No	
Soil Passive Resistance (for Sliding)	=	200.0	pcf
Soil/Concrete Friction Coeff.	=	0.30	

Increases based on footing Depth

Footing base depth below soil surface	=	2.0	ft
Allow press. increase per foot of depth	=		ksf
when footing base is below	=		ft

Increases based on footing plan dimension

Allowable pressure increase per foot of depth	=		ksf
when max. length or width is greater than	=		ft

Dimensions

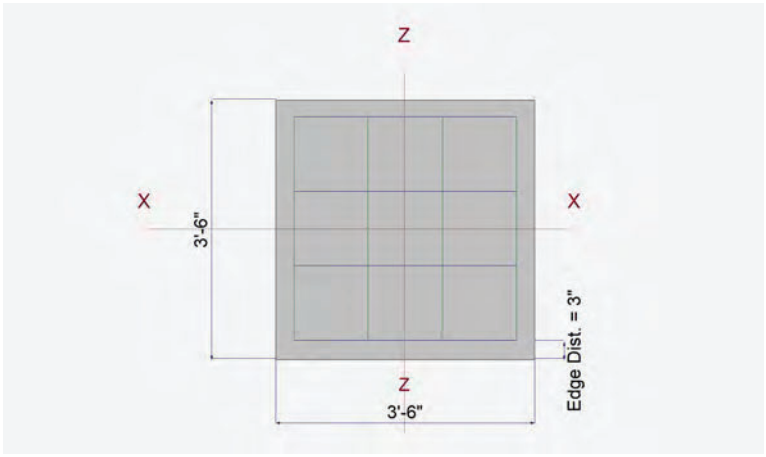
Width parallel to X-X Axis	=	3.50	ft
Length parallel to Z-Z Axis	=	3.50	ft
Footing Thickness	=	16.0	in

Pedestal dimensions...

px : parallel to X-X Axis	=		in
pz : parallel to Z-Z Axis	=		in
Height	=		in

Rebar Centerline to Edge of Concrete...

at Bottom of footing	=	3.0	in

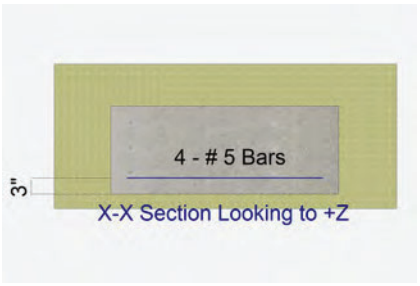


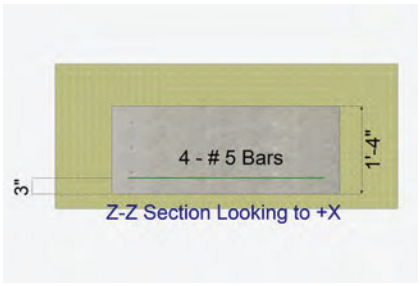
Reinforcing

Bars parallel to X-X Axis			
Number of Bars	=		4.0
Reinforcing Bar Size	=	#	5
Bars parallel to Z-Z Axis			
Number of Bars	=		4.0
Reinforcing Bar Size	=	#	5

Bandwidth Distribution Check (ACI 15.4.4.2)

Direction Requiring Closer Separation	n/a
# Bars required within zone	n/a
# Bars required on each side of zone	n/a





Applied Loads

		D	Lr	L	S	W	E	H	
P : Column Load	=	1.408							k
OB : Overburden	=								ksf
M-xx	=								k-ft
M-zz	=					2.696	3.836		k-ft
V-x	=								k
V-z	=								k

General Footing

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: CMU WALL FOOTING (Full Height),

DESIGN SUMMARY

Design OK

	Min. Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.5069	Soil Bearing	0.7603 ksf	1.50 ksf	+D+0.70E about Z-Z axis
PASS	n/a	Overturning - X-X	0.0 k-ft	0.0 k-ft	No Overturning
PASS	1.860	Overturning - Z-Z	2.685 k-ft	4.994 k-ft	+0.60D+0.70E
PASS	n/a	Sliding - X-X	0.0 k	0.0 k	No Sliding
PASS	n/a	Sliding - Z-Z	0.0 k	0.0 k	No Sliding
PASS	n/a	Uplift	0.0 k	0.0 k	No Uplift
PASS	0.03785	Z Flexure (+X)	0.7635 k-ft/ft	20.172 k-ft/ft	+1.20D+E
PASS	0.01703	Z Flexure (-X)	0.3434 k-ft/ft	20.172 k-ft/ft	+0.90D+E
PASS	0.01222	X Flexure (+Z)	0.2464 k-ft/ft	20.172 k-ft/ft	+1.40D
PASS	0.01222	X Flexure (-Z)	0.2464 k-ft/ft	20.172 k-ft/ft	+1.40D
PASS	0.03035	1-way Shear (+X)	2.494 psi	82.158 psi	+0.90D+E
PASS	0.01509	1-way Shear (-X)	1.239 psi	82.158 psi	+1.20D+E
PASS	0.008349	1-way Shear (+Z)	0.6859 psi	82.158 psi	+1.40D
PASS	0.008349	1-way Shear (-Z)	0.6859 psi	82.158 psi	+1.40D
PASS	0.01615	2-way Punching	2.654 psi	164.317 psi	+1.40D

Top reinforcing mat required (see 'Bending' tab).

Hand check required for anchor pullout.

Detailed Results

Soil Bearing

Rotation Axis & Load Combination...	Gross Allowable	Xecc (in)	Zecc (in)	Actual Soil Bearing Stress @ Location Bottom, -Z	Top, +Z	Left, -X	Right, +X	Actual / Allow Ratio
X-X, D Only	1.50	n/a	0.0	0.3883	0.3883	n/a	n/a	0.259
X-X, +D+0.60W	1.50	n/a	0.0	0.3883	0.3883	n/a	n/a	0.259
X-X, +D+0.70E	1.50	n/a	0.0	0.3883	0.3883	n/a	n/a	0.259
X-X, +D+0.450W	1.50	n/a	0.0	0.3883	0.3883	n/a	n/a	0.259
X-X, +D+0.5250E	1.50	n/a	0.0	0.3883	0.3883	n/a	n/a	0.259
X-X, +0.60D+0.60W	1.50	n/a	0.0	0.2330	0.2330	n/a	n/a	0.155
X-X, +0.60D+0.70E	1.50	n/a	0.0	0.2330	0.2330	n/a	n/a	0.155
Z-Z, D Only	1.50	0.0	n/a	n/a	n/a	0.3883	0.3883	0.259
Z-Z, +D+0.60W	1.50	4.081	n/a	n/a	n/a	0.1642	0.6124	0.408
Z-Z, +D+0.70E	1.50	6.775	n/a	n/a	n/a	0.01626	0.7603	0.507
Z-Z, +D+0.450W	1.50	3.061	n/a	n/a	n/a	0.2202	0.5564	0.371
Z-Z, +D+0.5250E	1.50	5.081	n/a	n/a	n/a	0.1093	0.6673	0.445
Z-Z, +0.60D+0.60W	1.50	6.802	n/a	n/a	n/a	0.008857	0.4571	0.305
Z-Z, +0.60D+0.70E	1.50	11.291	n/a	n/a	n/a	0.0	0.6670	0.445

Overturning Stability

Rotation Axis & Load Combination...	Overturning Moment	Resisting Moment	Stability Ratio	Status
X-X, D Only	None	0.0 k-ft	Infinity	OK
X-X, +D+0.60W	None	0.0 k-ft	Infinity	OK
X-X, +D+0.70E	None	0.0 k-ft	Infinity	OK
X-X, +D+0.450W	None	0.0 k-ft	Infinity	OK
X-X, +D+0.5250E	None	0.0 k-ft	Infinity	OK
X-X, +0.60D+0.60W	None	0.0 k-ft	Infinity	OK
X-X, +0.60D+0.70E	None	0.0 k-ft	Infinity	OK
Z-Z, D Only	None	0.0 k-ft	Infinity	OK
Z-Z, +D+0.60W	1.618 k-ft	8.324 k-ft	5.146	OK
Z-Z, +D+0.70E	2.685 k-ft	8.324 k-ft	3.10	OK
Z-Z, +D+0.450W	1.213 k-ft	8.324 k-ft	6.861	OK
Z-Z, +D+0.5250E	2.014 k-ft	8.324 k-ft	4.133	OK
Z-Z, +0.60D+0.60W	1.618 k-ft	4.994 k-ft	3.087	OK
Z-Z, +0.60D+0.70E	2.685 k-ft	4.994 k-ft	1.860	OK

General Footing

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: CMU WALL FOOTING (Full Height),

All units k

Sliding Stability

Force Application Axis Load Combination...	Sliding Force	Resisting Force	Stability Ratio	Status
Footing Has NO Sliding				

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Side	Tension Surface	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
X-X, +1.40D	0.2464	+Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +1.40D	0.2464	-Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +1.20D	0.2112	+Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +1.20D	0.2112	-Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +1.20D+0.50W	0.2112	+Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +1.20D+0.50W	0.2112	-Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +1.20D+W	0.2112	+Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +1.20D+W	0.2112	-Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +1.20D+E	0.2112	+Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +1.20D+E	0.2112	-Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +0.90D+W	0.1584	+Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +0.90D+W	0.1584	-Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +0.90D+E	0.1584	+Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
X-X, +0.90D+E	0.1584	-Z	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +1.40D	0.2464	-X	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +1.40D	0.2464	+X	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +1.20D	0.2112	-X	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +1.20D	0.2112	+X	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +1.20D+0.50W	0.01865	-X	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +1.20D+0.50W	0.4038	+X	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +1.20D+W	0.1739	-X	Top	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +1.20D+W	0.5963	+X	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +1.20D+E	0.3325	-X	Top	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +1.20D+E	0.7635	+X	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +0.90D+W	0.2258	-X	Top	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +0.90D+W	0.5444	+X	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +0.90D+E	0.3434	-X	Top	0.3456	ACI 7.6.1.1	0.3543	20.172	OK
Z-Z, +0.90D+E	0.7525	+X	Bottom	0.3456	ACI 7.6.1.1	0.3543	20.172	OK

One Way Shear X

Load Combination...	Vu @ -X	Vu @ +X	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+1.40D	0.69 psi	0.69 psi	0.69 psi	82.16 psi	0.01	OK
+1.20D	0.59 psi	0.59 psi	0.59 psi	82.16 psi	0.01	OK
+1.20D+0.50W	0.06 psi	1.24 psi	1.24 psi	82.16 psi	0.02	OK
+1.20D+W	0.71 psi	1.89 psi	1.89 psi	82.16 psi	0.02	OK
+1.20D+E	1.24 psi	2.46 psi	2.46 psi	82.16 psi	0.03	OK
+0.90D+W	0.86 psi	1.75 psi	1.75 psi	82.16 psi	0.02	OK
+0.90D+E	1.05 psi	2.49 psi	2.49 psi	82.16 psi	0.03	OK

One Way Shear Z

Load Combination...	Vu @ -Z	Vu @ +Z	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+1.40D	0.69 psi	0.69 psi	0.69 psi	82.16 psi	0.01	OK
+1.20D	0.59 psi	0.59 psi	0.59 psi	82.16 psi	0.01	OK
+1.20D+0.50W	0.59 psi	0.59 psi	1.24 psi	82.16 psi	0.02	OK
+1.20D+W	0.59 psi	0.59 psi	1.89 psi	82.16 psi	0.02	OK
+1.20D+E	0.59 psi	0.59 psi	2.46 psi	82.16 psi	0.03	OK
+0.90D+W	0.44 psi	0.44 psi	1.75 psi	82.16 psi	0.02	OK
+0.90D+E	0.44 psi	0.44 psi	2.49 psi	82.16 psi	0.03	OK

Two-Way "Punching" Shear

All units k

Load Combination...	Vu	Phi*Vn	Vu / Phi*Vn	Status
+1.40D	2.65 psi	164.32 psi	0.01615	OK
+1.20D	2.27 psi	164.32 psi	0.01384	OK
+1.20D+0.50W	2.27 psi	164.32 psi	0.01384	OK
+1.20D+W	2.27 psi	164.32 psi	0.01384	OK
+1.20D+E	2.28 psi	164.32 psi	0.01387	OK
+0.90D+W	1.71 psi	164.32 psi	0.01039	OK

General Footing

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: CMU WALL FOOTING (Full Height),

Two-Way "Punching" Shear

All units k

Load Combination...	Vu	Phi*Vn	Vu / Phi*Vn	Status
+0.90D+E	1.78 psi	164.32 psi	0.01085	OK

Masonry Column

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: CMU Pilaster

Code References

Calculations per TMS 402-16, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2021

General Information

Material Properties

F'm	=	2,000.0 psi
Fr - Rupture	=	61.0 psi
Em = f'm *	=	900.0
Column Density	=	1.0 pcf
Rebar Grade	=	Grade 60
Fy - Yield	=	60000 psi
Fs - Allowable	=	32000 psi
E - Rebar	=	29,000.0 ksi

Column Data

Column width along X-X	=	15.625 in
Column depth along Y-Y	=	15.625 in
Longitudinal Bar Size	=	# 5.0
Bars per side at +Y & -Y	=	2
Bars per side at +X & -X	=	2
Cover from ties	=	3.0 in
Actual Edge to Bar Cente	=	3.6875 in

Analysis Settings

Analysis Method	=	**Strength Design**
φ factor for Strength Design	=	0.90
End Fixity Condition	=	Top Free, Bottom Fixed
Overall Column Height	=	9.333 ft
Construction Type		Solid Grouted Hollow Concrete Masor
Tie Bar Size	=	# 3
Tie Bar Spacing	=	8.0 in

Brace condition for deflection (buckling) along columns :

X-X (width) axis : Unbraced Length for buckling ABOUT Y-Y Axis = 9.333 ft, K
Y-Y (depth) axis : Unbraced Length for buckling ABOUT X-X Axis = 9.333 ft, K

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Column self weight included : 15.823 lbs * Dead Load Factor
AXIAL LOADS . . .
BENDING LOADS . . .
Lat. Uniform Load creating Mx-x, W = 0.03370 k/ft
Lat. Point Load at 4.0 ft creating Mx-x, W = 0.5180 k
Lat. Point Load at 4.0 ft creating Mx-x, E = 2.740 k

DESIGN SUMMARY

Bending Check Results

PASS **Maximum Bending Stress Ratio =** **0.305** : 1
Load Combination +1.20D+E
Location of max.above base 0.000 ft
At maximum location values are . . .
Pu 0.019 k
0.9 * Pn 0.316 k
Mu-x -10.960 k-ft
0.9 * Mn-x : 35.928 k-ft

PASS **Reinforcing Area Check** *(TMS 402-16, Sec 5.3.1.3)*
As : Actual Reinforcement 1.240
Min: 0.0025 * An 0.610
Max: 0.04 * An 9.766

Dimensional Checks
Min. Side Dim. >= 8" *(TMS 402-16, Sec. 5.3.1.1(b))*
PASS Governing K * Lu / Dimension <= 3 *(TMS 402-16, Sec. 5.3.1.1(a))*

Maximum SERVICE Load Reactions . .
Top along X-X 0.000 k
Bottom along X-X 2.740 k

Maximum SERVICE Load Deflections . . .
Along x-x 0.034 in at 9.333 ft above base
for load combination : E Only

Compressive Strength 287.247 k *(TMS 402-16, Sec. 9.3.4.1.1)*
Pa = 0.80 [0.80 f'm (An - Ast) + FyAst) * [1-(h/(140*r))^2]

PASS **Check Column Ties** *(TMS 402-16, Sec 5.3.1.4)*
Min. Tie Dia. = 1/4", # 3 bar provided
Max Tie Spacing = 10.00 in, Provided = 8.00 in

Rx 4.511
Ry 4.511

Load Combination Results

Load Combination	Maximum Bending Stress Ratios Stress Ratio	Status	Location	Maximum Axial Load Actual	Allow	Maximum Moments Actual	Allow
+1.40D	.0000760	PASS	0.06264 ft	0.02215 k	287.118 k	0.0 k-ft	53.715 k-ft
+1.20D	.0000650	PASS	0.0 ft	0.01899 k	287.118 k	0.0 k-ft	53.715 k-ft
+1.20D+0.50W	0.0490	PASS	0.0 ft	0.01899 k	0.7195 k	1.770 k-ft	36.115 k-ft
+1.20D+W	0.09852	PASS	0.0 ft	0.01899 k	0.3160 k	3.540 k-ft	35.928 k-ft
+1.20D+E	0.3050	PASS	0.0 ft	0.01899 k	0.3160 k	10.960 k-ft	35.928 k-ft
+0.90D+W	0.09852	PASS	0.0 ft	0.01424 k	0.3160 k	3.540 k-ft	35.928 k-ft
+0.90D+E	0.3050	PASS	0.0 ft	0.01424 k	0.3160 k	10.960 k-ft	35.928 k-ft

Masonry Column

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: CMU Pilaster

Maximum Reactions

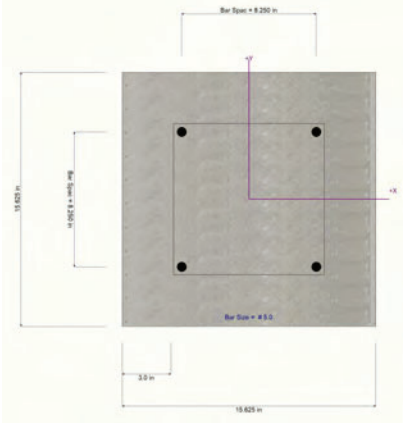
Note: Only non-zero reactions are listed.

Load Combination	Y-Y Axis Reaction @ Base	@ Top	Axial Reaction @ Base
D Only	k	k	0.016 k
+D+0.60W	0.500 k	k	0.016 k
+D+0.70E	1.918 k	k	0.016 k
+D+0.450W	0.375 k	k	0.016 k
+D+0.5250E	1.439 k	k	0.016 k
+0.60D+0.60W	0.500 k	k	0.009 k
+0.60D+0.70E	1.918 k	k	0.009 k
W Only	0.833 k	k	k
E Only	2.740 k	k	k

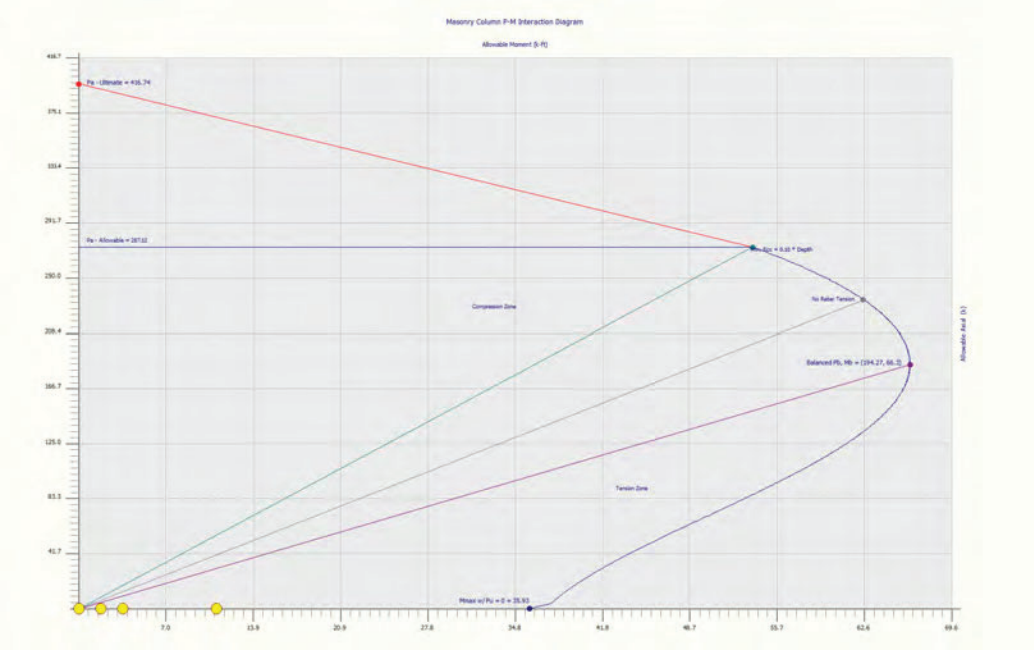
Maximum Deflections for Load Combinations

Load Combination	Max. Y-Y Deflection	Distance
D Only	0.0000 in	0.000 ft
+D+0.60W	0.0075 in	9.333 ft
+D+0.70E	0.0236 in	9.333 ft
+D+0.450W	0.0056 in	9.333 ft
+D+0.5250E	0.0177 in	9.333 ft
+0.60D+0.60W	0.0075 in	9.333 ft
+0.60D+0.70E	0.0236 in	9.333 ft
W Only	0.0125 in	9.333 ft
E Only	0.0335 in	9.270 ft

Cross Section



Interaction Diagram



RRM Design Group
3765 S. Higuera Street
Suite 102
San Luis Obispo, CA 93405
805-597-5287

Project Title:
Engineer:
Project ID:
Project Descr:

Cantilevered Retaining Wall

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: Freestanding 3' Wall (Wind)

Code Reference

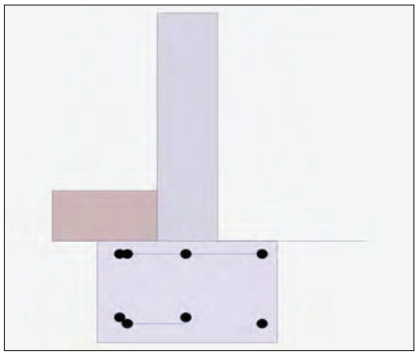
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16

Criteria

Retained Height	=	0.00 ft
Wall height above soil	=	3.00 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	8.00 in
Water table above bottom of footing	=	0.0 ft

Soil Data

Allow Soil Bearing	=	1,500.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	35.0 psf/ft
	=	
Passive Pressure	=	250.0 psf/ft
Soil Density, Heel	=	110.00 pcf
Soil Density, Toe	=	110.00 pcf
Footing||Soil Friction	=	0.400
Soil height to ignore for passive pressure	=	12.00 in



Surcharge Loads

Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Seismic (E) (Service Level)
Wind on Exposed Stem (Strength Level)	=	33.7 psf

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Spread Footing
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Stem Weight Seismic Load

F_p / W_p Weight Multiplier = 0.000 g

Added seismic base force 0.0 lbs

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Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: Freestanding 3' Wall (Wind)

Design Summary

Wall Stability Ratios

Overturning	=	3.60	OK
Sliding	=	7.14	OK
Global Stability	=	9.37	

Total Bearing Load	=	701	lbs	
...resultant ecc.	=	3.74	in	
Eccentricity within middle third				
Soil Pressure @ Toe	=	678	psf	OK
Soil Pressure @ Heel	=	23	psf	OK
Allowable	=	1,500	psf	
Soil Pressure Less Than Allowable				
ACI Factored @ Toe	=	949	psf	
ACI Factored @ Heel	=	32	psf	
Footing Shear @ Toe	=	2.0	psi	OK
Footing Shear @ Heel	=	0.2	psi	OK
Allowable	=	82.2	psi	

Sliding Calcs

Lateral Sliding Force	=	91.8	lbs	
less 100% Passive Force	-	375.0	lbs	
less 100% Friction Force	-	280.4	lbs	
Added Force Req'd	=	0.0	lbs	OK
....for 1.5 Stability	=	0.0	lbs	OK

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing pressures.

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

		Bottom		
		Stem OK		
Design Height Above Ftg	ft =	0.00		
Wall Material Above "Ht"	=	Masonry		
Design Method	=	SD	SD	SD
Thickness	=	8.00		
Rebar Size	=	# 5		
Rebar Spacing	=	16.00		
Rebar Placed at	=	Center		
Design Data				
fb/FB + fa/Fa	=	**0.068**		
Total Force @ Section				
Service Level	lbs =			
Strength Level	lbs =	161.8		
Moment....Actual				
Service Level	ft-# =			
Strength Level	ft-# =	242.6		
Moment.....Allowable	=	3,566.5		
Shear.....Actual				
Service Level	psi =			
Strength Level	psi =	1.8		
Shear.....Allowable	psi =	80.5		
Anet (Masonry)	in2 =	91.50		
Wall Weight	psf =	84.0		
Rebar Depth 'd'	in =	3.81		

Masonry Data

f'm	psi =	2,000
Fy	psi =	60,000
Solid Grouting	=	Yes
Modular Ratio 'n'	=	16.11
Equiv. Solid Thick.	in =	7.63
Masonry Block Type	=	
Masonry Design Method	=	SD

Concrete Data

f'c	psi =
Fy	psi =

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Cantilevered Retaining Wall

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: Freestanding 3' Wall (Wind)

Footing Data

Toe Width	=	0.67 ft
Heel Width	=	1.33
Total Footing Width	=	2.00
Footing Thickness	=	16.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.00 ft

f'c = 3,000 psi Fy = 60,000 psi
Footing Concrete Density = 150.00 pcf
Min. As % = 0.0018
Cover @ Top 2.00 @ Btm.= 3.00 in

Footing Design Results

		Toe		Heel	
Factored Pressure	=	949		32	psf
Mu' : Upward	=	188		30	ft-#
Mu' : Downward	=	109		80	ft-#
Mu: Design	=	79	OK	50 ft-#	OK
phiMn	=	19,302		20,869	ft-#
Actual 1-Way Shear	=	1.95		0.23	psi
Allow 1-Way Shear	=	82.16		82.16	psi
Toe Reinforcing	=	# 4 @ 6.94 in			
Heel Reinforcing	=	# 4 @ 6.94 in			
Key Reinforcing	=	None Spec'd			
Footing Torsion, Tu	=			0.00	ft-lbs
Footing Allow. Torsion, phi Tu	=			0.00	ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe: #4@ 6.94 in, #5@ 10.76 in, #6@ 15.27 in, #7@ 20.83 in, #8@ 27.43 in, #9@ 34.72 in, #10@ 44.09 in

Heel: #4@ 6.94 in, #5@ 10.76 in, #6@ 15.27 in, #7@ 20.83 in, #8@ 27.43 in, #9@ 34.72 in, #10@ 44.09 in

Key: No key defined

Min footing T&S reinf Area	0.69	in2
Min footing T&S reinf Area per foot	0.35	in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 6.94 in	#4@ 13.89 in
#5@ 10.76 in	#5@ 21.53 in
#6@ 15.28 in	#6@ 30.56 in

Cantilevered Retaining Wall

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: Freestanding 3' Wall (Wind)

Summary of Overturning & Resisting Forces & Moments

Item	.....OVERTURNING..... Force lbs	Distance ft	Moment ft-#	.....RESISTING..... Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)	31.1	0.44	13.8			
HL Act Pres (be water tbl)						
Hydrostatic Force						
Buoyant Force =						
Surcharge over Heel =						
Surcharge Over Toe =						
Adjacent Footing Load =						
Added Lateral Load =						
Load @ Stem Above Soil =	60.7	2.83	171.9			
=						
Seismic Stem Self Wt						
Soil Over HL (ab. water tbl)				0.0	1.67	0.0
Soil Over HL (bel. water tbl)					1.67	0.0
Water Table						
Sloped Soil Over Heel =						
Surcharge Over Heel =						
Adjacent Footing Load =						
Axial Dead Load on Stem =						
* Axial Live Load on Stem =						
Soil Over Toe =				48.9	0.33	16.3
Surcharge Over Toe =						
Stem Weight(s) =				252.0	1.00	252.1
Earth @ Stem Transitions =						
Footing Weight =				400.0	1.00	400.0
Key Weight =						
Vert. Component =						
Total =	91.8	**O.T.M.** =	185.7	**Total =** 700.9 lbs	**R.M.=**	668.4

Resisting/Overturning Ratio = **3.60**
Vertical Loads used for Soil Pressure = 700.9 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

If seismic is included, the OTM and sliding ratios may be 1.1 per section 1807.2.3 of IBC.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus	250.0	pci
Horizontal Defl @ Top of Wall (approximate only)	0.028	in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

DESCRIPTION: Freestanding 3' Wall (Wind)

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom

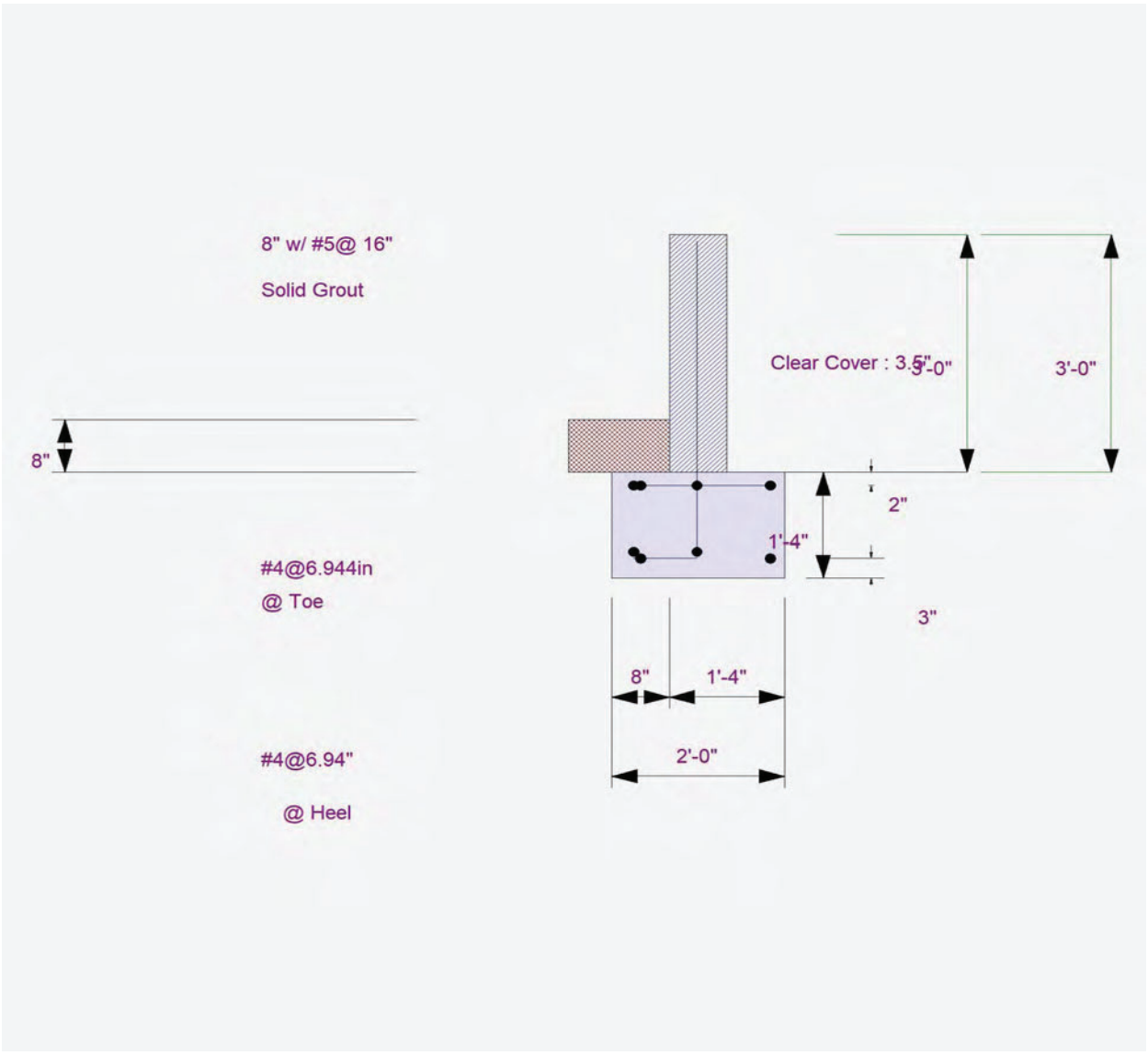
Stem Design Height: 0.00 ft above top of footing

K_cover=7.3125, K_spacing=16, K_diam=5.625, and K_min=5.625

Lap Splice length for #5 bar specified in this stem design segment (25.4.2.3a) =	25.00 in
Development length for #5 bar specified in this stem design segment =	12.11 in
Hooked embedment length into footing for #5 bar specified in this stem design segment =	9.59 in
As Provided =	0.2325 in2/ft
As Required =	0.0149 in2/ft

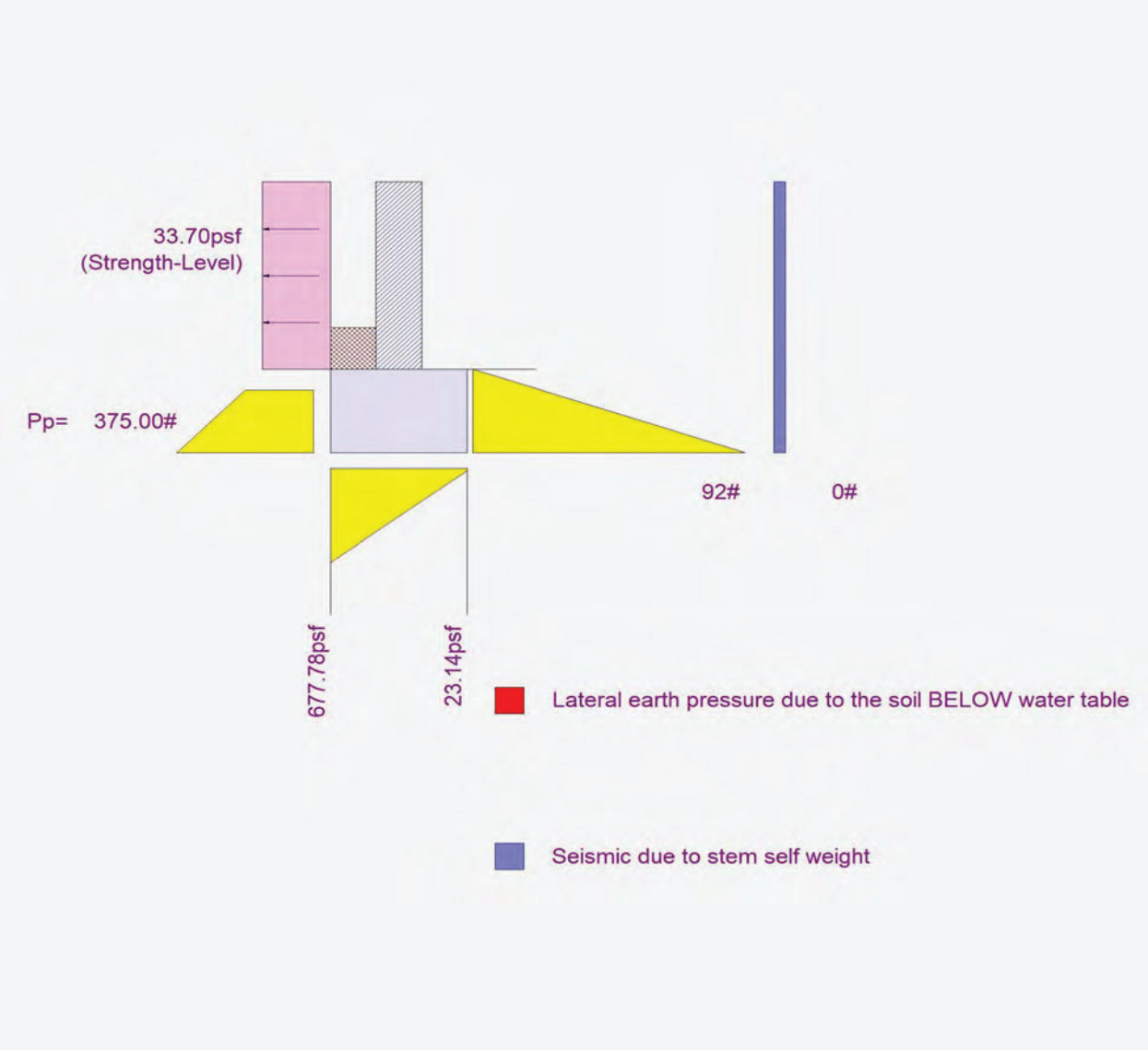
Cantilevered Retaining Wall

DESCRIPTION: Freestanding 3' Wall (Wind)



Cantilevered Retaining Wall

DESCRIPTION: Freestanding 3' Wall (Wind)



RRM Design Group
3765 S. Higuera Street
Suite 102
San Luis Obispo, CA 93405
805-597-5287

Project Title:
Engineer:
Project ID:
Project Descr:

Cantilevered Retaining Wall

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: Freestanding 3' Wall (Seismic)

Code Reference

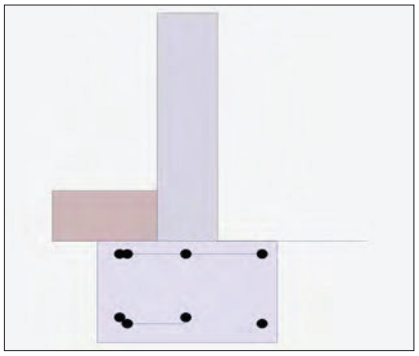
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16

Criteria

Retained Height	=	0.00 ft
Wall height above soil	=	3.00 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	8.00 in
Water table above bottom of footing	=	0.0 ft

Soil Data

Allow Soil Bearing	=	1,500.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	35.0 psf/ft
	=	
Passive Pressure	=	250.0 psf/ft
Soil Density, Heel	=	110.00 pcf
Soil Density, Toe	=	110.00 pcf
Footing||Soil Friction	=	0.400
Soil height to ignore for passive pressure	=	12.00 in



Surcharge Loads

Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Seismic (E) (Service Level)
Wind on Exposed Stem (Strength Level)	=	0.0 psf

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Spread Footing
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Stem Weight Seismic Load

F_p / W_p Weight Multiplier = 0.681 g

Added seismic base force 120.1 lbs

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LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: Freestanding 3' Wall (Seismic)

Design Summary

Wall Stability Ratios

Overturning	=	1.89	OK
Sliding	=	4.33	OK
Global Stability	=	9.37	

Total Bearing Load	=	701 lbs	
...resultant ecc.	=	6.62 in	
Eccentricity outside middle third			
Soil Pressure @ Toe	=	1,042 psf	OK
Soil Pressure @ Heel	=	0 psf	OK
Allowable	=	1,500 psf	
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	1,459 psf	
ACI Factored @ Heel	=	0 psf	
Footing Shear @ Toe	=	3.3 psi	OK
Footing Shear @ Heel	=	1.0 psi	OK
Allowable	=	82.2 psi	

Sliding Calcs

Lateral Sliding Force	=	151.2 lbs	
less 100% Passive Force	-	375.0 lbs	
less 100% Friction Force	-	280.4 lbs	
Added Force Req'd	=	0.0 lbs	OK
....for 1.5 Stability	=	0.0 lbs	OK

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing pressures.

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

		Bottom		
		Stem OK		
Design Height Above Ftg	ft =	0.00		
Wall Material Above "Ht"	=	Masonry		
Design Method	=	SD	SD	SD
Thickness	=	8.00		
Rebar Size	=	# 5		
Rebar Spacing	=	16.00		
Rebar Placed at	=	Center		
Design Data				
fb/FB + fa/Fa	=	**0.072**		
Total Force @ Section				
Service Level	lbs =			
Strength Level	lbs =	171.6		
Moment....Actual				
Service Level	ft-# =			
Strength Level	ft-# =	257.4		
Moment.....Allowable	=	3,566.5		
Shear.....Actual				
Service Level	psi =			
Strength Level	psi =	1.9		
Shear.....Allowable	psi =	80.5		
Anet (Masonry)	in2 =	91.50		
Wall Weight	psf =	84.0		
Rebar Depth 'd'	in =	3.81		

Masonry Data

f'm	psi =	2,000
Fy	psi =	60,000
Solid Grouting	=	Yes
Modular Ratio 'n'	=	16.11
Equiv. Solid Thick.	in =	7.63
Masonry Block Type	=	
Masonry Design Method	=	SD

Concrete Data

f'c	psi =
Fy	psi =

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Project Descr:

Cantilevered Retaining Wall

Project File: post 1 footing.ec6

LIC# : KW-06017541, Build:20.23.12.07 RRM Design Group (c) ENERCALC INC 1983-2023

DESCRIPTION: Freestanding 3' Wall (Seismic)

Footing Data

Toe Width	=	0.67 ft
Heel Width	=	1.33
Total Footing Width	=	2.00
Footing Thickness	=	16.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.00 ft

f'c = 3,000 psi Fy = 60,000 psi
Footing Concrete Density = 150.00 pcf
Min. As % = 0.0018
Cover @ Top 2.00 @ Btm.= 3.00 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	1,459	0	psf
Mu' : Upward	=	271	0	ft-#
Mu' : Downward	=	109	80	ft-#
Mu: Design	=	162 OK	80	ft-# OK
phiMn	=	19,302	20,869	ft-#
Actual 1-Way Shear	=	3.29	0.99	psi
Allow 1-Way Shear	=	82.16	82.16	psi
Toe Reinforcing	=	# 4 @ 6.94 in		
Heel Reinforcing	=	# 4 @ 6.94 in		
Key Reinforcing	=	None Spec'd		
Footing Torsion, Tu	=		0.00	ft-lbs
Footing Allow. Torsion, phi Tu	=		0.00	ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe: #4@ 6.94 in, #5@ 10.76 in, #6@ 15.27 in, #7@ 20.83 in, #8@ 27.43 in, #9@ 34.72 in, #10@ 44.09 in

Heel: #4@ 6.94 in, #5@ 10.76 in, #6@ 15.27 in, #7@ 20.83 in, #8@ 27.43 in, #9@ 34.72 in, #10@ 44.09 in

Key: No key defined

Min footing T&S reinf Area 0.69 in2
Min footing T&S reinf Area per foot 0.35 in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 6.94 in	#4@ 13.89 in
#5@ 10.76 in	#5@ 21.53 in
#6@ 15.28 in	#6@ 30.56 in

Cantilevered Retaining Wall

DESCRIPTION: Freestanding 3' Wall (Seismic)

Summary of Overturning & Resisting Forces & Moments

Item		.....OVERTURNING..... Force lbs	Distance ft	Moment ft-#		.....RESISTING..... Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)		31.1	0.44	13.8	Soil Over HL (ab. water tbl)	0.0	1.67	0.0
HL Act Pres (be water tbl)					Soil Over HL (bel. water tbl)		1.67	0.0
Hydrostatic Force					Water Table			
Buoyant Force	=				Sloped Soil Over Heel	=		
Surcharge over Heel	=				Surcharge Over Heel	=		
Surcharge Over Toe	=				Adjacent Footing Load	=		
Adjacent Footing Load	=				Axial Dead Load on Stem	=		
Added Lateral Load	=				* Axial Live Load on Stem	=		
Load @ Stem Above Soil	=				Soil Over Toe	=	48.9	0.33	16.3
	=				Surcharge Over Toe	=		
Seismic Stem Self Wt		120.1	2.83	340.4	Stem Weight(s)	=	252.0	1.00	252.1
					Earth @ Stem Transitions	=			
Total	=	151.2	**O.T.M.** =	354.2	Footing Weight	=	400.0	1.00	400.0
					Key Weight	=			
					Vert. Component	=			
					Total =		700.9 lbs	**R.M.**=	668.4

Resisting/Overturning Ratio = **1.89**
Vertical Loads used for Soil Pressure = 700.9 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

If seismic is included, the OTM and sliding ratios may be 1.1 per section 1807.2.3 of IBC.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus	250.0	pci
Horizontal Defl @ Top of Wall (approximate only)	0.043	in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

DESCRIPTION: Freestanding 3' Wall (Seismic)

Rebar Lap & Embedment Lengths Information

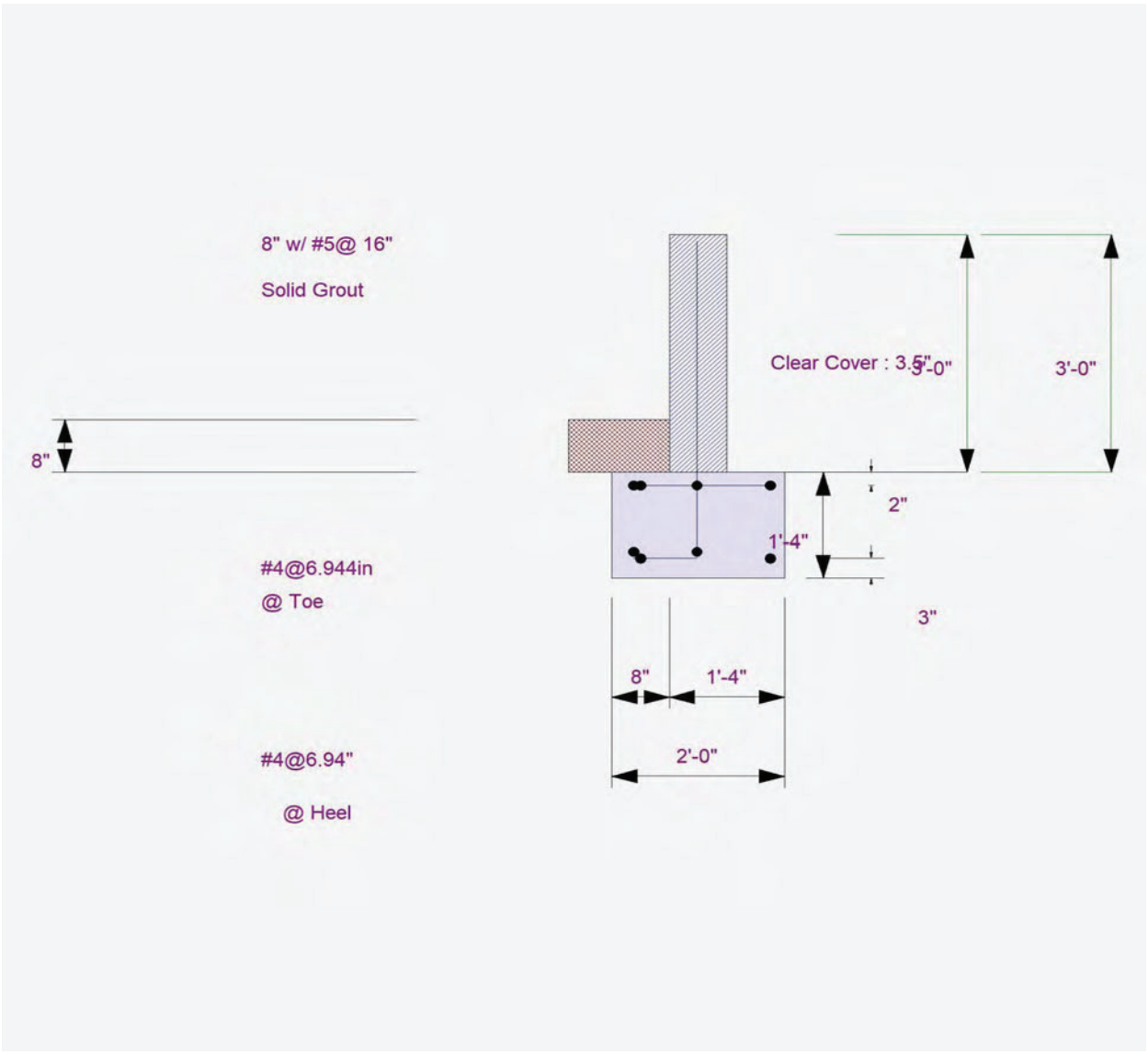
Stem Design Segment: Bottom
Stem Design Height: 0.00 ft above top of footing

K_cover=7.3125, K_spacing=16, K_diam=5.625, and K_min=5.625

Lap Splice length for #5 bar specified in this stem design segment (25.4.2.3a) =	25.00 in
Development length for #5 bar specified in this stem design segment =	12.11 in
Hooked embedment length into footing for #5 bar specified in this stem design segment =	9.59 in
As Provided =	0.2325 in2/ft
As Required =	0.0158 in2/ft

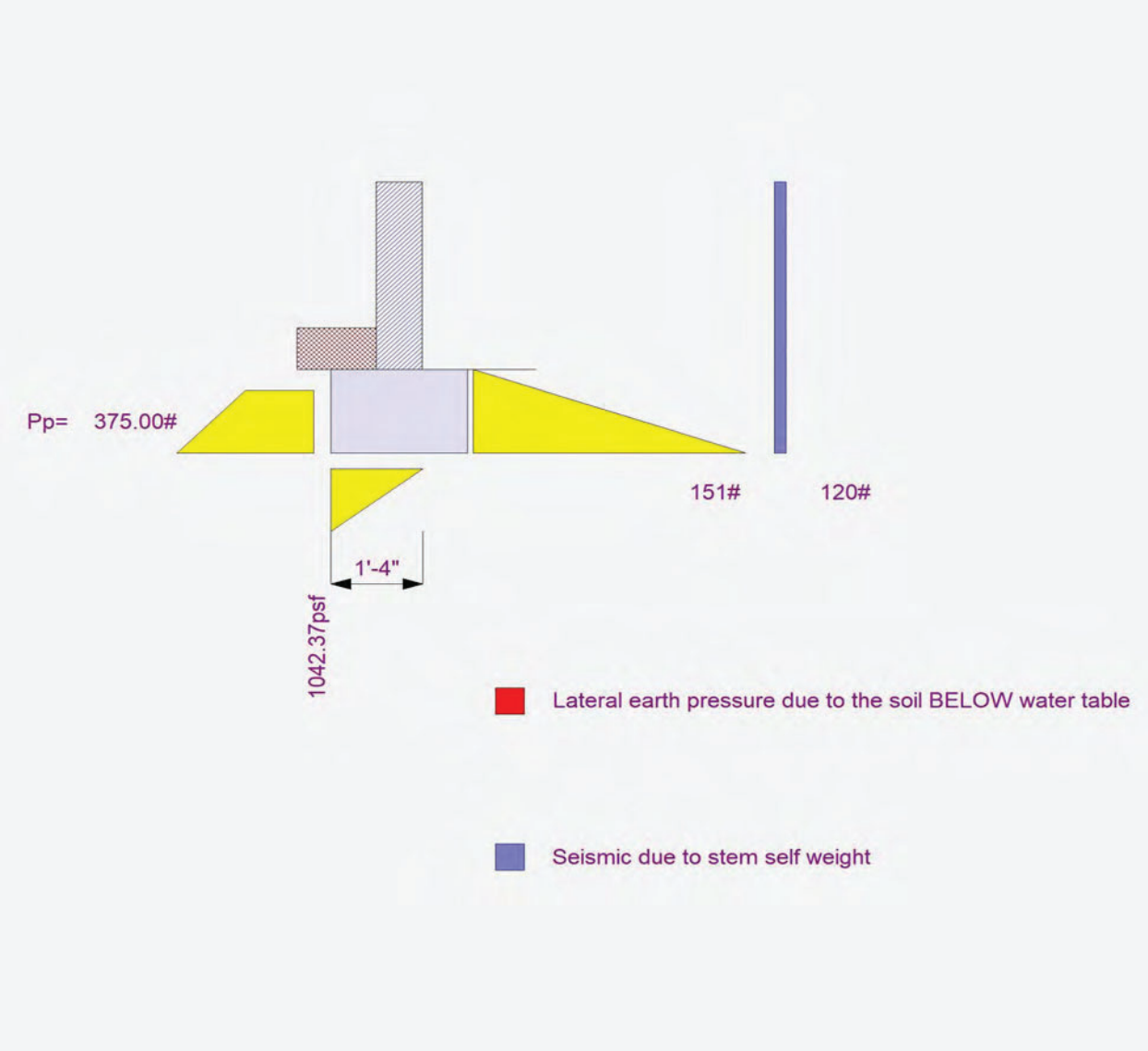
Cantilevered Retaining Wall

DESCRIPTION: Freestanding 3' Wall (Seismic)



Cantilevered Retaining Wall

DESCRIPTION: Freestanding 3' Wall (Seismic)



ADM

Anchor Designer Masonry

Input Data

Masonry Wall Details

Design Method	Wall Type	Nominal Thickness (in)	CMU State	Hole Condition	Anchor Location	Compression Strength (psi)
ACI 318-19 / ESR-4844	Grout Filled CMU	8	Cracked	Dry	Face	2000

Anchor

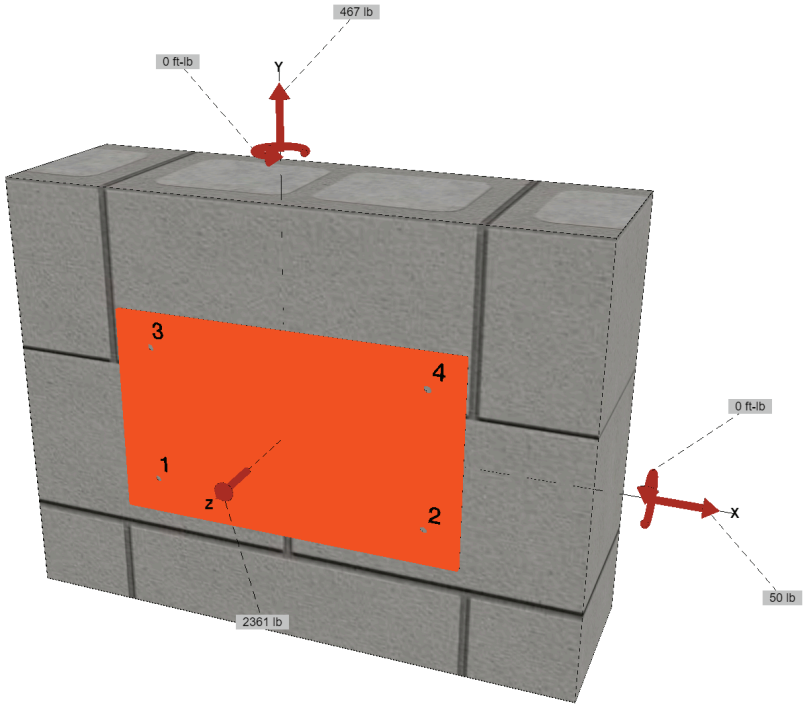
Product	Embedment Depth (in)
SET-3G w/ 3/8"Ø F1554 Gr. 36	4

Load Condition

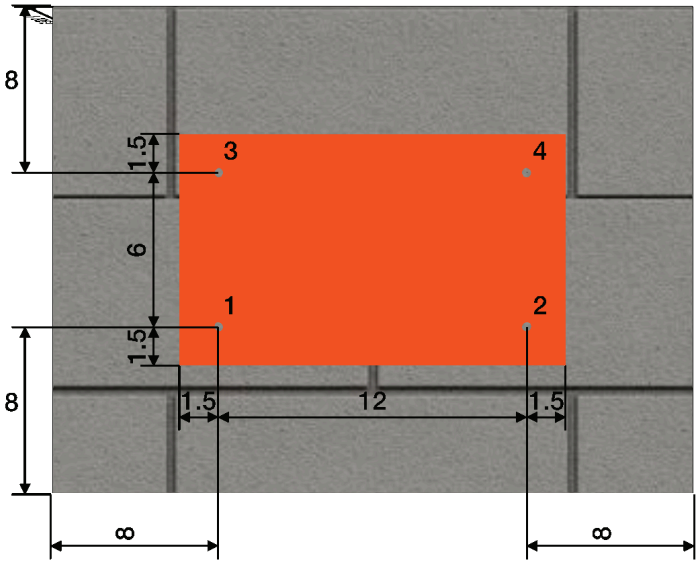
Seismic or Design Category 0.75 Reduction Factor	Sustained Tension	Apply Entire Shear Load at Front Row
No	No	No

Load

N_{ua} (lb)	V_{uax} (lb)	V_{uay} (lb)	M_{ux} (ft-lb)	M_{uy} (ft-lb)
2361	467	50	0	0


467 lb
0 ft-lb
Y
3
4
1
2
z
0 ft-lb
x
50 lb
2361 lb

Geometry



Results

Resulting Anchor Forces

Resulting Anchor Forces		
Anchor	Tension (lb)	Shear (lb)
1	590	117
2	590	117
3	590	117
4	590	117

Limit States in Tension

Tension			
Limit State Identity	Limit State Status	Demand (lb)	Capacity (lb)
Steel Strength	17.39%	590.25	3393.75
Masonry Breakout Strength	28.20%	2361.00	8371.84
Bond Strength	35.19%	2361.00	6709.39

Limit States in Shear

Shear			
Limit State Identity	Limit State Status	Demand (lb)	Capacity (lb)
Steel Strength	6.65%	117.42	1764.75
Masonry Breakout Strength Case 1x	0.00%	25.00	3058144.55
Masonry Breakout Strength Case 1y	0.01%	233.50	3059061.72
Masonry Breakout Strength Case 2x	0.00%	50.00	3058144.55
Masonry Breakout Strength Case 2y	0.02%	467.00	3059061.72
Masonry Breakout Strength Case 3cx1	0.00%	233.50	6116289.09
Masonry Breakout Strength Case 3cx2	0.00%	233.50	6116289.09
Masonry Breakout Strength Case 3cy1	0.00%	25.00	6118123.43
Masonry Breakout Strength Case 3cy2	0.00%	25.00	6118123.43
Masonry Crushing Strength	3.80%	117.42	3092.35

Shear			
Limit State Identity	Limit State Status	Demand (lb)	Capacity (lb)
Masonry Pryout Strength	3.25%	469.67	14450.99

Interaction Check

Interaction per ACI 318-19 Section 17.8 (Nua/ΦNn + Vua/ΦVn < 1.2 = Pass)			
$N_{ua}/\Phi N_n$	$V_{ua}/\Phi V_n$	$N_{ua}/\Phi N_n + V_{ua}/\Phi V_n$	Interaction Status
0.3519	0.0665	0.4184	Pass

Result

SET-3G w/ 3/8"Ø F1554 Gr. 36 with hef=4 inches *does meet* the selected design criteria.

Warnings

- Designer must exercise own judgment to determine if this design is suitable.
- Refer to manufacturer's product literature for hole cleaning and installation instructions.

APPENDIX E - CHARGERPOINT SITE DESIGN GUIDE

CP6000

Networked Charging Station

Site Design Guide

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

WARNING:

1. **Read and follow all warnings and instructions before servicing, installing, or operating the ChargePoint® charging station.** Install and operate only as instructed. Failure to do so may lead to death, injury, or property damage, and will void the Limited Warranty.
2. **Only use licensed professionals to install your ChargePoint charging station and adhere to all national and local building codes and standards.** Before installing the ChargePoint charging station, consult with a licensed contractor, such as a licensed electrician, and use a trained installation expert to ensure compliance with local building and electrical codes and standards, climate conditions, safety standards, and all applicable codes and ordinances. Inspect the charging station for proper installation before use.
3. **Always ground the ChargePoint charging station.** Failure to ground the charging station can lead to risk of electrocution or fire. The charging station must be connected to a grounded, metal, permanent wiring system, or an equipment grounding conductor shall be run with circuit conductors and connected to the equipment grounding terminal or lead on the Electric Vehicle Supply Equipment (EVSE). Connections to the EVSE shall comply with all applicable codes and ordinances.
4. **Install the ChargePoint charging station on a concrete pad using a ChargePoint-approved method.** Failure to install on a surface that can support the full weight of the charging station can result in death, personal injury, or property damage. Inspect the charging station for proper installation before use.
5. **This charging station is not suitable for use in Class 1 hazardous locations, such as near flammable, explosive, or combustible vapors or gases.**
6. **Supervise children near this device.**
7. **Do not put fingers into the electric vehicle connector.**
8. **Do not use this product if any cable is frayed, has broken insulation, or shows any other signs of damage.**
9. **Do not use this product if the enclosure or the electric vehicle connector is broken, cracked, open, or shows any other signs of damage.**
10. **Use only copper conductor wire rated for 90 °C (194 °F).**

IMPORTANT: Under no circumstances will compliance with the information in a ChargePoint guide such as this one relieve the user of the responsibility to comply with all applicable codes and safety standards. This document describes approved procedures. If it is not possible to perform the procedures as indicated, contact ChargePoint. **ChargePoint is not responsible for any damages that may result from custom installations or procedures not described in this document or that fail to adhere to ChargePoint recommendations.**

Product Disposal

Do not dispose of as part of unsorted domestic waste. Inquire with local authorities regarding proper disposal. Product materials are recyclable as marked.

Document Accuracy

The specifications and other information in this document were verified to be accurate and complete at the time of its publication. However, due to ongoing product improvement, this information is subject to change at any time without prior notice. For the latest information, see our documentation online at chargepoint.com/guides.

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Symbols

This guide and product use the following symbols:

DANGER: Risk of electric shock

WARNING: Risk of personal harm or death

CAUTION: Risk of equipment or property damage

IMPORTANT: Crucial step for installation success

Read the manual for instructions

Ground/protective earth

Illustrations Used in This Document

The illustrations used in this document are for demonstration purposes only and may not be an exact representation of the product. However, unless otherwise specified, the underlying instructions are accurate for the product.

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- Charging Station Placement 3

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Site Design Guidelines 1

This document describes how to design a project site for the ChargePoint® CP6000 networked charging station for electric vehicles. This includes guidelines and best practices for electrical infrastructure and capacity planning, construction, and concrete work required prior to installation of charging stations and cellular signal requirements.

Note: CP6000 charging stations are available in several configurations. The images in this guide might not match your station exactly; however, the information is applicable unless otherwise noted.

IMPORTANT: Ensure the installation complies with all applicable codes and ordinances.

Access ChargePoint documents at chargepoint.com/guides.

Document	Content	Primary Audiences
Datasheet	Full station specifications	Site designer, installer, and station owner
Site Design Guide	Civil, mechanical, and electrical guidelines to scope and construct the site	Site designer or engineer of record
Concrete Mounting Template Guide	Instructions to embed the charging station template in a concrete pad with anchor bolts and conduit placement	Site construction contractor
Construction Signoff Form	Checklists used by contractors to ensure the site is correctly completed and ready for product installation	Site construction contractor
Installation Guide	Anchoring, wiring, and powering on	Installer
Operation and Maintenance Guide	Operation and preventive maintenance information	Station owner, facility manager, and technician
Service Guide	Component replacement procedures, including optional components	Service technician
Declaration of Conformity	Statement of conformity with directives	Purchasers and public

Initial Site Guidelines

Designing electrical infrastructure to support current and future EV charging demand can help avoid costly upgrades later as EV adoption grows.

Complete an on-site evaluation to determine conduit and wiring requirements from the panel to the proposed parking spaces, as well as to measure cellular signal levels and identify suitable locations for any necessary cellular signal booster equipment.

If you have pre-existing infrastructure or are using your own preferred electrical contractor to prepare your site, a Construction Signoff Form by a ChargePoint Operations and Maintenance (O&M) partner is required to certify compliance with electrical code, and to ensure everything was prepared to ChargePoint specifications.

IMPORTANT: You must be a licensed electrician and complete online training to become a ChargePoint certified installer. If you do not complete training, you cannot access the ChargePoint network to complete installation.

Find online training at: chargepoint.com/installers

If the charging station is not installed by a ChargePoint certified installer, using a ChargePoint approved method, it is not covered under warranty and ChargePoint is not responsible for any malfunctions.

Electrical Requirements

At a minimum, each Level 2 charging station, either single or dual port, requires the following:

- A dedicated single phase electrical circuit from 40 A to 80 A
- A new circuit breaker at the electrical panel
- Conductor wiring and circuit protection sized in accordance with all applicable codes

Consequently, CP6000 charging station with two charge ports typically requires two power input circuits, one circuit per port. There may be situations where both ports share a main single circuit. If power capacity is limited at a site or to reduce costs for electrical infrastructure, consider ChargePoint Power Management options for power sharing at the circuit level, panel level, transformer, or site level.

IMPORTANT: Always check local codes to ensure compliance. You may need to adjust these instructions to comply with codes that apply at your installation location.

Additional Electrical Considerations

- CP6000 charging stations are AC electrical vehicle (EV) supply equipment and are permanently connected to AC networks.
- Evaluate existing electrical infrastructure to determine if the existing utility service and electrical panel capacity is sufficient.

- Ensure appropriate electrical wiring, over current circuit protection, and metering, if required, is in place.
- Identify costs for any necessary upgrades and/or a new dedicated electrical panel.
- ChargePoint recommends using a licensed electrician to evaluate available capacity and identify any upgrades that may be required.
- If a dedicated EV electrical panel is required, choose a panel location in close proximity to the charging stations.
- Determine raceway or conduit runs for electrical wiring from the electrical panel.

Charging Station Placement

To help minimize costs, choose station locations that are as close as possible to the available electrical infrastructure. Selecting these types of locations helps minimize long conduit and wire runs, as well as any trenching work.

WARNING: The ChargePoint charging station must be installed on a level concrete base or a flat wall rated for the weight of the station. Asphalt cannot support the full weight of the station. Failure to install the station on a suitable surface may cause the station to tip over, resulting in death, personal injury, or property damage.

Layout Considerations

- Identify station locations for EV charging spots.
- CP6000 charging stations can be installed either indoors or outdoors.
- They can be mounted on walls or in the ground (pedestal mount).
- CP6000 charging stations do not have an integrated active ventilation system.
- To help minimize costs, choose station locations that are as close as possible to the available electrical infrastructure.
- Consider locations where it will be easy to add future stations.
- Consider how easily drivers can find the stations they need to access.
- Identify suitable locations with smooth, plumb surfaces for wall mount stations or suitable floor surfaces for pedestal mount stations.
- Consider a layout to minimize electrical infrastructure costs to all proposed EV parking spaces.
- Avoid or minimize trenching requirements.
- Comply with regional accessibility laws, regulations, and ordinances. The CP6000 charging station must not block ramps or pathways and the height of the interactive display cannot exceed the maximum height as dictated by local laws.
- For stall parking, ChargePoint recommends using perpendicular parking stalls to better accommodate EVs with front and rear charge ports.

- Use dual-port pedestal mount stations where possible in open areas for adjacent parking or adjoining parking spaces.
- Consider protective bollards and wheel blocks where appropriate, especially for open tandem parking spaces.
- If the charging station has a camera, orient the camera towards the parking space.
- Use professional cellular test equipment to measure cellular signal levels to ensure adequate cellular coverage at the station installation location. To ensure adequate signal strength in underground or enclosed parking structures, cellular repeaters may be required. Use an indoor antenna located near EV parking spaces and an outdoor antenna typically located at the garage entrance ceiling or on the rooftop where cellular signals are best. See Connectivity for more details.
- When the charging stations cannot be placed close enough to the source of power to avoid undesirable line losses, consider increasing the size of the conductors. When the circuit conductors must be larger than 1/0 AWG, you must add a disconnect immediately adjacent to the station and terminate the upsized conductor at the line side lug of the disconnect. Then, connect a short length of 1/0 AWG conductor to the load side lug of the disconnect and the station. Adding disconnects close to the stations is also helpful when the circuit breakers are relatively far away.

Plan for the Future

Consider current EV charging needs and also potential future needs as EV adoption grows.

- Consider running raceway or conduit to all planned EV parking spots and pulling electrical wiring from the panel to meet current needs.
- Consider installing a dedicated electrical panel for EV charging and leveraging ChargePoint Power Management. This efficiently uses available power at a site to support more EV charging ports than would otherwise be possible.

Civil and Mechanical Design 2

Use the guidance below to design the civil and mechanical aspects of the site.

Each charging station can be installed attached to a wall or on a concrete pedestal with a Cable Management Kit (CMK). The pedestal can be mounted on a newly poured pad or an existing concrete surface.

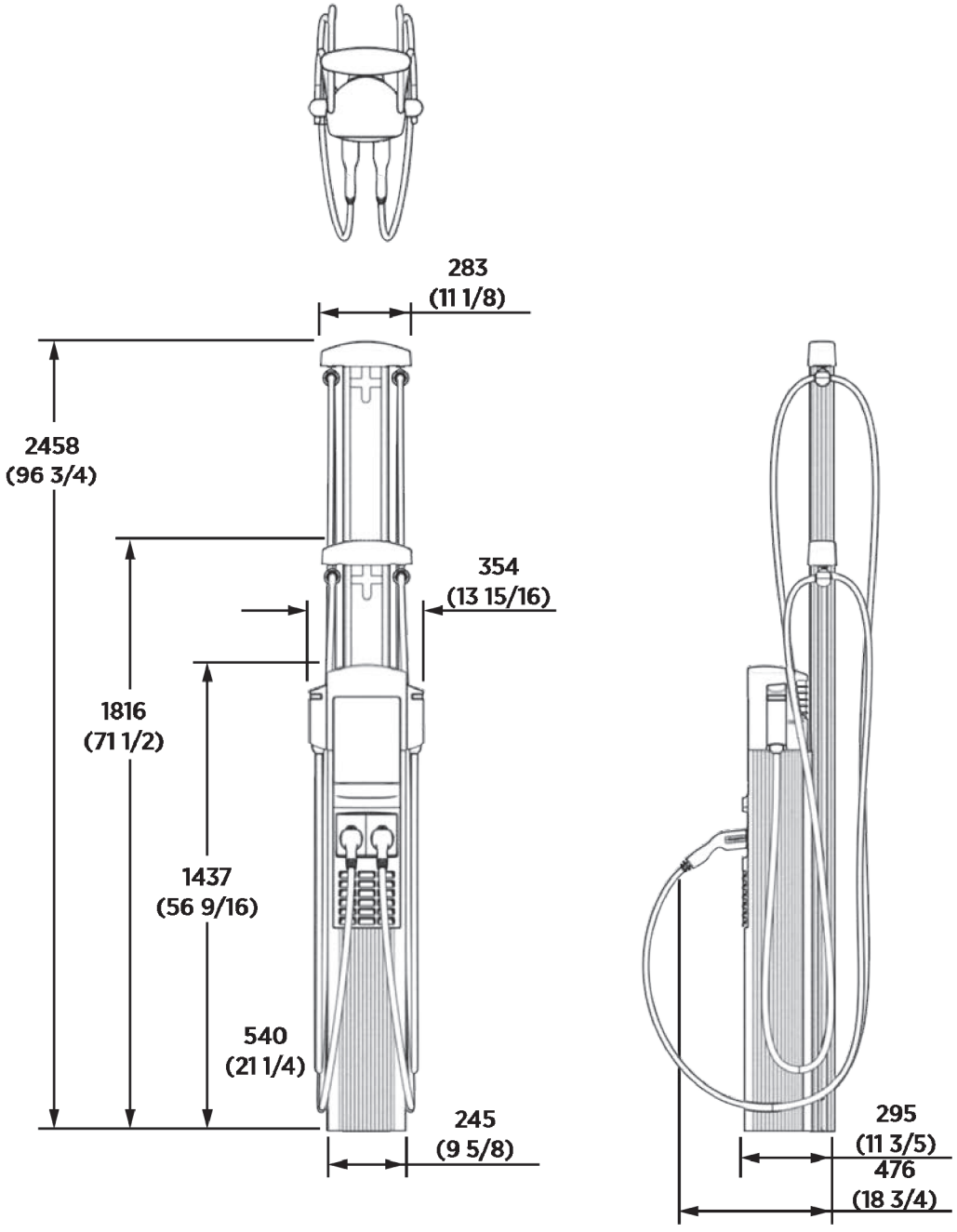
Component Dimensions and Weights

Each CP6000 charging station can be mounted on a pedestal or on a wall with a Cable Management Kit (CMK). The station is a vertical enclosure with the weights and dimensions shown below.

Station Configuration	Approximate Weight
Single port, wall	62 kg (136 lb)
Dual port, wall	68 kg (150 lb)
Single port, pedestal	71 kg (155 lb)
Dual port, pedestal	76 kg (168 lb)

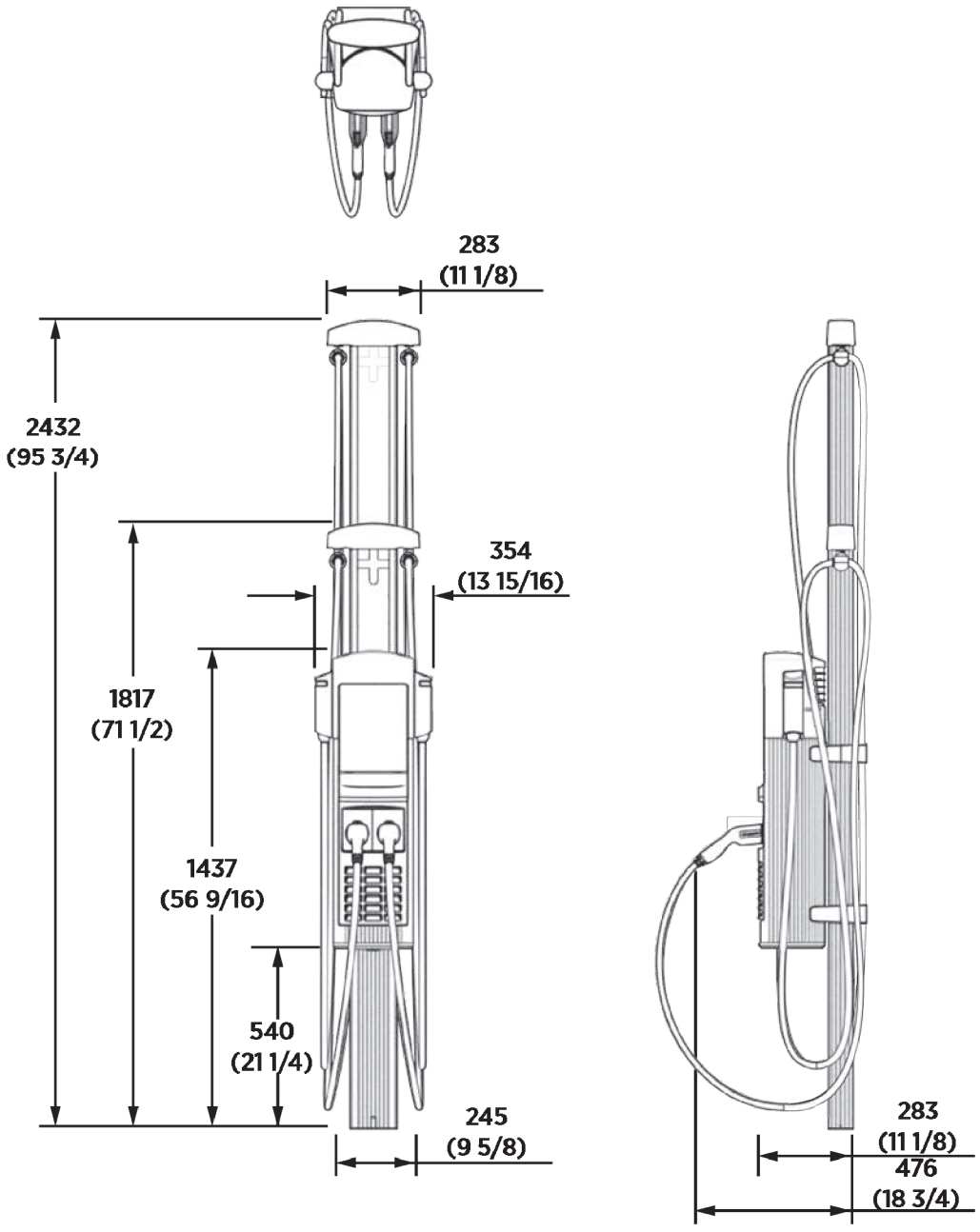
Pedestal Mount With CMK

Note: Images are not to scale. Measurements appear in metric units (mm), followed by imperial equivalents (inches).



Wall Mount With CMK

Note: Images are not to scale. Measurements appear in metric units (mm), followed by imperial equivalents (inches).



Mounting Specifications - Pedestal Mount Stations

IMPORTANT: Use a ChargePoint Concrete Mounting Template (CMT) when installing a new pedestal mount charging station or replacing an existing non-ChargePoint pedestal mount station. You do not need a CMT if you are installing a wall mount charging station or replacing an existing ChargePoint station.

The concrete pad must either be designed to be site-specific or must meet these specifications:

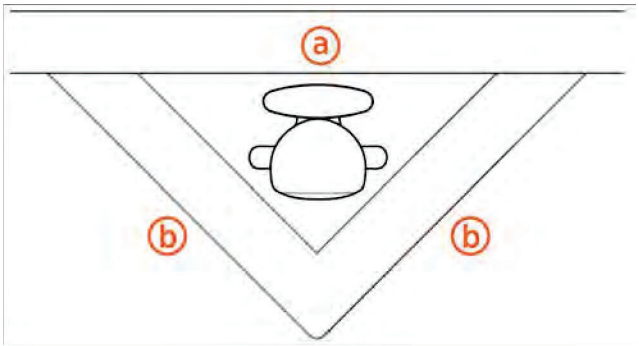
- Must not be installed in asphalt
- Mounting surface must be smooth
- Mounting surface cannot exceed a slope of 6 mm per 300 mm (0.25 in per ft)
- The concrete base must measure at least 600 mm (2 ft) on all sides
- Epoxy anchors can be used (installations in existing concrete)
- No expanding bolts are used
- Consult a civil engineer to ensure sufficient volume and strength of concrete; (installations in existing concrete)

IMPORTANT: If the existing pad does not meet the specifications above, a structural engineer must inspect and approve the pad for CP6000 charging station dimensions and weight.

Pedestal Base Designs

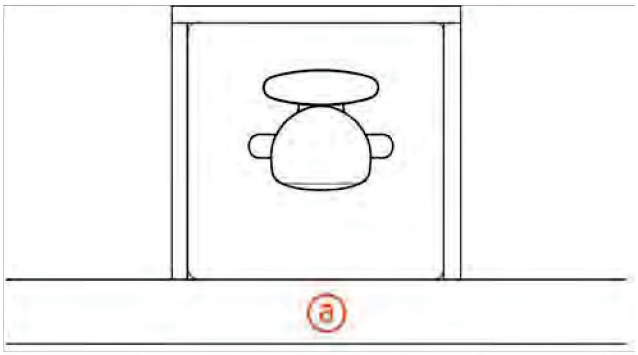
There are three basic pedestal base designs:

- In front of a curb **(a)** - Does not obstruct a pedestrian pathway or disturb landscaping.
  900 mm (3 ft) on each side **(b)**
  Area: 0.42 m^2 (4.5 ft^2)
  Volume: 0.26 m^3 (9 ft^3)



- Behind a curb **(a)** in a planter or berm
  600 mm (2 ft) on each side
  Area: 0.37 m^2 (4 ft^2)
  Volume: 0.23 m^3 (8 ft^3)

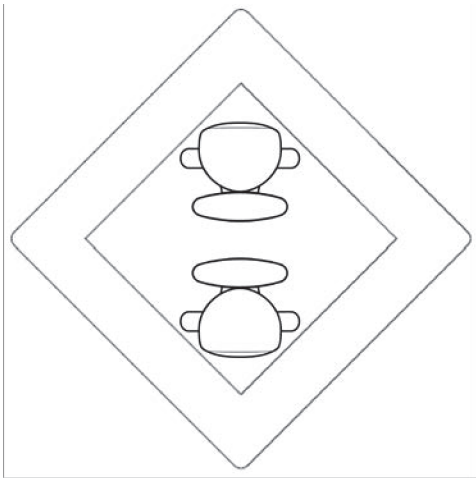
Note: Use a retaining wall as needed to prevent dirt from accumulating on the pad.



- Two stations back to back, centered between four spaces 900 mm (3 ft) on each side

  Area: 0.84 m^2 (9 ft^2)

  Volume: 0.51 m^3 (18 ft^3)

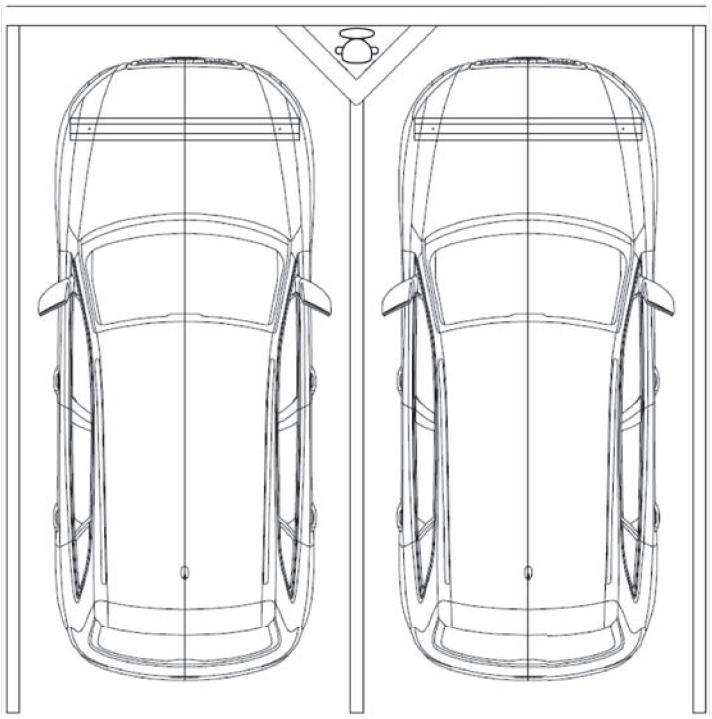


Pedestal Configurations for Different Parking Arrangements

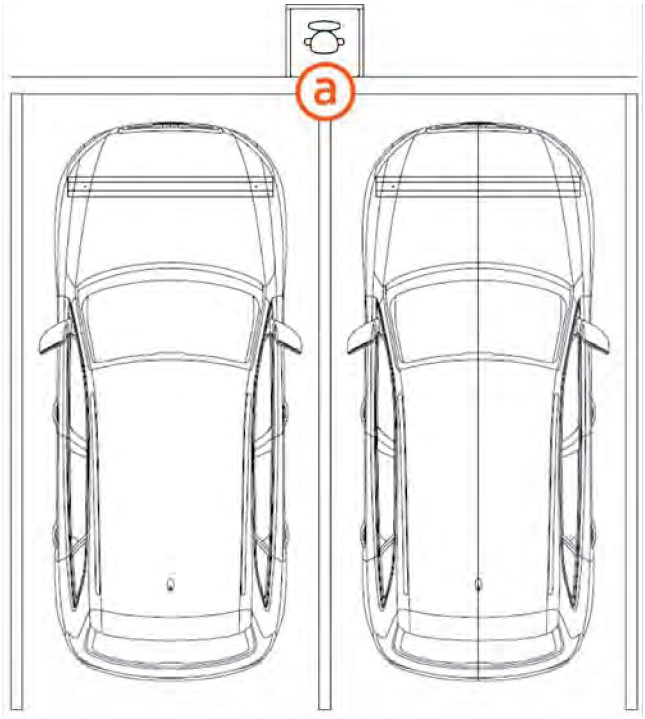
The pedestal base design can be configured in a variety of ways to serve different parking arrangements. Ensure a sufficient volume of concrete to provide anchoring for the charging station.

Note: CP6000 charging stations are available in several configurations. The images in this guide might not match your station exactly; however, the information is applicable unless otherwise noted.

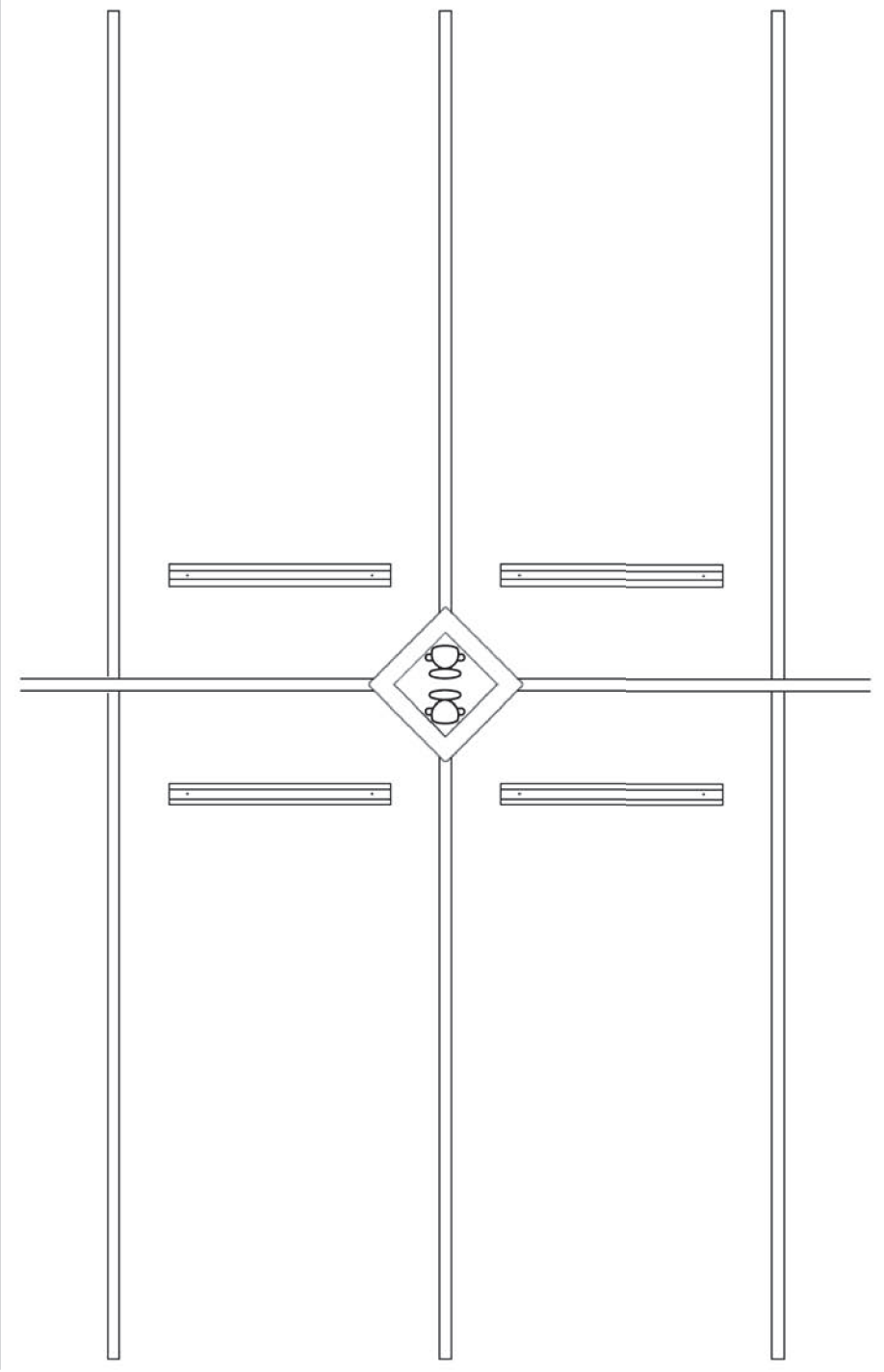
- Place the station against the curb between spaces with wheel stops 900 mm (3 ft) from the front of each stall. The base of the charging station can be flush with the parking spaces or at curb level.



- Place the station in a planter or berm between spaces with wheel stops 900 mm (3 ft) from the front of each stall or the curb **(a)**.



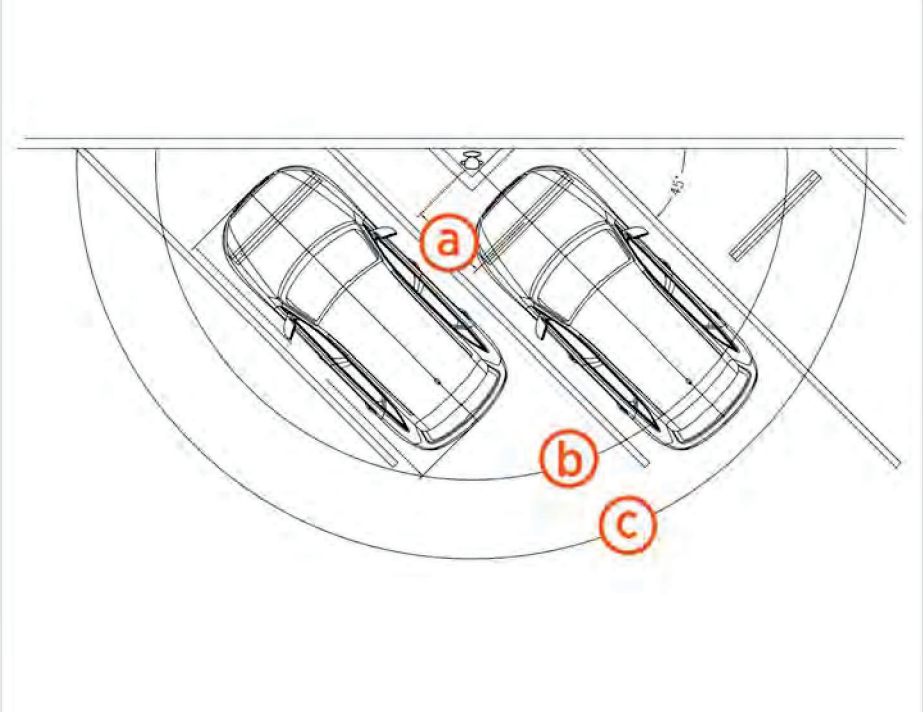
- Place two stations back to back centered on four spaces with wheel stops 900 mm (3 ft) from the front of each stall. The base of the charging station can be flush with the parking spaces or at curb level.



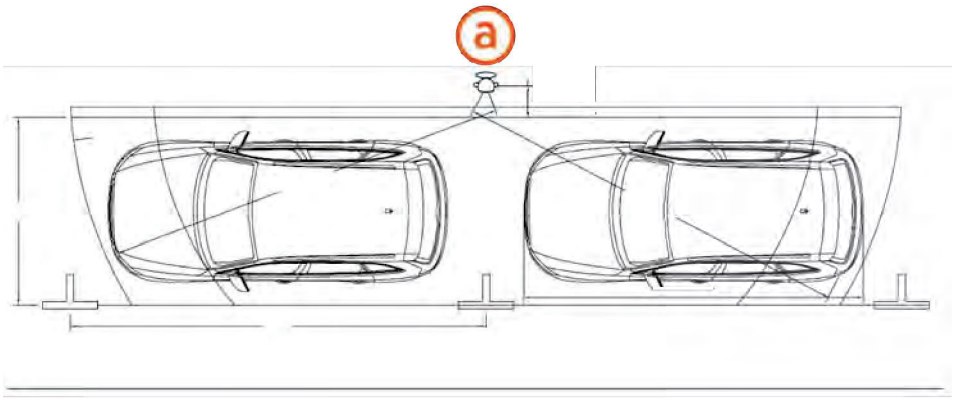
- When placing a dual holster station centered on the right space, the charging cables can reach two vehicles. Place a wheel stop 1220 mm (4 ft) **(a)** from the center of the charging station.

  Note the following details for this arrangement:

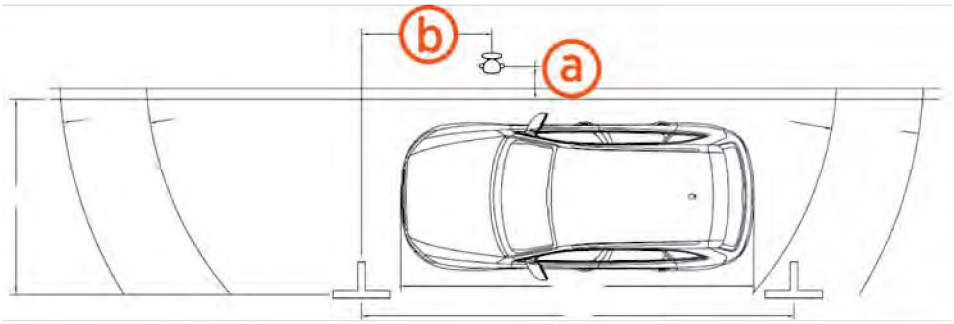
  - The arc shows the usable reach of the two charging cable lengths available: 5.5 m (18 ft) **(b)** and 7 m (23 ft) **(c)**.
  - The 7 m (23 ft) cord option is recommended for this configuration.
  - The base of the charging station can be flush with the parking spaces or at curb level.
  - Be sure to install 'EV Charging Station' signs on both spaces.



- Place a dual holster station centered between two parallel parking spaces, each 6 m (20 ft) long. Place the station **(a)** 450 mm (18 in) from the curb. A 7 m (23 ft) charging cable is recommended.



- Place a single holster station for a single parallel parking space 6 m (20 ft) long. Place the station **(a)** 450 mm (18 in) from the curb, and 1.8 m (6 ft) from the front of the parking space **(b)** This allows the cord to reach any part of the vehicle without blocking the curb side doors.

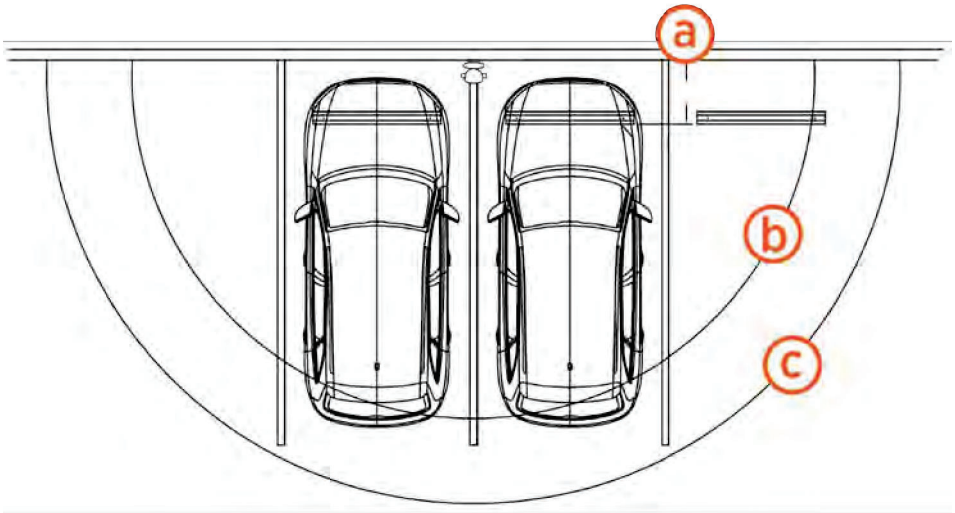


Mounting Specifications - Wall Mount Stations

For wall mounted stations:

- The wall must be smooth, stable, and plumb.
- The minimum height of the wall must be 1160 mm (45.7 in) above a finished floor.
- Place wheel stops 900 mm (3 ft) **(a)** from the wall.
- The arcs show the usable reach of two charging cable lengths available, 5.5 m (18 ft) **(b)** and 7 m (23 ft) **(c)**.

Note: Ensure the space between the wall and the charging station is clear and free of debris.



IMPORTANT: Ensure the wall supports the station. If mounting to a hollow wall, bridge at least two studs using a 41 mm (1 5/8 in) channel strut.

WARNING: If not installed correctly, the ChargePoint charging station may pose a fall hazard, leading to death, personal injury, or property damage. Always use the provided Concrete Mounting Template shown preinstalled here, or a ChargePoint-approved surface mounting solution, to install the ChargePoint charging station. Always install in accordance with applicable codes and standards using licensed professionals. Non approved installation methods are performed at the risk of the contractor and void the Limited One-Year Parts Exchange Warranty.

Drainage

Ensure any slopes, walls, or fencing at the site do not trap water around the charging station installation site. The system is only built to withstand water to the height of the conduit stub-up.

WARNING: Exposing the ChargePoint charging station to water above the height of the conduit stub-up could create an electrocution, shock, or fire hazard. Cut power to the charging station if it has been exposed to standing water and contact ChargePoint before the charging station is powered on.

Clearances

For pedestal installations, the conduit stub-up must be a minimum of 230 mm (9 in) from any obstructions to the rear. This includes other charging stations. Check applicable codes for any additional clearance requirements.

Accessibility

Comply with regional accessibility laws, regulations, and ordinances. The CP6000 charging station must not block ramps or pathways and the height of the interactive display cannot exceed the maximum height as dictated by local laws.

Signage

Refer to local and regional code to design the following elements for the site:

- Any required re-striping of parking spaces
- EV or Accessible EV signs
- EV or Accessible EV paint markings on and around the parking spaces

Electrical Design 3

The CP6000 charging stations are available with a maximum amperage of either 50 A or 80 A.

If the charging station allows a maximum of 50 A, Power Select current options include 16 A, 24 A, 32 A, 40 A, 48 A, and 50 A.

If the charging station allows a maximum of 80 A, Power Select current options include 16 A, 24 A, 32 A, 40 A, 48 A, 50 A, 56 A, 64 A, 72 A, and 80 A.

Power Share allows a dual-port station to share power from a single circuit across two ports, adjusting power depending on whether one or both are charging. Standard wiring uses an independent circuit for each port. Power Share can be used in combination with Power Select.

Refer the CP6000 datasheet at chargepoint.com/guides for information about the following:

- Electrical input
- Electrical output
- Mounting and functional interfaces
- Safety and connectivity features
- Safety and operational ratings

General Wiring Considerations

Ensure that the installation location is equipped with service wiring that supports the charging station's power requirements.

Conduit and wire size are determined based on the length of runs from the electrical panel to the station location. Service wiring must be run through conduit to comply with local electrical codes. Consult national and local codes or a project engineer to determine the grade, quality, and size of the conduit or cable.

Attach the conduit with a listed adapter. Use a sealing method that meets all applicable code requirements.

The CP6000 Concrete Mount Kit accommodates service wiring through the flare, conduit, or locally appropriate wiring method. Visit Pedestal Mount Concrete Preparation for more information.

Note: All wiring and conduit is supplied by the contractor unless otherwise indicated.

For full product specifications, refer to the CP6000 Datasheet.

Wall Mount Considerations

- CP6000 wall mounted charging stations use surface mount wiring.
- When pulling electrical wiring for wall mount stations, the conduit and wire must be brought to the location where the stations will be mounted. Flex conduit is typically used to bring the wire to the station. Wiring is brought in through knock outs in the bottom of the charging station.

Pedestal Mount Considerations

- CP6000 pedestal mounted charging stations typically require service wiring installed underground to enter through the bottom of the station.
- When pulling electrical wiring for CP6000 pedestal mount, ensure at least 1.5 m (5 ft) of wire remains above grade.

Conduit

The outside diameter of conduit must not exceed the sizes called out in the pedestal mounting template: 95 mm (3.74 in). Conduit stub-ups must measure between 152 mm (6 in) and 590 mm (23.25 in) above grade.

Conduit stub-ups must not extend higher than 600 mm above ground level.

Electrical Supply Requirements

Wiring must be sized in accordance with all applicable codes for continuous load devices. The main standard for cable size is based on IEC 60364-5-52:2009 and IEC 60364-5-54:2011. The terminal block accepts stranded or solid conductors up to 1/0 AWG (50 mm^2). The appropriate size depends upon the distance between the electrical panel and the charging station installation site and the maximum current in the circuit.

When planning multiple EV charging stations, it is best practice to separate non-continuous from continuous loads, with all branch circuits for EV charging on a dedicated electrical panel assembly with adequate circuit breakers. When sizing new electrical panels dedicated for EV charging, all branch circuits must support continuous load.

CP6000 charging stations are designed for connection to and operation on rated voltages of 208 V or 240 V (phase to phase) at 60 Hz. Source must have neutral bonded to ground to establish 120 V phase to ground.

CAUTION: CP6000 charging station is rated Over-voltage Category III and includes surge protection for absorbing transient over voltages. CP6000 charging stations are tested to IEC 61000-4-5 (4 kV) standards. In countries where extra Surge Protection Device protection is required, check the national codes for categorization and installation of the equipment.

CAUTION: Use copper conductors only.

Use new circuit breakers only.

Port Capacity	Breaker Rating
80 A /port	100 A breaker per port
48 A/port	60 A breaker per port
40 A/port	50 A breaker per port

Ensure all power and ground connections (especially those at the breaker) are clean, tight, and torqued to specification. Remove all oxide from all conductors and terminals before connecting wiring.

Be aware of these requirements before installing the charging station:

- CP6000 charging stations comply with Class B.
- The CP6000 is Class I grounded equipment and must be grounded.

Consult your electricity grid operator regarding requirements for local regulations. Depending on the desired rated power, the installation of the charging station may require registration with and approval by your electricity grid operator.

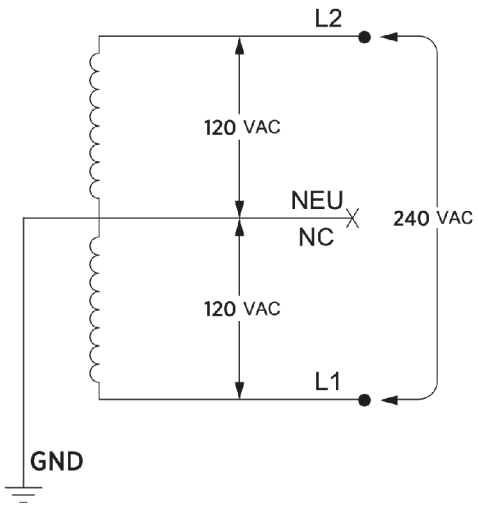
Grounding Requirements

CP6000 charging stations must be connected to a grounded, metal, permanent wiring system. An equipment-grounding conductor must be run with circuit conductors and connected to an equipment-grounding terminal on the charging station.

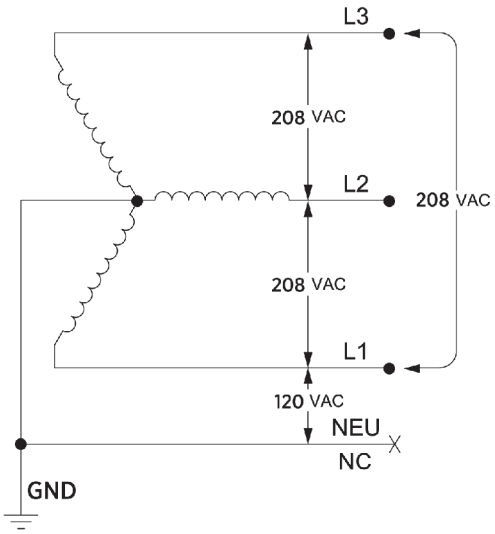
A grounding conductor that complies with applicable codes must be grounded to earth at the service equipment or, when supplied by a separate system, at the supply transformer, or may be grounded to an earth electrode. Ensure the grounding conductor complies with all applicable codes.

Connect To These Systems

- 120/240 V AC, 1Ø Bonded Neutral
  Station is connected to L1 and L2
  Neutral is not used

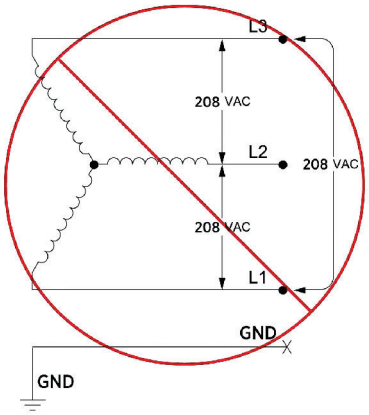


- 120/208 V AC, 3Ø Wye Bonded Neutral
  Station may be connected to any two lines
  Neutral is not used

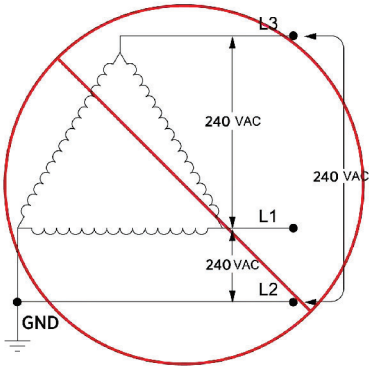


Do Not Connect to These Systems

- 208 V AC 3Ø Wye, ungrounded
  Floating Neutral
  Voltage of either line to ground is undetermined
  Neutral is not grounded



- 120/240 V AC 3Ø Delta, corner-grounded
  Voltage of any line is not 120 V nominal relative to ground
- Any system where the center point of the AC power source is not grounded.



Connectivity 4

A consistently strong cellular signal is needed before installers can activate the vehicle charging station. Weak or sporadic signal can affect crucial aspects of the charging station, including:

- Accuracy in reporting
- Ability for drivers to use the mobile app
- Ability for customer support to troubleshoot problems
- Support for advanced features such as Power Management or Waitlist

A strong signal is also required for the ChargePoint Assure maintenance and management programs.

ChargePoint stations use cellular data connections to reach ChargePoint Cloud Services. This allows secure, PCI-compliant data connections without requiring any other form of internet connectivity at an install site or imposing additional network management responsibilities on a site host.

Each station has its own cellular connection.

Signal Strength and Quality

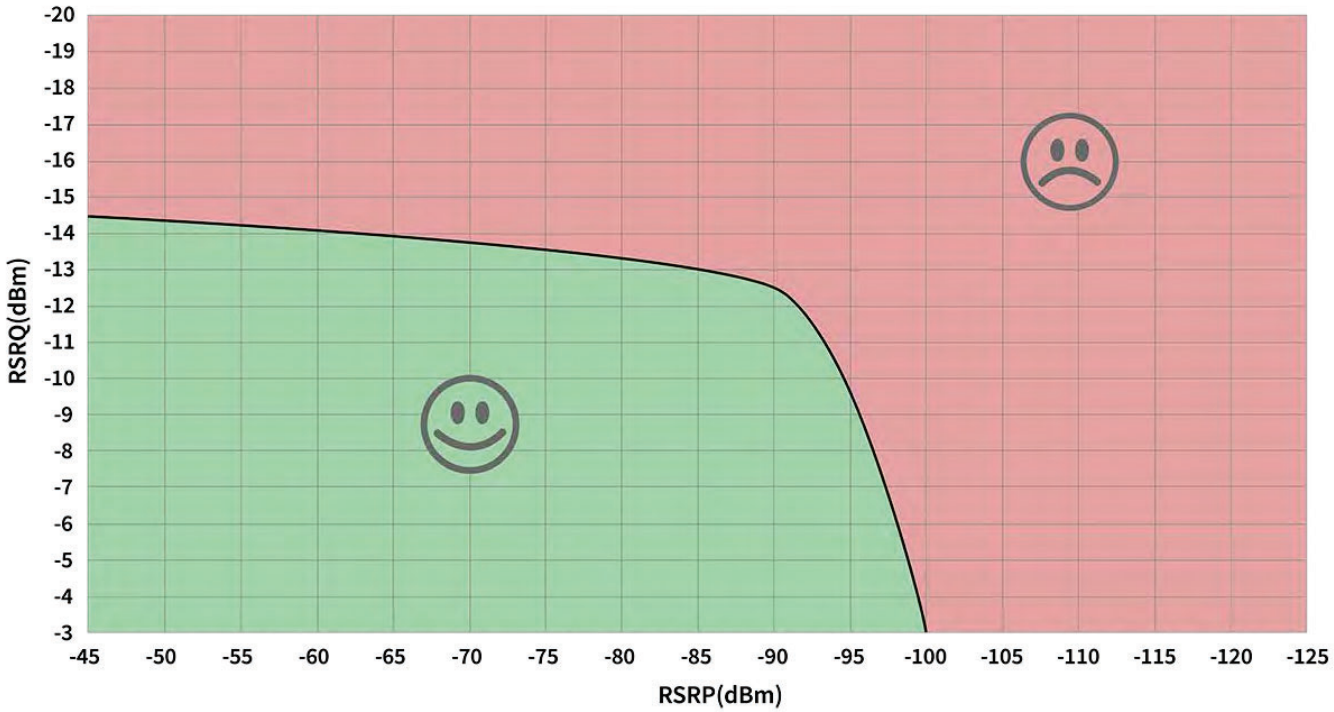
You must use a cellular signal detection device (such as a Siretta Snyper LTE or equivalent) to take signal strength readings at the exact proposed mounting location of the charging station. If the charging station does not have its own cellular connection, take the signal strength reading at the proposed mounting location of the gateway station.

In North America, ChargePoint products all support LTE bands 2, 4, and 5. The most commonly supported carriers to check during site evaluation are:

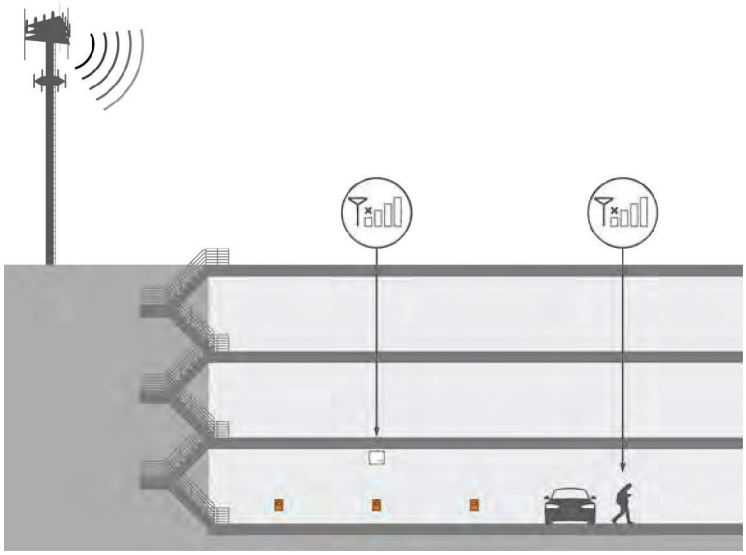
- US: AT&T, T-Mobile, and Verizon
- Canada: Rogers, Telus, and Bell

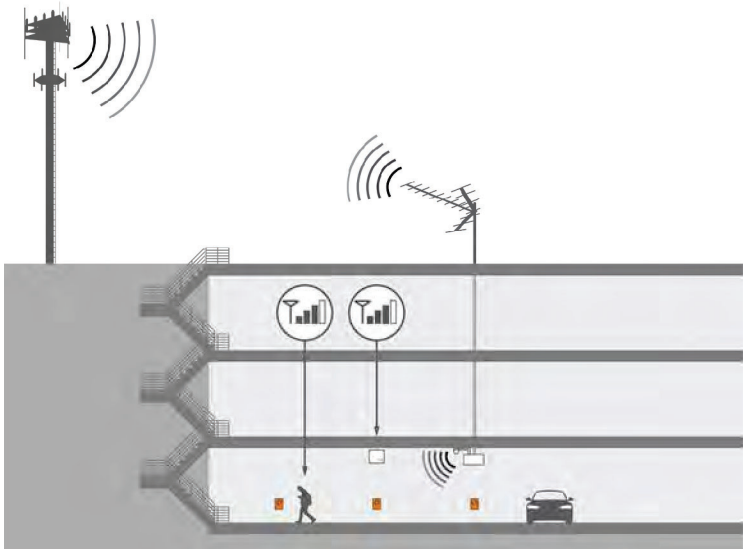
You must test the LTE signal strength at the proposed mounting location of every gateway station and ensure the location meets the minimum RSRQ at -12.5 dB or better, for RSRP measured at -90 dBm or better. Refer to the graph for acceptable combinations.

Note: These numbers are all negative, so -70 dBm is stronger than -85 dBm, and -90 dBm is weaker.



If the signal strength is weaker than this, take cellular readings at the location where any cellular signal booster antennas will be installed. Ensure enough signal exists for that repeater model. Install repeaters to boost the strength of the cellular signals. Repeaters are often required when installing charging stations in an underground garage or enclosed parking structure.





For other regions, or if the site does not have strong signal on these bands, contact your ChargePoint representative for additional solutions.

ChargePoint strongly recommends a consultation with a cellular connectivity specialist before all installations. A consultation can verify:

- Service with a supported carrier on a supported LTE band
- Available signal and local noise levels on applicable bands
- Site changes to correctly meet your needs, both for station bandwidth and other phone coverage for customer or tenant satisfaction

Repeaters

Some sites require repeaters to ensure strong signal to all stations. If a repeater is required, look for a model with these features:

- Specifically LTE compatible on the listed bands
- Multi-carrier
- Multi-band
- Not already dedicated to FirstNet or other first responder-specific networks
- Auto-gain recommended

Note: Do not rely on readings taken with a cell phone when conducting site surveys. Many signal boosters and network extenders may not be compatible with ChargePoint hardware, including certain types of Distributed Antenna Systems (DAS), micro/nano/pico/femto-cells, and carrier- or band-specific signal boosters.

5 Pedestal Mount Concrete Preparation

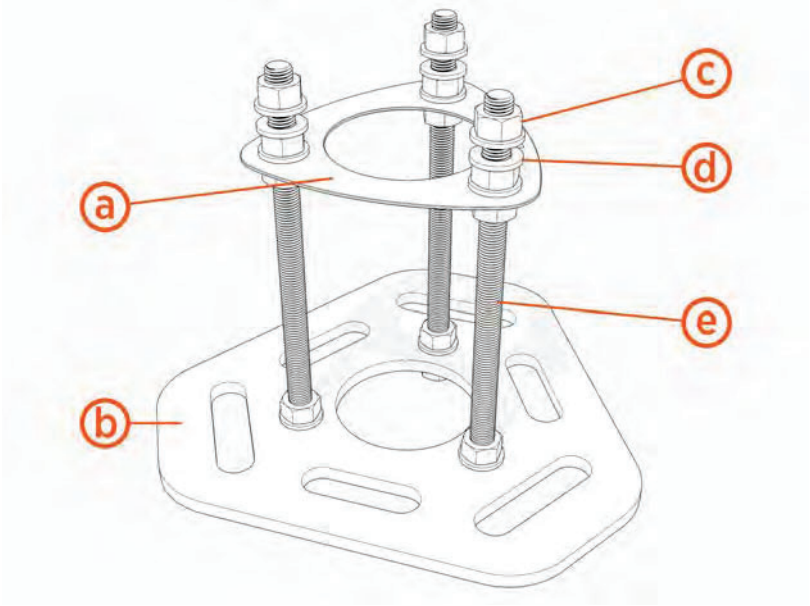
Concrete Mounting Template

You must use a ChargePoint Concrete Mounting Template (CMT) when installing a new pedestal mount charging station or replacing an existing non-ChargePoint pedestal mount station.

Use a CMT when installing charging stations on existing concrete (on an intermediate floor only).

You must order the CP6000 CMT separately, with sufficient lead time before site construction. This kit ships separately from the ChargePoint CP6000 charging station.

a. Upper template
b. Lower template
c. Nuts (x 15)
d. Washers (x 18)
e. Anchor bolts (x 3)



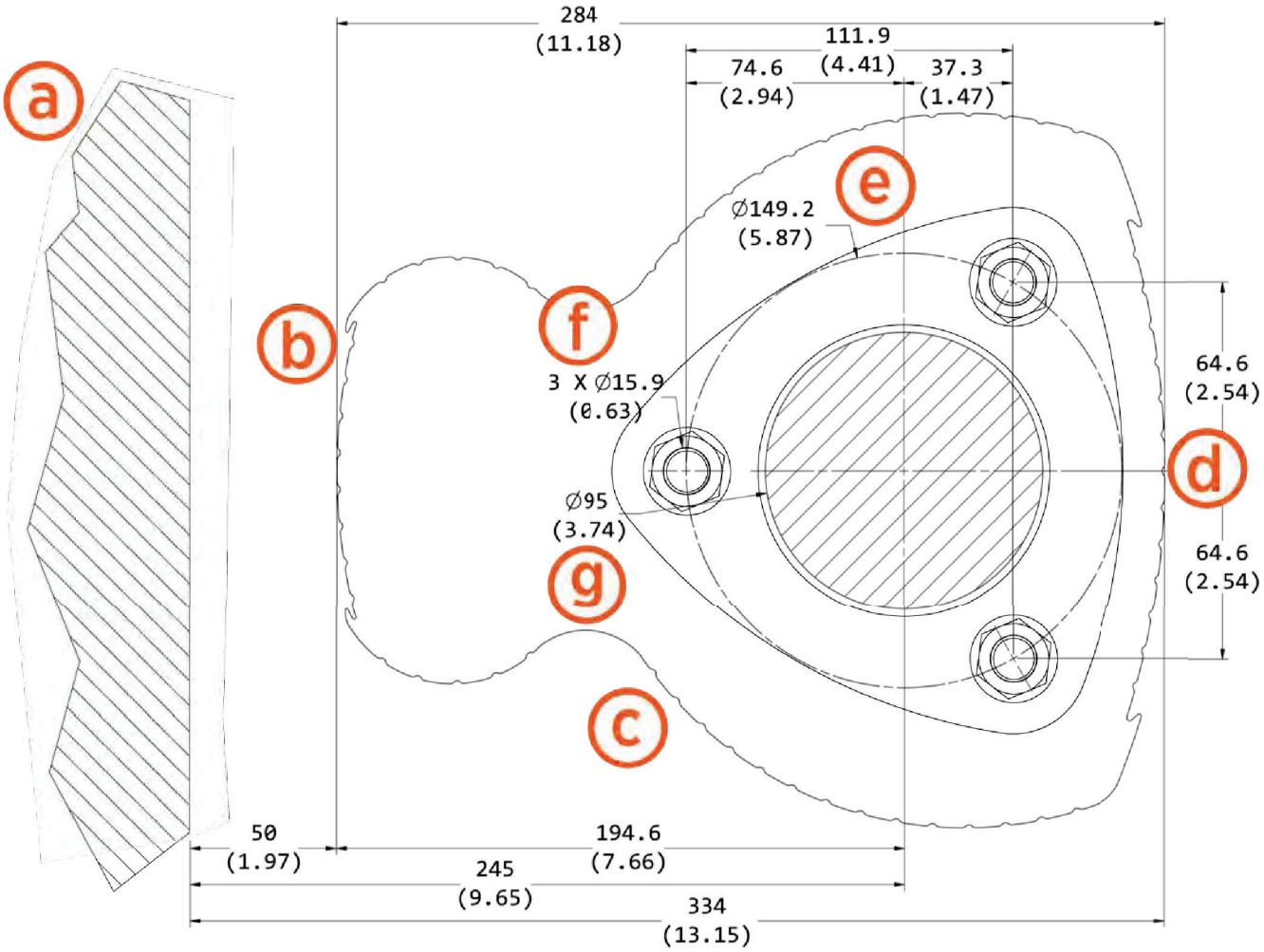
Note: You do not need a CMT if you are installing a wall mount charging station or replacing an existing ChargePoint station.

The Concrete Mounting Template kit components you need to use, the tools required, and the installation steps vary depending on the type of installation: new concrete or existing concrete.

WARNING: Do not use expanding anchor bolts. Do not install the CP6000 on an asphalt surface.

CMT - Pedestal Mount With CMK

Note: Images are not to scale. Measurements appear in metric units (mm), followed by imperial equivalents (inches).



a. Wall
b. CMK footprint
c. Pedestal footprint
d. Front
e. Bolt circle
f. Bolt or anchor
g. Conduit stub-up within this area (new concrete only)

Tools and Materials

In addition to the CP6000 Concrete Mounting Template kit, the site construction team needs:

- Digging tools (shovel, spade, etc.)
- Materials to prepare the form for pouring concrete
- Concrete as specified by site drawings
- Rebar as specified by site drawings
- 24 mm (1 in) wrench
- Level
- Cut-resistant gloves
- Drill or hydraulic hole punch (if using armored cable)
- Conduit, ducting, or armored cable in the amounts and types specified by site drawings, that complies with local code (see the rest of this document for conduit sizes and routing)

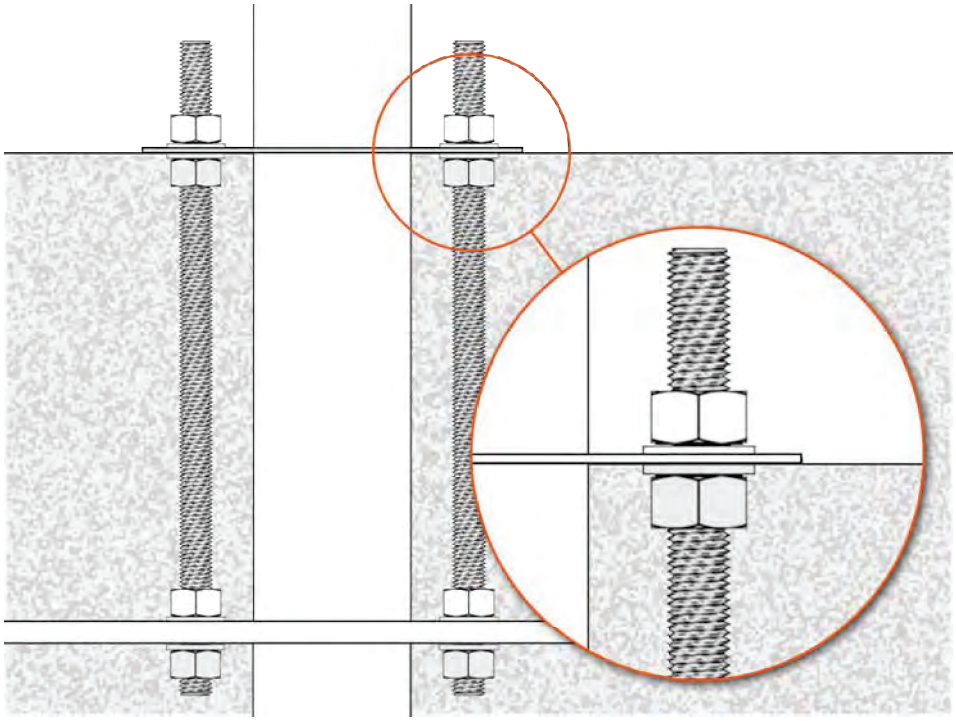
Installation into New Concrete

WARNING: Failure to install the ChargePoint CP6000 in accordance with these instructions and all local building practices, climate conditions, safety standards, and all applicable codes and ordinances may lead to risk of death, injury, or property damage, and will void the Limited One-Year Parts Exchange Warranty.

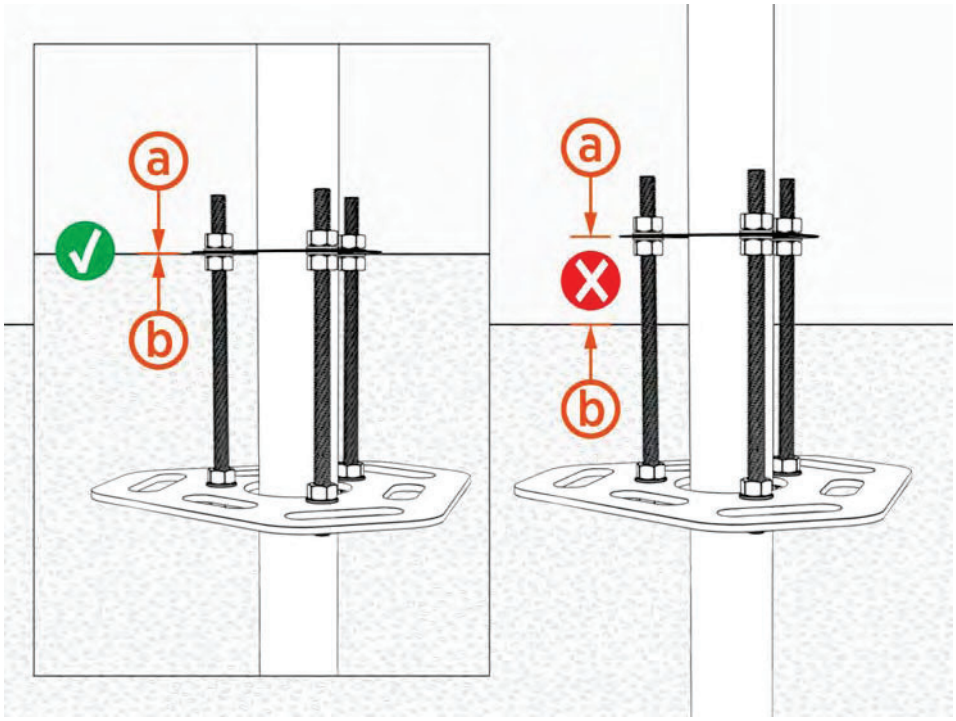
1. Trench and excavate an opening to accommodate the wiring conduit and the concrete mounting pad that meets local codes and requirements, per site drawings.
2. Run conduit to each station as needed. If the station needs wired Ethernet access, run Ethernet conduit.
3. Build the form and lay rebar for the foundation.
    - The concrete block must measure at least 600 mm (24 in) on all sides.
    - The conduit stub-up needs to measure between 152 mm (6 in) and 590 mm (23.2 in) above the concrete surface

    IMPORTANT: It is critical that the conduits are positioned properly and plumb. The tolerance where the conduits enter the station is 2 mm (1/16 in).
4. Align the CP6000 CMT over the conduit stub-ups with the two bolts facing forward and the third bolt to the rear.

5. Slide the CP6000 CMT over the conduit stub-ups until the top surface of the template is level with the top surface of the concrete when poured.

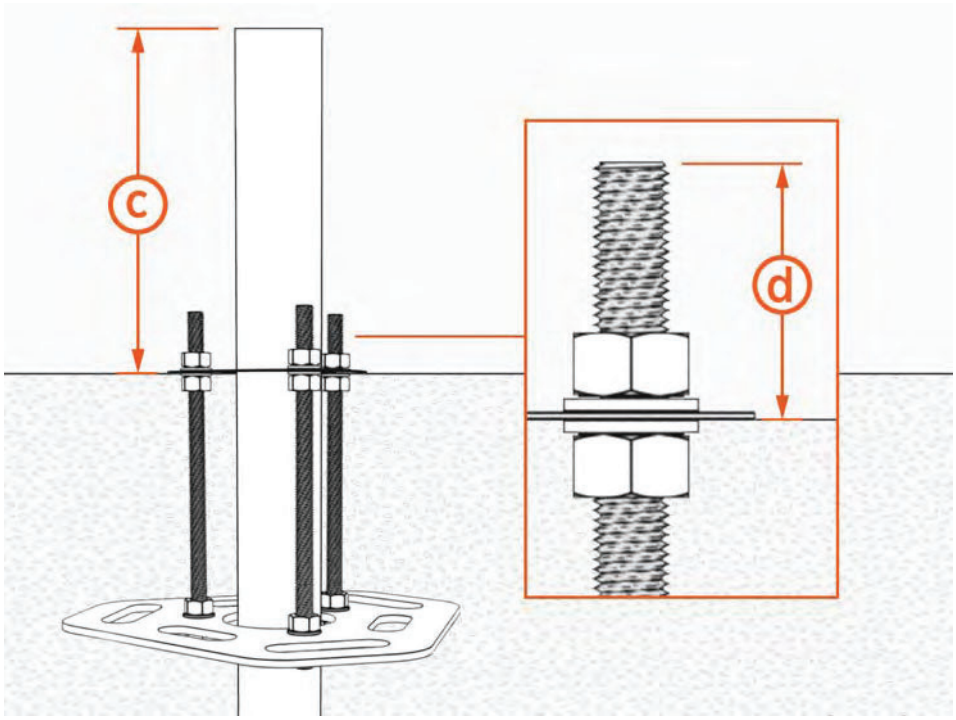


The bottom of the upper template **(a)** must align with the surface of the concrete **(b)**.

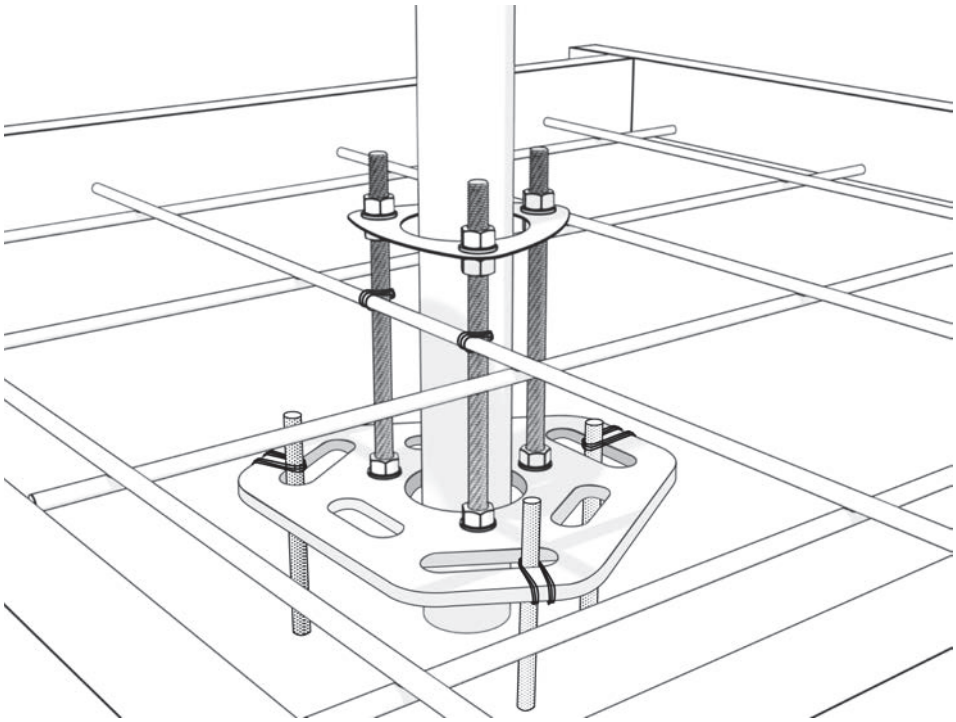


6. Ensure the conduits are plumb.

7. Use a level to check that the CP6000 CMT is level from front to back and from side to side.
8. Conduit height **(c)** must be between 152 mm (6 in) and 590 (23-1/4 in). Each bolt **(d)** must extend between 60 mm (2-1/2 in) and 100 mm (4 in) above the concrete surface.



9. Before pouring concrete, tie the CP6000 CMT to rebar to help hold it in place.



IMPORTANT: The CP6000 CMT and the conduit must be secured in place to prevent them from moving out of position while the concrete is poured and curing.

10. Pour the concrete.

    Note: Make sure the concrete surface between the conduits is completely level and free of any irregularities.

11. Refer to the measurements in this guide and ensure the anchor rod locations are correct before the concrete is dry.
12. Use a level to ensure the bolts are plumb.

You are now ready to install the CP6000 pedestal mount charging station.

Install on Existing Concrete

IMPORTANT: Always check local codes to ensure compliance. You may need to adjust these instructions to comply with codes that apply at your installation location.

Review the CP6000 Site Design Guide and ensure that the dimensions of the existing concrete slab meet the requirements.

If you are installing a Cable Management Kit (CMK), make sure there is adequate clearance behind the power stub-up for the CMK.

To safely mount a CP6000 charging station, the concrete must be at least 150 mm (6 in) thick. At this thickness, all of the CP6000 mounting bolts must be positioned as follows:

- At least 380 mm (15 in) from the front edge
- At least 300 mm (12 in) from the side edges
- At least 150 mm (6 in) from the rear edge of the concrete slab

IMPORTANT: If the existing pad does not meet the specifications above, a structural engineer must inspect and approve the pad for CP6000 charging station dimensions and weight.

Replace an Existing Charging Station

If you are replacing a CPF50 charging station, contact ChargePoint to order a CPF50 Adapter Kit.

If an existing charging station (from a manufacturer other than ChargePoint) is already in place at the installation site, complete these tasks:

- Turn off all power to the station and disassemble according to the original manufacturer's instructions.
- Cut away any existing bolts or non-power conduit stub-up to ground level.
- You may need to plug cut-away conduits at the slab end and disconnect wiring at the other end.

IMPORTANT: If existing conduit stub-up diameter is greater than 32 mm (1-1/4 in), you must remove the concrete and replace it.

Tools Required

Electric hammer drill with 12 mm (1/2 in) or larger chuck.

Consumables Required

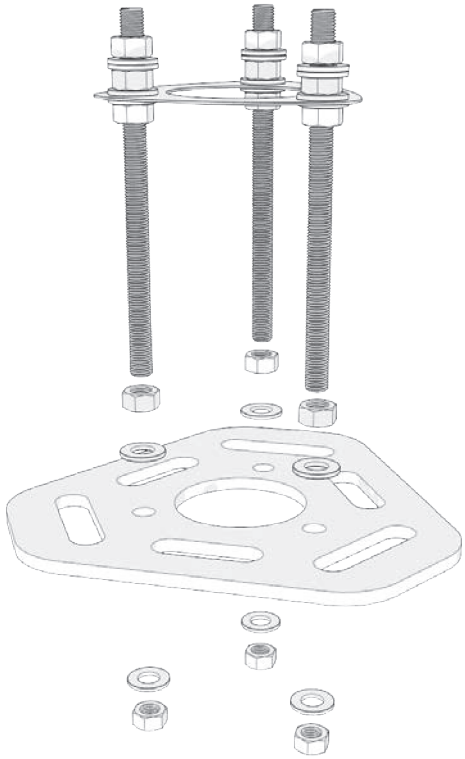
The following table lists and describes consumable items that you will need. The quantity listed in the table is based on installation of one charging station.

Note: The consumption rate of these products varies depending on conditions at the installation site.

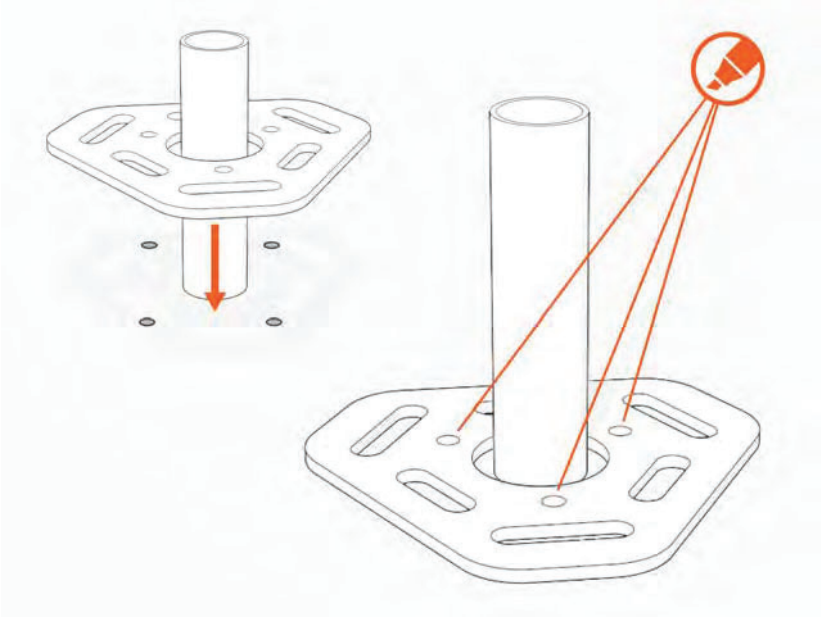
Quantity	Description	Purpose
1	Epoxy adhesive for concrete such as Hilti RE-500	Fill drilled holes.
1	Electrical cleaning and maintenance aerosol, any angle spray duster, 235 ml (8 oz)	Clean drilled holes. Note: Compressed air will work.
1	Slow spiral round-shank masonry drill bit • 19 mm (3/4 in) diameter • 12.5 mm (1/2 in) shank • 254 mm (10 in) drill depth • 305 mm (12 in) length overall	Drill 19 mm (3/4 in) holes in concrete. Note: The holes must be at least 150 mm (6 in) deep.
1	Drill bit for concrete embedded rebar, round • 19 mm (3/4 in) bit size • 12.5 mm (1/2 in) shank diameter • 305 mm (12 in) length overall	Drill 19 mm (3/4 in) hole through rebar.
1	Nylon loop handle brush • 19 mm (3/4 in) brush diameter • 75 mm (3 in) length brush • 216 mm (8 1/2 in) length overall	Clean drilled holes.
1	Push-on round cap, fits 16 mm (5/8 in) - 17.5 mm (11/16 in) OD, 12.7 mm (1/2 in) inside height, pack of 100	Keeps the epoxy inside the drilled holes in situations where the slab is only 150 mm (6 in) deep.

Installation Instructions

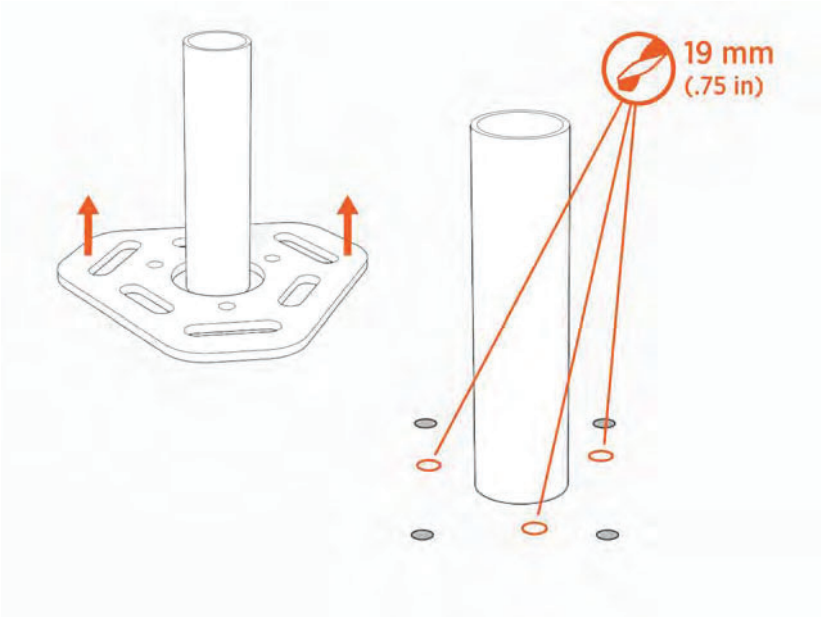
1. Remove the lower template and all nuts and washers from below the upper template.



2. Place the lower template on the concrete and mark the hole locations.
    - When placing the template, consider the charging station's total footprint.
    - If installing over an existing conduit stub-up or armored cable, position the center of the template around that stub-up / cable.



3. Remove the template and drill three 19 mm (0.75 in) diameter holes 250 mm (9.85 in) deep into the concrete.
    - You may need two drill bits: one for the concrete (with the pilot) and another for the rebar (without the pilot). Always start the hole using the standard drill bit, and then switch to the rebar drill bit only if drilling through rebar.



4. Remove all dust from inside the drilled holes using compressed air, a vacuum, or a brush.
5. Remove the bolts from the upper template.
6. Fill each hole with epoxy to about 65 to 75 mm (2.5 to 3 in) below the top of the hole. Continue immediately to the next step because the epoxy sets quickly.

   Note: Inserting the threaded bolts displaces the epoxy, causing it to fill the holes to the grade level. If the epoxy is below grade level after the next step, add more epoxy.

7. Place the upper template over the holes.
8. Insert the bolts through the upper template into the holes.

   IMPORTANT: Rotate the bolts as you insert them. This allows the epoxy to fully coat the threads of the bolts, reducing the amount of trapped air.

   Note: Leave the upper template in place.
9. Use a bubble level to ensure the bolts are plumb.
10. Allow the epoxy to cure (depending on cure times recommended by the epoxy manufacturer).

You are now ready to install the CP6000 pedestal mount charging station.

chargepoint.com/support

75-001535-01 r2

APPENDIX F – CHARGERPOINT CONSTRUCTION SIGN OFF FORM

CP6000 Construction Signoff Form

Submit this form and required photos to installdispatch@chargepoint.com. Review datasheets, site design, and installation guides defining ChargePoint specifications at: chargepoint.com/guides.

IMPORTANT: All installations must comply with local and regional code. ChargePoint provides concrete pad guidance in the CP6000 Site Design Guide that is applicable for most sites; however, pad sizes may vary. Ensure site drawings have been completed and approved by a structural engineer for this site.

Customer Information	
Customer name	
Customer contact name	
Customer contact phone	
Customer contact email	

Site Information	
Street and number	
City	
State	
Country	
Zip code	
Number of chargers to be installed	
Expected start of construction works	
Expected installation and commissioning date	

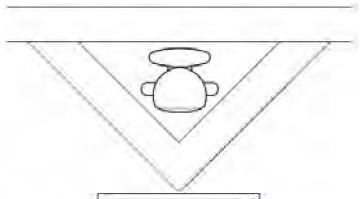
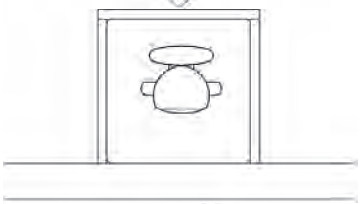
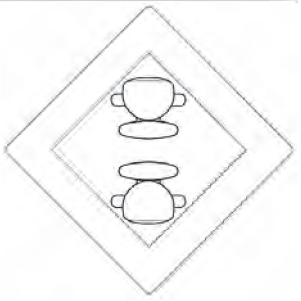
Site Contractor Information		
Contractor type	ChargePoint designated	[ ]
	Customer designated	[ ]
Contractor company name		
Contractor site lead name		
Contractor site lead phone		
Contractor site lead email		

Installer Information		
Installer type	ChargePoint recommended	[ ]
	Customer recommended	[ ]
Installation company name		
Installer contact name		
Installer contact phone		
Installer contact email		

Note: If the station installer arrives to install the charging station and finds these items incomplete, you will incur a separate re-dispatch fee.

Take the following photos for each location throughout the site construction process.

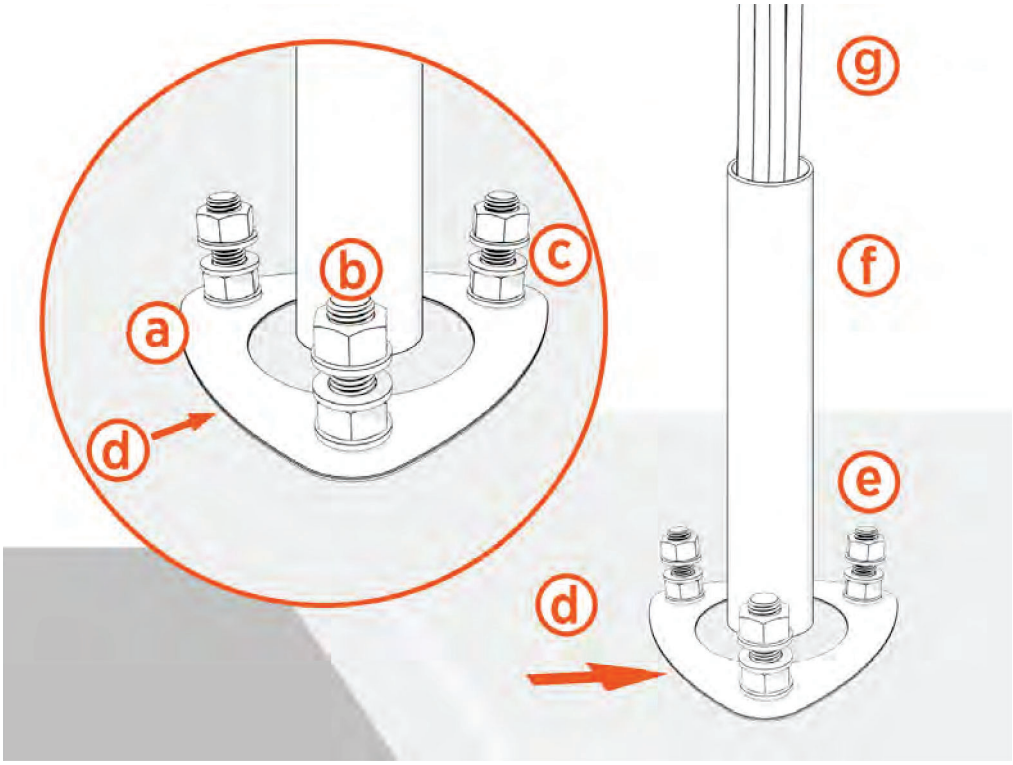
Required Pictures	
1. All trenching completed and conduit/ducting is in place.	
2. Concrete pad completed, showing anchor bolts and duct or conduit stub-ups in place. -or - Wall station location with flex conduit and wire for each station.	
3. Overall space around each mounting location, showing all service clearances are available.	
4. The electrical panel's specification label, to show total panel configuration and capacity.	
5. Open electrical panel with the dead front panel removed, showing terminations.	
6. The open electrical panel with the dead front panel on, showing breaker amperage ratings and labels for CP6000 connections.	
7. CP6000 charging station sites are oriented correctly. The front of the station must face the path of travel, for example.	
8. Circuit capacity.	

Civil Work, Pedestal Mount	
	ChargePoint recommends: 1. The concrete pad was designed and approved by a structural engineer for this specific site, or supports these specifications: • Concrete 2,500 PSI minimum - Follow concrete manufacturer mix recommendations • At least 600 mm (24 in) on each side, including depth • Follows one of the three recommended pedestal patterns in the Site Design Guide: In front of a curb 900 mm (3 ft) x 2 Area: 0.42 m^2 (4.5 ft^2) Volume: 0.26 m^3 (9 ft^3)  Behind a curb in a planter or berm 600 mm (2 ft) on each side Area: 0.37 m^2 (4 ft^2) Volume: 0.23 m^3 (8 ft^3)  Two stations back to back, centered between four spaces 900 mm (3 ft) on each side Area: 0.84 m^2 (9 ft^2) Volume: 0.51 m^3 (18 ft^3) -or- Existing concrete with: • A minimum concrete volume of 0.23 m^3 (8 ft^3) • A minimum concrete depth of least 150 mm (6 in) thick • Mounting bolts or chemical anchors (not expanding bolts) positioned at least 153 mm (6 in) from the edges of the pad when measured from the center of any bolt 
	2. Three anchor bolts must extend 60 mm (2 1/3 in) but not more than 100 mm (4 in) above the concrete, with two bolts in the front and one bolt behind the duct or conduit stub-up. Bolts are plumb and secure in concrete or epoxy.
	3. The center of the duct or conduit stub-up for a pedestal mount station with a CMK is at least 245 mm (9.65 in) from obstructions to the rear.
	4. Ducts or conduit stub-ups measure between 152 mm (6 in) and 590 mm (2 ft) above grade.
	5. Ensure any site slopes, walls, or fencing do not trap water around the charging station installation site. The system is only built to withstand water to the height of the duct or conduit stub-up.

IMPORTANT: You must use a ChargePoint CP6000 Concrete Mounting Template (CMT) for pedestal mount station installations. Refer to the CP6000 Site Design Guide on chargepoint.com/guides for more information.

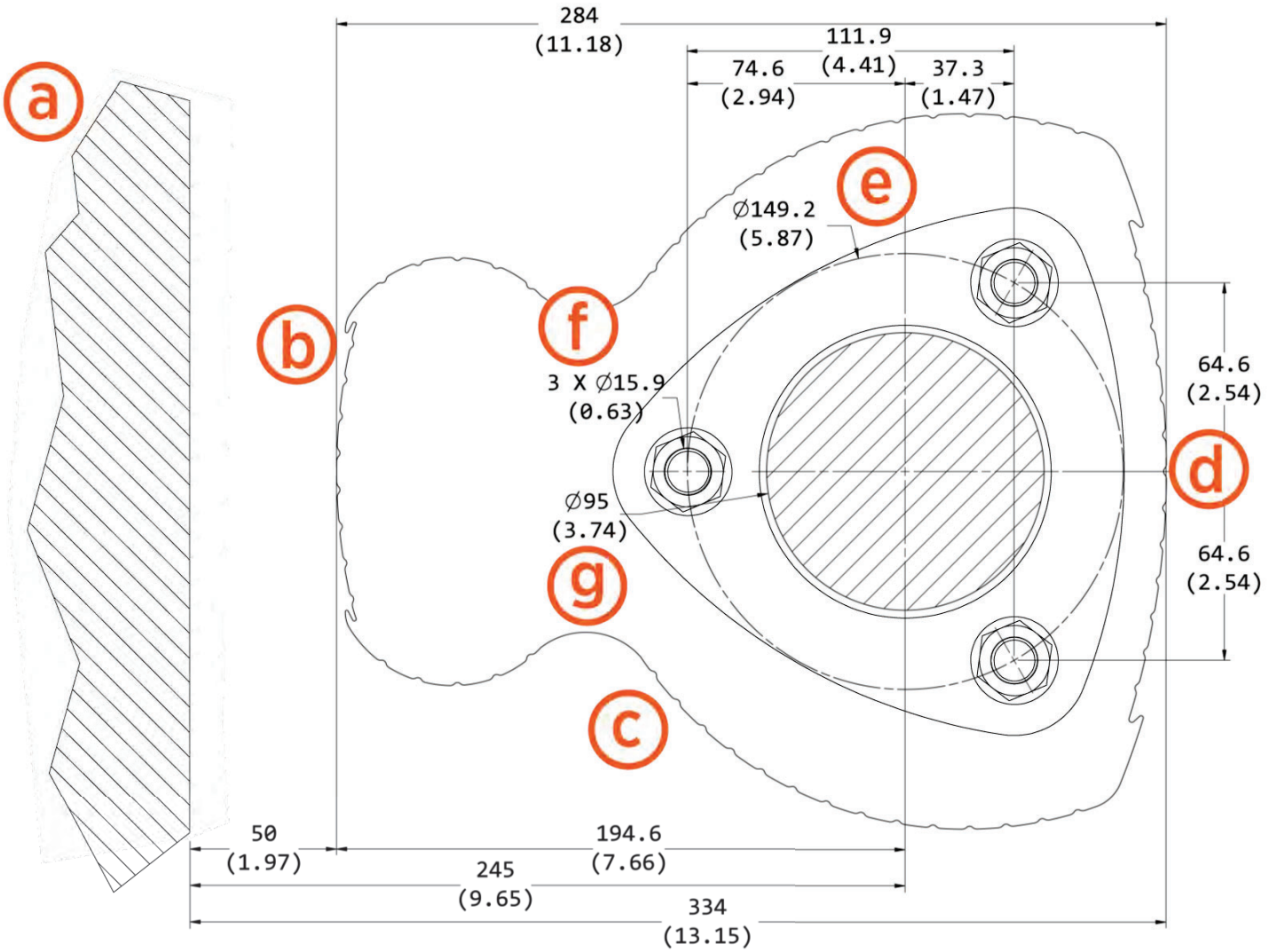
You should see the following:

a. Concrete mounting template
b. Three bolts set into concrete
c. Two nuts and three washers on each bolt
d. Template front
e. Bolts extending 60 mm (2 1/3 in) to 100 mm (4 in)
f. Conduit stub-up measuring 152 mm (6 in) to 590 mm (2 ft)
g. Approximately 1.5 m (5 ft) of service wiring
h. CPF50 adapter cover (only if replacing CPF50)

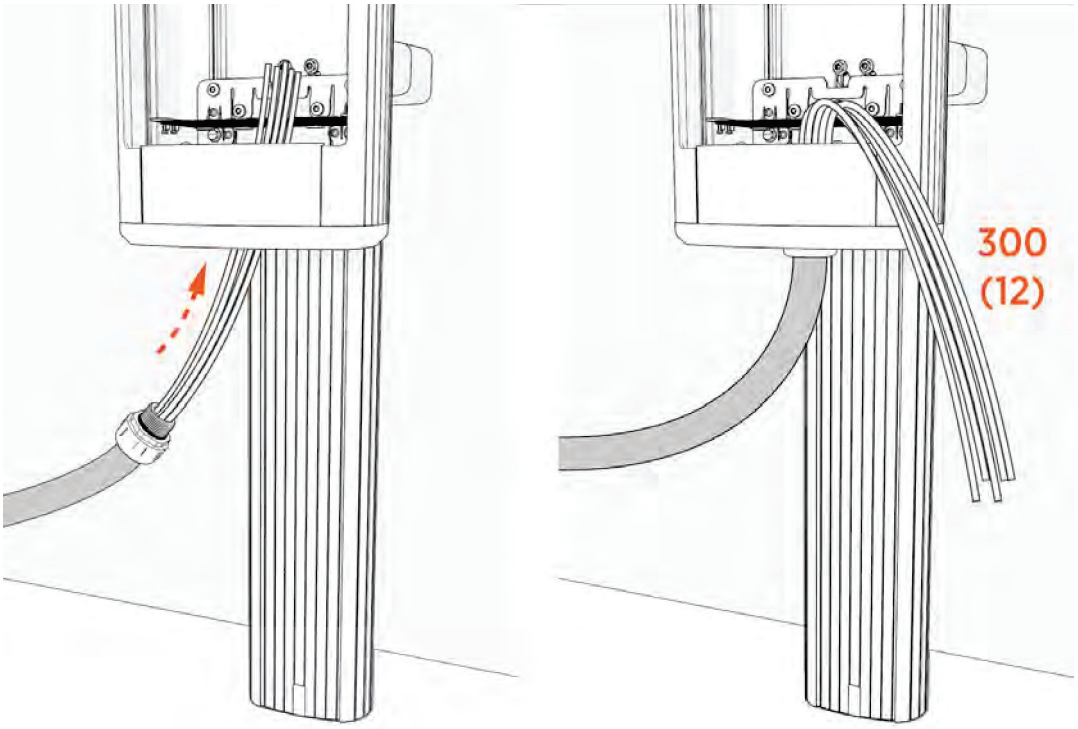


Pedestal Mount With CMK

Note: Images are not to scale. Measurements appear in metric units (mm), followed by imperial equivalents (inches).



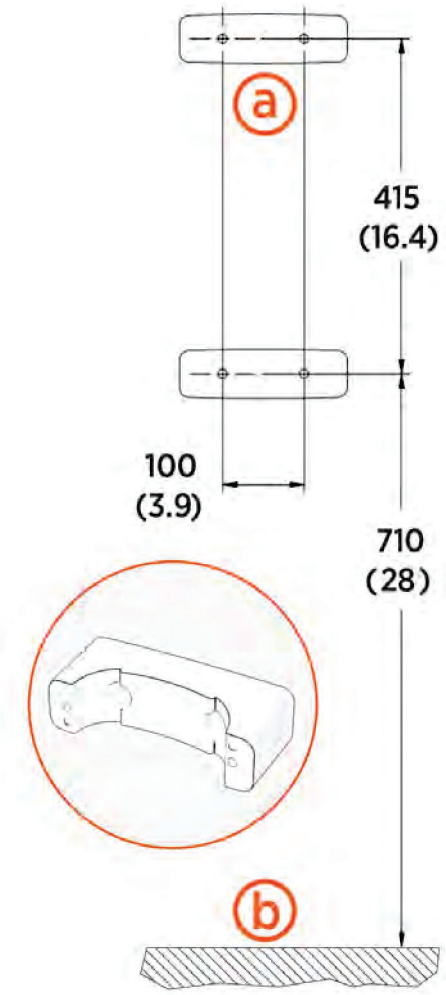
a. Wall
b. CMK footprint
c. Pedestal footprint
d. Front
e. Bolt circle
f. Bolt or anchor
g. Conduit stub-up within this area (new concrete only)

Civil Work, Wall Mount	
	1. Conduit brings wire to the station. Conduit diameter must be at least 19 mm (3/4 in) and cannot exceed 38 mm (1 1/2 in). If larger capacity is required, create two entry points, one on either side of the station, for parallel conductors.
	2. The length of wire available from the end of the conduit or the wall mount base needs to be at least 300 mm (12 in). **Note:** Measurements appear in metric units (mm), followed by imperial equivalents (inches). 

Wall Mount Bracket Hole Locations

Note: Images are not to scale. Measurements appear in metric units (mm), followed by imperial equivalents (inches).

a. Wall mount brackets
b. Ground level



Electrical Work	Select/Value
Electrical infrastructure has been completed in accordance with all applicable codes and ChargePoint specifications.	
Each of these types of non-GFCI circuit breakers feeds each port. Select the applicable configuration.	
Breaker type feeding each port	
Two pole non-RCD overcurrent protection	
One pole non-RCD overcurrent protection (circuit sharing)	
Circuit breaker rating:	20 A 30 A 40 A 50 A 60 A 70 A 80 A 100 A
Each circuit breaker is new or in good working order.	
Check each connection and ensure each one is clean and torqued to specifications.	
Breakers in the panel are labeled correctly.	
System neutral is bonded.	
The transformer nameplate shows that wiring is Wye(Y) connected, 3-phase or single phase with bonded neutral plus Ground. **Note:** Delta (floating or grounded) configuration is not supported.	
Specifications for wire used: Type AWG/mm^2 Insulation type Voltage rating Temperature rating	

Network Connectivity			
Validate Mobile Network and Carrier availability. 2G is only applicable for early version stations. If applicable, 4G Signal RSSP should be better than -90dB. A minimum of -85dB is recommended for good connectivity and smooth operation.			
Carrier name	**4G (dBi)**	**3G (dBi)**	**2G (dBi)**
1.			
2.			
3.			
Note: For 3G and 2G, is a signal repeater necessary? Are the readings in the table outside an acceptable range? The installation of signal repeaters is recommended for areas with poor cellular connectivity.			

Accessibility

Comply with regional accessibility laws, regulations, and ordinances. The charging station must not block ramps or pathways and the height of the interactive display cannot exceed the maximum height as dictated by local laws.

Signage

Refer to local and regional code to design the following elements for the site:

- Any required re-striping of parking spaces
- EV or Accessible EV signs
- EV or Accessible EV paint markings on and around the parking spaces

Site Comments

I, _____ hereby certify that the scope of work in this form has been correctly completed.

Signature	Date

Council Agenda Report

Department: Police
Cost Center: 8001
For Agenda of: 11/12/2024
Placement: Consent
Estimated Time: N/A

FROM: Rick Scott, Police Chief
Prepared By: Melissa Ellsworth, Senior Business Analyst

SUBJECT: AUTHORIZE THE POLICE DEPARTMENT TO APPLY FOR FY 2024-25 BUREAU OF JUSTICE ASSISTANCE EDWARD BYRNE MEMORIAL GRANT

RECOMMENDATION

1. Authorize staff to submit a grant application to the Bureau of Justice Assistance for the FY 2024-25 Edward Byrne Memorial Grant, amounting to $14,882; and
2. Authorize the City Manager or their designee to execute grant related documents and authorize the Finance Director to make the necessary budget adjustments upon the award of the grant.

POLICY CONTEXT

The recommended actions are consistent with the City of San Luis Obispo's Financial Management Manual, Section 740 - Grant Management Policy. The policy states that Council must approve all grant applications in excess of $5,000 and delegate receipt and contract execution to the City Manager.

DISCUSSION

The Edward Byrne Memorial Justice Assistance Grant (JAG) Program is the leading federal source of criminal justice funding to state and local jurisdictions. Administered by the Bureau of Justice Assistance, the JAG Program provides states, territories, tribes, and local governments with funding necessary to support a range of program areas.

The JAG Program is a non-competitive formula grant, and the funding allocation is based on the population and crime rate of a local jurisdiction. JAG funds awarded to a unit of local government may be used to hire additional personnel, purchase equipment, supplies, contractual support, training, technical assistance, and information systems for criminal justice or civil proceedings.

The amount allocated to the City of San Luis Obispo for FY 2024-25 is $14,882. The City has been a recipient of JAG funds for well over ten years.

The grant solicitation was released in September and the application deadline was a two-step process with deadlines on October 16th and October 22nd, 2024. If necessary, staff can withdraw the application or decline the award if the request is denied by Council.

Last year, JAG funds were used to purchase rifle-rated vests and a ceremonial uniform for the Department's Honor Guard team. This year, the department intends to use grant funds to replace an aging firearm for the Specialized Weapons and Tactics (SWAT) Team. SWAT responds to high-risk crisis situations that require an advanced level of specialized tactical expertise. Grant funds will also be used to purchase an Automated External Defibrillator (AED), and a medical trauma kit; these items will be stored in the sergeant's vehicle and be readily accessible for patrol use.

Public Engagement
This item is on the agenda for the November 12, 2024, City Council meeting and will follow all required postings and notifications. The public may have an opportunity to comment on this item at or before the meeting.

CONCURRENCE

The Director of Finance concurs with staff's recommendations.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act does not apply to the recommended action in this report because the action does not constitute a "Project" under CEQA Guidelines Section 15378.

FISCAL IMPACT

Budgeted: No
Budget Year: 2024-25
Funding Identified: Yes

Fiscal Analysis:

Funding Sources	Total Budget Available	Current Funding Request	Remaining Balance	Annual Ongoing Cost
Federal Grant – Edward Byrne Memorial JAG	14,882			
Total	**$14,882**	**$**	**$**	**$**

City matching funds are not required for this grant.

ALTERNATIVES

***Decline funding*.** This alternative is not recommended. This grant provides funding to local law enforcement agencies for specialized equipment purchases. With limited Department funds, it is advantageous to utilize grants to enhance safety in the community.

ATTACHMENTS

None

Council Agenda Report

Department: Fire
Cost Center: 8501
For Agenda of: 11/12/2024
Placement: Consent
Estimated Time: N/A

FROM: Todd Tuggle, Fire Chief
Prepared By: Nicole Vert, Business Analyst

SUBJECT: AUTHORIZE THE FIRE DEPARTMENT TO APPLY FOR SAN LUIS OBISPO OFF-HIGHWAY VEHICLE GRANT PROGRAM

RECOMMENDATION

1. Authorize the Fire Department to apply to the San Luis Obispo County Off-Highway Vehicle Grant Program to replace Utility Task Vehicle-2; and
2. Authorize the City Manager, or their designee, to execute the grant documents and approve the budget changes necessary to appropriate the grant amount upon notification that the grant has been awarded.

POLICY CONTEXT

The recommended actions are consistent with the City of San Luis Obispo's Financial Management Manual, Section 740 - Grant Management Policy. The policy states that Council approval is required for all grant applications in excess of $5,000. Council may delegate receipt and contract execution to the City Manager.

The work conducted under the grant is in line with the City's Major City Goal, Open Space, and Sustainable Transportation by improved accessibility to open space areas, maintaining the ability to provide rapid emergency services in remote areas.

DISCUSSION

Background

Off Highway Motor Vehicles (OHMV) operating on publicly accessible land in California must pay registration fees to the state and are the equivalent to vehicle registration. These registration fees are displayed on the vehicle and are commonly called California Green Stickers. A portion of the fees collected by the state are distributed to counties. The San Luis Obispo Board of Supervisors has approved a competitive grant program for the distribution of sixty percent (60%) of the County's annual receipts of these Green Sticker Fees to other governmental agencies and non-profit organizations for several eligible uses, including law enforcement entities and related equipment.

The City of San Luis Obispo is home to some of the busiest open space areas in the county. Over 200 people enjoy the mountain bike, hiking and off-highway trails operated by the City every day. These areas are difficult to reach by traditional motor vehicles and sometimes only accessible on foot or by helicopter. Routinely, there are incidents where individuals become injured, trapped, or lost and require prompt life saving measures and need extrication from these limited access areas where every minute is critical. The Utility Task Vehicle (UTV) is routinely requested by San Luis County Fire to assist with incidents outside the City limits in areas that include both East and West Cuesta Ridges as well as Reservoir Canyon to reach individuals that cannot be accessed with traditional rescue vehicles.

The City has one UTV purchased in 2017 through this Green Tag Fee Grant Program through the county. The Fire Department is requesting grant funds from the County's OHMV Grant Program to replace the aging UTV. The UTV has increased the ability to access these difficult areas and reach critical patients quickly. However, as a result of the frequent use, repairs on the UTV are increasing in both cost and time out of service. In the thirteen months prior to October 2024, the cost of repairs and upkeep on the UTV are over $5,000, over double the cost of the previous year.

Previous Council or Advisory Body Action
On November 14, 2023, Council Authorized the Fire Department to submit a grant application to San Luis Obispo County Off Highway Motor Vehicle grant program. The City submitted the grant request for a replacement UTV but was not selected for funding at that time.

Public Engagement
This item is on the agenda for the November 12, 2024 City Council meeting and will follow all required postings and notifications. The public will have an opportunity to comment on this item at or before the meeting.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act does not apply to the recommended action in this report, because the action does not constitute a "Project" under CEQA Guidelines Sec. 15378. If the work associated with the grant funding requires environmental review, staff will not proceed with the project until a review has been completed.

FISCAL IMPACT

Budgeted: Yes
Budget Year: 2025-26
Funding Identified: Yes

Fiscal Analysis:

Funding Sources	Total Budget Available	Current Funding Request	Remaining Balance	Annual Ongoing Cost
General Fund	$	$0	$	$500.00
State				
Federal				
Fees				
Other:				
Total	**$**	**$0**	**$**	**$500.00**

The total grant request is $57,799.09. This will allow for the purchase of a new UTV and all necessary accessories to be an emergency response vehicle. These accessories include a rescue skid, light bars, display module and other safety features not standard on a UTV. The application for this grant is in Fiscal Year 2024-25, however, if awarded the grant period is in Fiscal Year 2025-26, and that is when the City would receive the funds.

While many Mutual Aid assignments do generate revenue for the City, the Auto Aid response agreements with the nearby local agencies generally do not. There is a minimum commitment time of twelve hours before any payment will be received and these incidents rarely extend long enough to reach that time minimum. Since the UTV is in high demand in the City it does not leave the immediate response area for the longer Mutual Aid assignments that would generate revenue.

The OHV grant program does not require any City matching funds. The department has requested funds to fully fund a new UTV, plus necessary accompaniments for use as a rescue vehicle. If the grant is awarded to the City, the department estimates costs of $500.00 annually for ongoing maintenance which can be absorbed by the mechanic's current budget, as repairs are already budgeted and a new UTV would require fewer repairs than the current UTV.

ALTERNATIVES

Council could decide not to pursue the grant monies. This is not recommended by staff as fire service grant opportunities are limited and the grant funds would only serve to enhance the City's safety while increasing sustainability for the City by allowing funds on the fleet replacement schedule to be allocated elsewhere.

ATTACHMENTS

None

Department: Police
Cost Center: 8001
For Agenda of: 11/12/2024
Placement: Consent
Estimated Time: N/A

FROM: Rick Scott, Police Chief
Prepared By: Fred Mickel, Deputy Chief

SUBJECT: FISCAL YEAR 2024-25 DEPARTMENT OF JUSTICE OFFICE OF COMMUNITY ORIENTED POLICING SERVICES GRANT AWARD

RECOMMENDATION

1. Authorize the Police Department to accept the Fiscal Year 2024-25 Department of Justice, Office of Community Oriented Policing Services grant award in the amount of $250,000, subject to the approval of the additional two positions and identification of funding for the City's match requirement in the 2025-27 Financial Plan; and
2. Authorize the City Manager or their designee to execute grant related documents.

POLICY CONTEXT

The recommended actions are consistent with the City of San Luis Obispo's Financial Management Manual, Section 740 - Grant Management Policy. The policy states that Council must approve all grant applications in excess of $5,000 and delegates receipt and contract execution to the City Manager.

DISCUSSION

On June 4, 2024, the City Council approved staff's recommendation to submit a grant application to the Department of Justice, Office of Community Oriented Policing Services (COPS), in the amount of $250,000, with a City match amount of approximately $558,000. In the Council Agenda Report from June 4, 2024, which authorized the grant application, staff committed to returning to Council if the grant was awarded to seek further approvals.

On September 30, 2024, the COPS Office notified the department that the grant application was approved. If Council authorizes staff to accept the grant, the department will return to Council during the budget planning process to request the addition of two new full time police officer positions and the grant matching funds. The deadline to accept the grant award is November 14, 2024; however, the department can postpone using the grant funds until FY 2026-27 (the latest the funds can be used); there is also an option to withdraw completely from the grant after acceptance. This timeline should be sufficient for staff's budgetary

requests and Council's consideration during the budget planning process. The proposed additions are also supported by the department staffing study, which is in draft form now and will be finalized and is expected to be presented to Council in January 2025, ensuring alignment with identified staffing needs. This approach ensures that Council will have all the necessary information before approving the use of grant funds and associated staffing changes. If approved, the two regular full-time equivalent (FTE) police officers will be assigned to patrol but associated with the Community Action Team with a selected grant focus area of police-based response to persons in crisis.

The COPS Hiring Program will cover up to 75% of the entry-level salary and benefits for each approved position for a period of three (3) years (within a 5-year period of performance). There is a minimum cost share of 25% and the maximum federal share per position is $125,000 over the 3-year period (not per year, spanning the 3-year period). Agencies must retain each funded position for a minimum of 12 months following the 3-years of funding. Absorbing the positions through attrition is not allowed, and the grant-funded positions must be retained and funded through the City's General Fund.

Staff is recommending that the grant be accepted by the deadline with the understanding that the two additional regular FTE police officer positions (which would be net new) and funding sources for the City's match would need to be evaluated and addressed as part of the 2025-27 Financial Plan. Staff would not begin recruitment for the new positions, nor draw down or request payment of the grant funding from the Department of Justice unless the two additional positions and the City match funding are approved as part of the financial plan process. Should the positions and/or the City match funding not be approved in the 2025-27 Financial Plan, staff will terminate the grant agreement without any monetary penalty to the City.

Staffing Study

Currently, the department is working with a consultant to conduct a department-wide staffing study. A draft report of the staffing study has been completed and is on track to be finalized by December 2024. The draft findings recommend a need to add a minimum of six sworn patrol staff positions to better meet operational demands. Staff anticipates that the final report will confirm this recommendation and provide further insights supported by department-specific data analysis, industry best practices, and community desires and expectations for service. The Police Department anticipates presenting this budget item along with the final staffing study report, its findings, and recommendations to the City Council by January 2025, offering insights into optimal staffing to enhance departmental efficiency and community service.

Staffing Levels & Vacancy Rates

Police vacancy rates are a widespread challenge, driven by factors like high turnover, retirements, and a competitive job market. Law enforcement typically sees annual turnover rates of 5-10%.

Overall, the department's staffing levels have minimally changed in the past two decades. The department's sworn staffing levels in FY 2024-25 remain the same as twenty years ago. There are 61 total sworn positions, these positions include police officer, sergeant, lieutenant, deputy chief, and chief of police. Although the department has 46 approved full time equivalent police officer positions, it has been challenging to maintain a constant level of staffing (fully staffed). Since 2021, the department has experienced an average 6% vacancy rate for sworn positions.

In FY 2023-24, the department hired six police officers; turnover was due to retirements, officers moving out of the area, and some not successfully passing the field training program. A newly hired officer can either be a lateral officer (coming from another agency) or a cadet. Both take considerable amounts of time to fully transition into an independent officer who can fill shifts on their own. Typical lateral hires can take anywhere from 6.5 to 7.5 months with the background process and field training completion. Cadet training will be longer due to the six-month police academy. This long training period means even when vacancies are being filled, it takes significant time for recruits to become operational and provide needed relief to field teams.

The current level of sworn staffing in the police department is insufficient to meet the City's growing needs for effective public safety and community policing. Focusing solely on filling current vacancies misses the critical need for a strategic approach to long-term staffing, ensuring the department can sustainably address rising demands and respond to future challenges. With the assistance of this grant, adding FTEs helps plan for future turnover, maintain adequate service levels, and meet increasing demands. A balanced approach addresses both vacancies and staffing growth to ensure consistent public safety, consistent with the initial findings and recommendations in the anticipated department's staffing study.

Overtime

When the department has vacant officer positions, overtime is required to meet minimum staffing levels. The chart below reflects overtime specific to shift coverage for patrol.

Shift Coverage Overtime – Patrol			
	FY 21-22	**FY 22-23**	**FY 23-24**
Shift Coverage Hours	5,371	4,829	4,894

In FY 2023-24, overtime related to covering patrol shifts alone equated to approximately $518,000. One officer at mid-step salary and benefits is approximately $150,000. Total overtime expended (related to covering shifts) equates to at least 3.50 regular full time police officers.

By adding two additional positions, the department will reduce the need for overtime to cover shifts, leading to savings in overtime expenses. This increased staffing will help balance workloads, allowing the department to manage regular patrol shifts more effectively and potentially reducing overtime costs by up to two-thirds of what was previously expended. In addition, this staffing increase will immediately begin to reduce officer burnout, improve morale, while also improving officer safety and wellness, thus meeting several key objectives of the department's adopted Strategic Plan.

Public Engagement
This item is on the agenda for the November 12, 2024 City Council meeting and will follow all required postings and notifications. The public may have an opportunity to comment on this item at or before the meeting. The Police Advisory Council (PAC) and Police Roundtable advisory bodies to the department have been notified of the requested staffing increase and overall, they are in support of the increase in staffing. Additionally, they have been provided an opportunity to further engage with the office of the Chief of Police or the City Council.

CONCURRENCE

The Directors of Finance and Human Resources concur with staff's recommendations.

The Police Department has met and conferred with the Police Officers Association (POA) in accordance with Article 43 of the contract regarding staffing changes, and the POA supports the staff's recommendations.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act does not apply to the recommended action in this report because the action does not constitute a "Project" under CEQA Guidelines Section 15378.

FISCAL IMPACT

Budgeted: No Budget Year: 2024-29
Funding Identified: No

Fiscal Analysis:

Funding Sources	Total Budget (Grant Award)	Current Funding Request	Remaining Balance	Annual Ongoing Cost
Federal Funds COPS Grant Award	250,000			
General Fund (City Match)	0	0		See chart below

The grant requires a minimum 25% cash match, and the grantee must assume a progressively larger share of the cost each year.

The COPS grant program will support three years of funding within a 5-year period of performance (to accommodate the time needed for recruitment and hiring).

Agencies must retain each funded position for a minimum of twelve months following the three years of funding. The hired positions should be added to the agency's budget in addition to previously approved staffing levels. Absorbing these positions through attrition does not meet the retention requirements.

The chart below outlines estimated General Fund obligations by Fiscal Year and expected grant funding over the 5-year performance period for two police officers.

SALARY & BENEFITS – TWO POLICE OFFICERS

	YEAR 1	YEAR 2	YEAR 3	Total		YEAR 4	YEAR 5
COPS Grant	$88,873	$81,493	$79,634	$250,000		$0	$0
General Fund	$178,507	$185,886	$187,745	$552,138		$335,404	$351,134
Total	*$267,380*	*$267,379*	*$267,379*	*$802,138*		*$335,404*	*$351,134*

**Salary figures do not include contractual MOU adjustments which will be up for renegotiation in 2026.*

The grant period ends on September 30, 2029, and in order to meet the 3-year funding requirement to hire these positions, the following plan has been developed. Should Council authorize acceptance of the grant, staff recommends that the positions be considered for addition as part of the 2025-27 Financial Plan and that recruitment begin, at the earliest, in late summer 2025. However, if funding cannot be identified by the 2025-27 Financial Plan, the City would withdraw from the grant without penalty. Grant funds are not awarded up front; claims are submitted for reimbursement as costs are incurred.

The chart below reflects three scenarios for hiring options based on year (and the grant end date). Note that the amounts below reflect current costs for two Police Officer positions and do not factor in labor cost increases over the term of the grant.

City FY	FY 24 - 25	FY 25-26	FY 25-26	FY 26-27	FY 26-27	FY 27-28	FY 27-28	FY 28-29	FY 28-29	FY 29-30
Federal FY	10/1/24 - 9/30/25		10/1/25 - 9/30/26		10/1/26 - 9/30/27		10/1/2027 - 9/30/28		10/1/28 - 9/30/29	
	Yr 1		Yr 2		Yr 3		Yr 4		Yr 5	
Scenario 1	Hire in FY 24-25 (3 years of grant funding)									
Grant	88,873		81,493		79,634					
City	178,507		185,886		187,745					
Scenario 2			Hire in FY 25-26 (3 years of grant funding)							
Grant			88,873		81,493		79,634			
City			178,507		185,886		187,745			
Scenario 3					Hire in FY 26-27 (3 years of grant funding)					
Grant					88,873		81,493		79,634	
City					178,507		185,886		187,745	

ALTERNATIVES

***Decline Grant Award*.** The COPS grant award may be declined without any penalties to the City. Should this alternative be chosen, staff anticipates requesting authorization to submit a similar application in the future, following completion of the staffing study and approval to add new positions to the department as part of the upcoming Financial Plan process. It should be noted, however, that the COPS grant is a competitive process and may not be awarded in the future or at a time that would offset the immediate costs of adding positions that are needed for the Department.

ATTACHMENTS

None

Department: Community Development
Cost Center: 4008
For Agenda of: 11/12/2024
Placement: Public Hearing
Estimated Time: 30 Minutes

FROM: Timmi Tway, Community Development Director
Prepared By: Callie Taylor, Senior Planner

SUBJECT: PUBLIC HEARING TO CONSIDER A RESOLUTION TO ABANDON PORTIONS OF SLACK STREET AND TO CONSIDER A DETACHMENT TO ADJUST CITY LIMIT BOUNDARIES, WHICH ARE PROPOSED TO ACCOMMODATE CAL POLY FACULTY AND STAFF HOUSING AND CLEAN UP HISTORICAL CITY LIMIT BOUNDARIES NE

RECOMMENDATION

Adopt a Draft Resolution entitled, "A Resolution of the City Council of the City of San Luis Obispo, California, to Abandon portions of Slack Street Rights-of-Way and to direct City Staff to submit a Detachment Application to the San Luis Obispo Local Agency Formation Commission (LAFCO) (STAB-0038-2024 and ANNX-0219-2024)" to adjust City limit boundaries near Cal Poly University.

REPORT-IN-BRIEF

Applications have been submitted by Cal Poly University (Cal Poly) requesting right-of-way abandonment on Slack Street and a corresponding modification to the City limit line (i.e., detachment) in order to accommodate a faculty and staff housing project on the Cal Poly campus. Cal Poly is planning to construct a 33-unit single-family housing development, known as Vista Meadows, at the northeasterly corner of Slack Street and Grand Avenue. At the October 15, 2024 meeting, Council adopted a Resolution of Intention to Abandon the City right-of-way necessary to build the project and set a hearing date for November 12, 202,4 to consider and render a decision on the final Resolution of Abandonment. Consideration of Cal Poly's detachment request is being reviewed by the City Council concurrently with the final Resolution to Abandon at the November 12, 2024 public hearing.

The existing right-of-way on Slack Street is 70 feet in width on the east of Grand Avenue; however, street improvements are located on only the southern half of the right-of-way with approximately 22 feet of existing pavement. Cal Poly is proposing to improve the northern portion of the right-of-way and extend public improvements to a minimum of 37-feet in width. Cal Poly is requesting that the City abandon the unused most northerly 25-feet of right-of-way to facilitate the housing project. The new sidewalk and landscaped parkway on the north side is also proposed to be abandoned in order to transfer

maintenance and liability to Cal Poly, bringing the total width of abandonment to approximately 35-feet.

On the west side of Grand Avenue, a sidewalk was installed on Slack Street by Cal Poly in 2020 with an encroachment permit, issued by the City. The encroachment permit was conditioned to require future ongoing liability and maintenance to be provided by Cal Poly. Detachment and abandonment applications are currently being processed to transfer ownership and maintenance to Cal Poly to fulfil that condition. The current application for right-of-way abandonment includes both the new sidewalk on Slack Street east of Grand Avenue and the existing sidewalk on Slack Street west of Grand Avenue on Cal Poly's frontage. With abandonment, these sidewalks would be owned and maintained by Cal Poly, thereby removing liability and ongoing maintenance responsibilities from the City.

City boundary limits, which define the City's jurisdictional area, currently coincide with the existing right-of-way boundary at the northern edge of Slack Street on both east and west of Grand Avenue. A modification to the City limit boundary is proposed in conjunction with the street abandonment. A detachment application, which is the reverse of an annexation, is proposed to modify the City limit boundary to coincide with the proposed right-of-way edge on the northern side of Slack Street, both east and west of Grand Avenue. The area of detachment and abandonment includes only portions of Cal Poly's frontage which are fully built out with frontage improvements, including curb, gutter, sidewalk, and undergrounding of utilities. Areas of frontage that remain unimproved (including the far east portion of Slack Street past the Vista Meadows project and the far west portion of Slack Street near Longview Lane) will remain as City right-of-way and under City jurisdiction in order to ensure future frontage improvements are built to City standards.

A second detachment area is proposed on Hathway to adjust the City limit line to correct historical boundary inconsistencies at APN 052-082-028, which is owned and previously developed by Cal Poly University. The subject areas of the street abandonment and detachment applications are shown in Figure 1 below.

SITE DATA

Applicant	Cal Poly San Luis Obispo University
Zoning	Right-of-way, Public Facility (PF), and R-1
General Plan	Right-of-way, Public (PUB), and Low Density Residential (LDR)
Site Area	Slack Street abandonment and detachment: 1.72 ± acres APN 052-082-028 (Hathway) detachment: 3.18 ± acres
Environmental Status	Project is consistent with the Final Environmental Impact Report for the Cal Poly 2035 Master Plan and the EIR Addendum for the Slack and Grand Faculty/Staff Housing Project

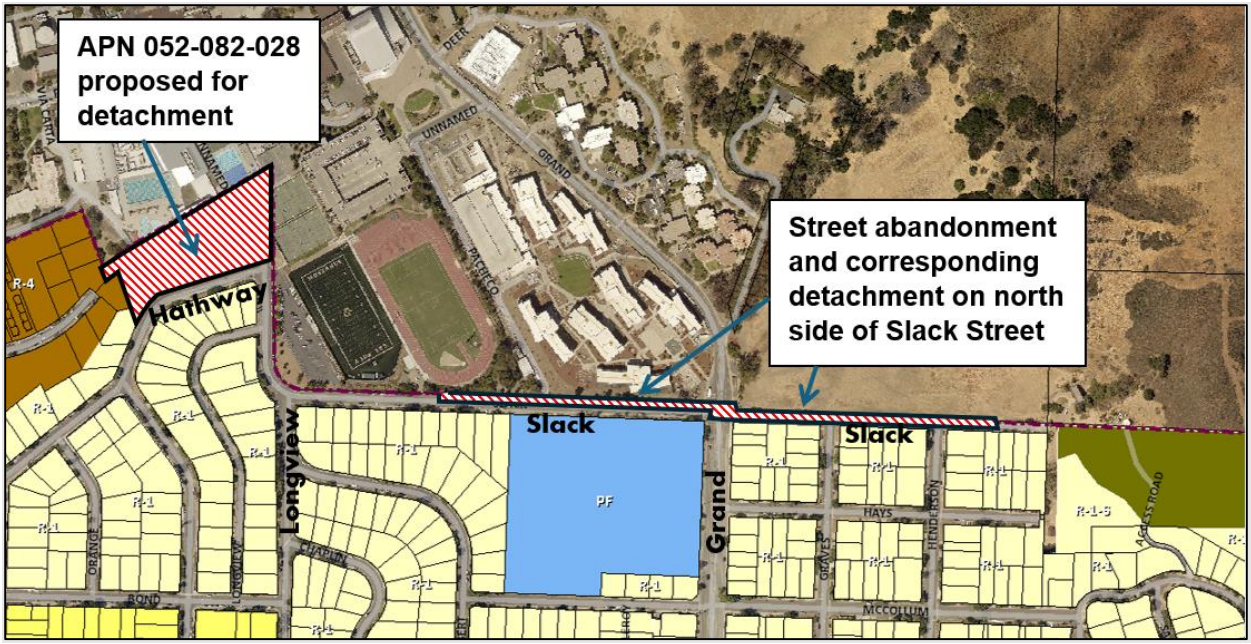


Figure 1: Location of Proposed Street Abandonment and Detachment

POLICY CONTEXT

California Government Code Section 65402 (Planning and Land Use, Administration of General Plan) requires the local planning agency to make a finding of General Plan conformance whenever a governmental entity proposes to acquire property, dispose of property, abandon a street, or construct or authorize a public building or structure within the limits of a city that has an adopted general plan. Additionally, per the City Public Works Department's policies and procedures for street abandonments (Procedure Number 708.14, effective November 1986), a public hearing at the Planning Commission is required to receive testimony and consider any constraints or conditions necessary for abandonment. On September 25, 2024, the Planning Commission reviewed the requests, considered constraints and conditions, made the determination of General Plan conformity, and recommended the City Council approve of the proposed applications.

On October 15, 2024, the Council adopted a "Resolution of Intention," which set a public hearing at Council (November 12, 2024) to consider a final "Resolution of Abandonment," which if adopted would then be recorded with the County Recorder. This process is required by California Streets and Highways Code Sections 8320-8324. The Cal Poly request for detachment to modify the City limit boundaries is being considered concurrently with the final Resolution of Abandonment on November 12, 2024. Council is being asked to consider adopting a resolution authorizing staff to submit a detachment application to the San Luis Obispo Local Agency Formation Commission (LAFCO).

The Cal Poly Vista Meadows faculty and staff housing project itself is located outside of City limits on State land and is not under consideration by the City Council. Only the portions of the improvements proposed within City right-of-way and within current City limits are under the City's jurisdiction.

PREVIOUS REVIEW

June 4, 2024: At an initiation meeting, the City Council authorized staff to proceed with processing the detachment application to modify the City limit boundary to accommodate the Vista Meadows project, as well as other City limit clean-up areas as needed to correct historical jurisdictional boundary crossings around Cal Poly. Applications to modify the City limit are referred to City Council for initiation and early consideration prior to staff processing the application, similar to a request to amend the City's General Plan (Municipal Code Section 17.130.020).

On June 4, 2024, Council expressed support for the Vista Meadows project but offered the following direction and guidance to staff:

1. The Vista Meadows project should include the necessary street lighting and traffic calming on Slack Street frontage.

2. The City needs to be a good neighbor to Cal Poly and at the same time protect the City's interest. The Vista Meadows project should pay for all costs including staff time required to advance this project. The Vista Meadows project should pay the standard permit fees that fund cost of services provided to the project.

3. Bring back for Council consideration information on the valuation of the right-of-way requested to be abandoned for the Vista Meadows project.

August 13, 2024: During closed session, Council provided direction to staff regarding negotiating parameters for the price and terms of payment related to the proposed real property transaction. This closed session discussion fulfilled item #3 identified at the June 4, 2024 Council meeting.

September 25, 2024: The Planning Commission reviewed the request on September 25, 2024, and made a determination of General Plan conformity as well as a recommendation to the City Council to adopt a "Resolution of Intention" to consider abandonment of the public right-of-way and to initiate a detachment by directing staff to submit an application to LAFCO. Planning Commission Agenda Correspondence, including an email from a neighbor on Slack Street and public comment at the hearing from a resident on Hays Street, was provided for Planning Commission consideration.

October 15, 2024: The City Council adopted a "Resolution of Intention," which set a public hearing at Council for November 12, 2024, to consider a final "Resolution of Abandonment" for portions of Slack Street.

DISCUSSION

Background

Cal Poly is planning to construct a 33-unit single-family housing development, known as Vista Meadows, on the lower portion of an 8.5-acre parcel at the north easterly corner of Slack Street and Grand Avenue, as shown in Figure 2.

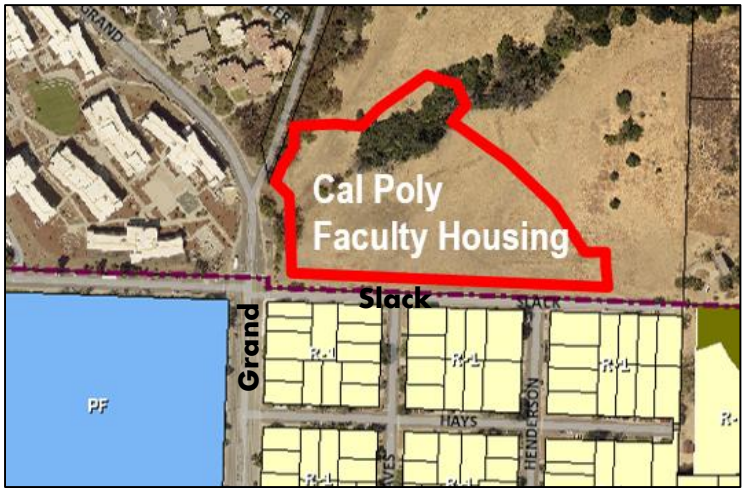


Figure 2: Location of Cal Poly's Housing Project at the northeast corner of Slack Street and Grand Avenue

Cal Poly is located outside City limits within the County of San Luis Obispo. The City of San Luis Obispo was a commenting agency on the Campus Master Plan and EIR, but does not have jurisdiction over the university. The State of California is a superior agency, which acts as the lead agency for CEQA and issues its own permits through the State architect for development on-site, rather than obtaining permits through the County of San Luis Obispo. While Cal Poly is located outside of City limits, the City of San Luis Obispo has jurisdiction of Slack Street, which is a City right-of-way within City limit boundaries. In order to build frontage improvements and widen Slack Street to City standard, Cal Poly must obtain an encroachment permit from the City. Cal Poly has submitted a street abandonment application to the City to request abandonment of unused right-of-way to facilitate development of the project.

Project Description

Slack Street East of Grand: Vista Meadows, Cal Poly Faculty and Staff Housing

Cal Poly's Vista Meadows housing development includes 33 single-family homes, proposed as two-story, detached 1,900 square foot residences with supporting amenities, for Cal Poly faculty and staff, including open space, a community garden, trails, and other recreational features. Fourteen (14) of the residences are proposed to be constructed along the north side of Slack Street between Grand Avenue and Henderson Avenue and would be accessed by individual driveways directly from Slack Street. A 5-foot sidewalk and landscaped parkway would be constructed along the northerly development frontage on Slack Street. Access to the remainder of the residential development would be provided by two internal streets intersecting Slack Street directly in line with City streets Henderson Avenue and Graves Avenue to the south. Parking for residents would be accommodated within the project site, with parking for two cars per residence (66 in total) within the ground floor of each residence with additional visitor parking provided in two surface parking lots along the extension of Henderson Avenue. The conceptual development plan is provided in Figure 3 below.

The proposed Cal Poly faculty and staff housing development would be developed at a density comparable to that of adjacent single-family housing located across Slack Street within the City of San Luis Obispo. Cal Poly has stated the proposed circulation network for the project site is intended to be compatible with existing adjacent circulation patterns in the area and intended to minimize project-related vehicular traffic on local residential streets, including Grand Avenue and Slack Street. The project objectives, as identified by the University, are to promote and enhance faculty and staff retention and recruitment by offering quality residential housing at attainable rates; to strengthen the Cal Poly-San Luis Obispo community connection; and to reduce faculty and staff commutes (i.e., vehicle miles traveled, or VMT), associated greenhouse gas (GHG) emissions, and impacts on neighborhood traffic.

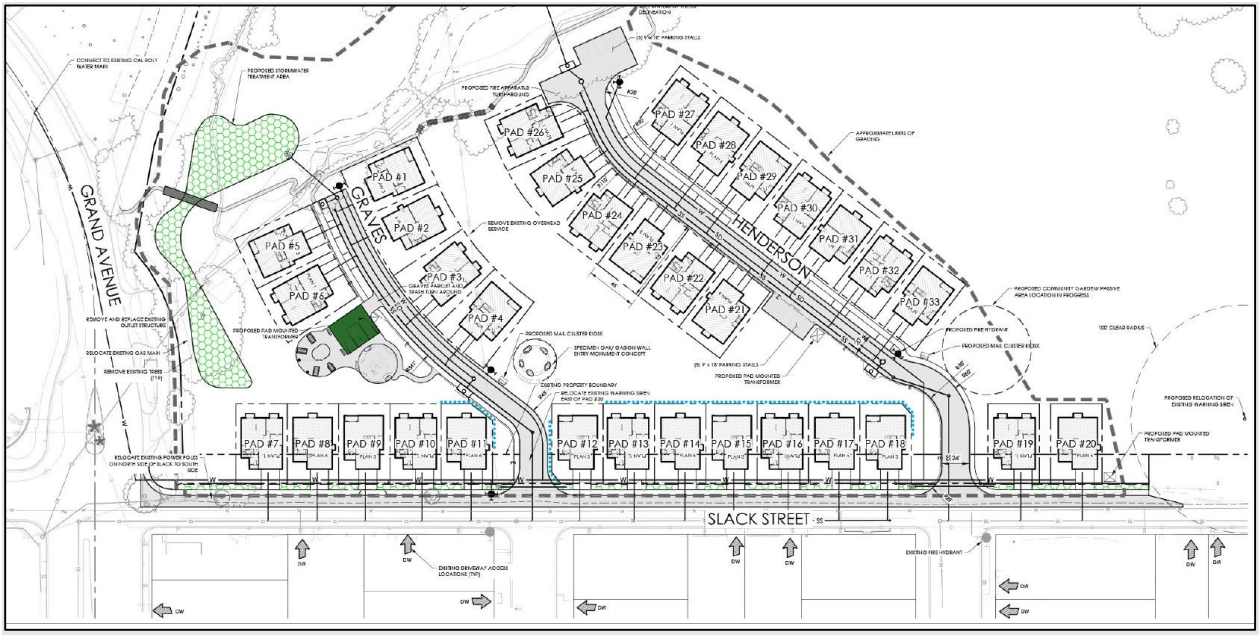


Figure 3. Vista Meadows, Cal Poly Faculty and Staff Housing Conceptual Development Plan

Slack Street is currently improved on only the southern half of the right-of-way, providing access to residential lots within the City of San Luis Obispo with approximately 22-feet of existing pavement and some intermittent sidewalks. The existing Slack Street right-of-way is 70 feet in width, with the northern portion (approximately 48 feet in width) currently unimproved. Cal Poly is proposing to improve the northern portion of the right-of-way to build out two 10-foot travel lanes and a 5-foot sidewalk with 4-foot landscaped parkway, along with curb and gutter. Existing on-street parking would remain on the south side of Slack Street. Overhead utilities on the northerly frontage would be undergrounded with the public improvements. Proposed public improvements for build-out of Slack Street are shown in Figure 4.

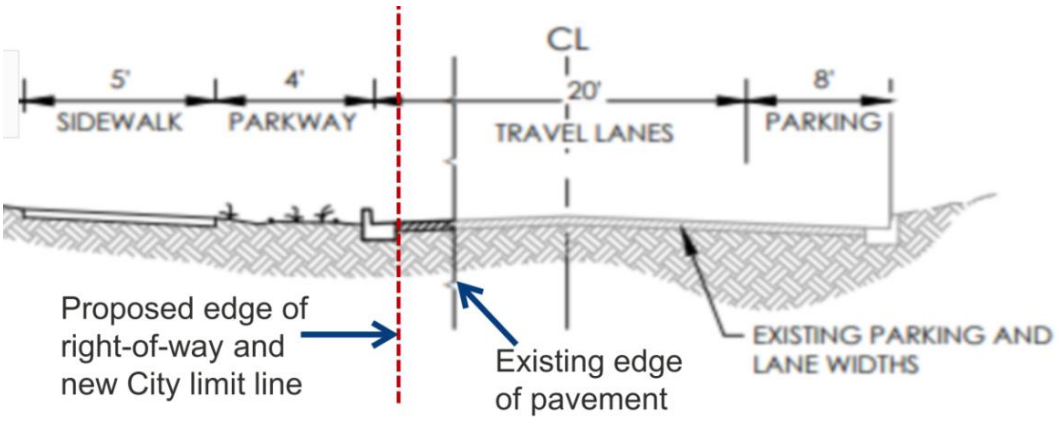


Figure 4. Proposed Frontage Improvements on Slack Street, Typical Section

Cal Poly has requested the City vacate the remaining 25-feet of unused right-of-way beyond the back of the northern edge of the new sidewalk to accommodate housing in this location, as well as abandonment of the new sidewalk and landscape parkway in order to transfer ownership and maintenance of those improvements to Cal Poly. The total width of abandonment is approximately 35-feet. The full 70-foot width of existing right-of-way is not needed for public street improvements. Construction of residential units are proposed here at the lower slope of the property in order to minimize grading impacts on the sloped Cal Poly property. If right-of-way is not approved for abandonment by the City in the area beyond the back of sidewalk, Cal Poly would have to redesign the housing project, which could result in additional grading, environmental, and aesthetic impacts on the sloped lot.

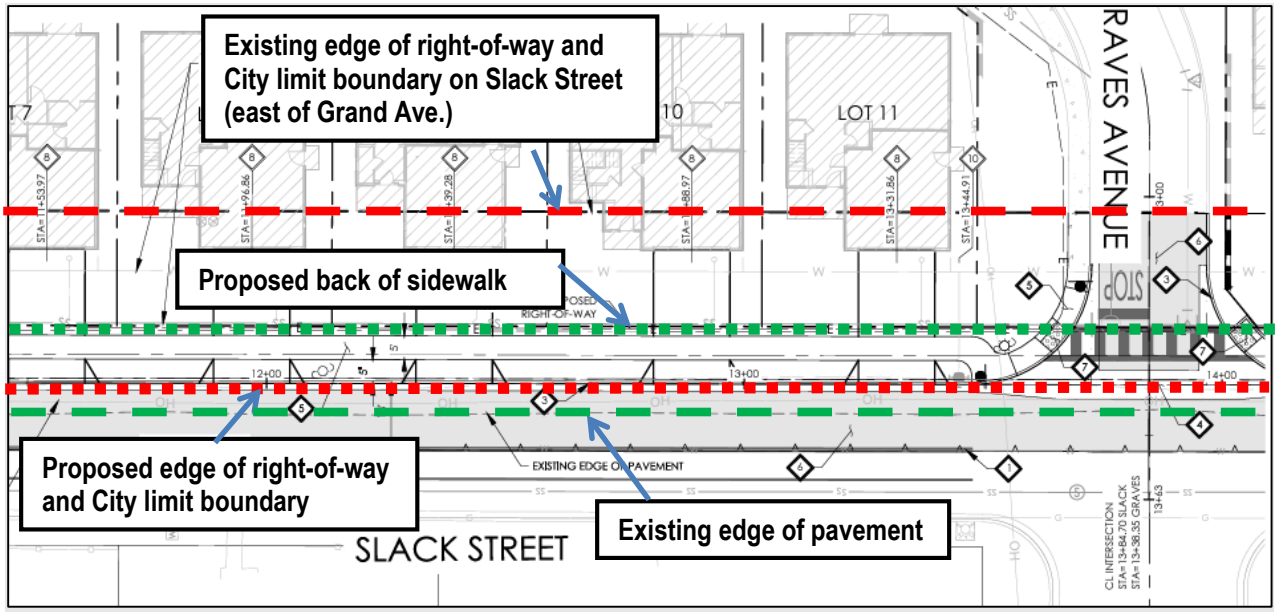


Figure 5. Existing and Proposed Right-of-way and City Limits on Slack Street

The right-of-way abandonment is proposed to extend to the front of curb where the concrete curb connects to the asphalt street. This would transfer ownership, as well as all maintenance and liability obligations, of the northern sidewalk and landscaped parkway on Cal Poly's frontage to Cal Poly, thereby removing liability and ongoing maintenance responsibilities from the City. A pedestrian access easement would be recorded to maintain public access on the new Slack Street sidewalk.

City limits, which define the City's jurisdictional area, currently coincide with the location of the existing right-of-way boundary at the northern edge of Slack Street. A modification to the City limit boundary is proposed in conjunction with the street abandonment. The existing and proposed right-of-way and City limits on Slack Street east of Grand Avenue are shown in Figure 5 above.

Frontage improvements and undergrounding of utilities, as well as the associated street abandonment and modification to the City limit line, are proposed on Slack Street only in the area directly fronting the new faculty and staff housing development. This is proposed on Slack Street between Grand Avenue to just past Henderson Avenue. The remaining 200-feet of Slack Street past Henderson would remain as existing, with no proposed changes to existing right-of-way or City limits beyond the Cal Poly development. The new faculty housing project will be served by water and sewer provided by Cal Poly through existing agreements with the City of San Luis Obispo and will utilize pipelines and connections that will be extended through the campus.

Slack Street West of Grand

Abandonment and detachment on Slack Street west of Grand Avenue is also being proposed with this application. The adjustments in this area are proposed to correspond with previous frontage improvements that were installed by Cal Poly in this area through encroachment permits in 2020 as part of the campus housing project in this location. A condition of that previous encroachment permit was to adjust the right-of-way boundary at a future date in order to remove the City's liability and maintenance obligations for Cal Poly's improvements in this area.

Figure 6. Area of abandonment west of Grand

Abandonment and detachment are being proposed on Slack Street west of Grand Avenue to the terminus of the existing sidewalk along the Cal Poly frontage, as shown in Figure 6 and Attachments C and D of this report. This will transfer liability and ongoing maintenance of the improved frontage to Cal Poly. A pedestrian access easement will be recorded to preserve public access along the frontage. Unimproved areas of the frontage further west will remain under City jurisdiction so that the City can ensure future frontage improvements are developed to City standards.

City Limit Modification (Detachment) at Hathway

City staff and Cal Poly have identified an additional area along the edge of Cal Poly as a candidate for clean-up to correct City limit boundary crossings from past development. An area of Cal Poly off Hathway near Mott gym (APN 052-082-028) is within City limits but is owned by Cal Poly and previously developed with campus improvements. This area is being proposed for inclusion with the current detachment application to correct historical jurisdictional boundary line inconsistencies, as shown in Figure 7.

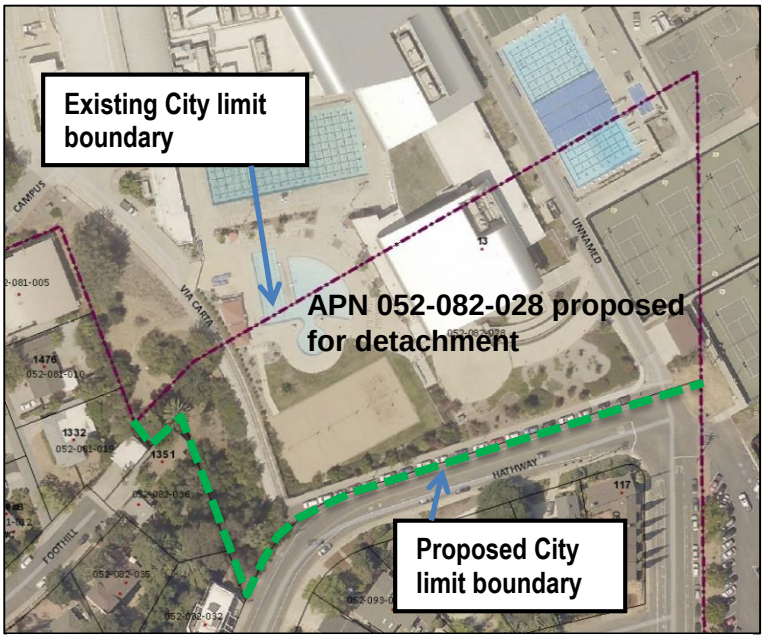


Figure 7. Additional City limit boundary modification on Hathway to correct historical inconsistency

City staff has initiated preliminary discussions with LAFCO regarding the detachment application, including potential boundary clean-up areas. LAFCO staff is supportive of the proposal to process a detachment application to create jurisdictional boundaries that coincide with Cal Poly's development limits.

PROJECT ANALYSIS

In order to abandon the right-of-way, the California Streets and Highways Code requires the abandonment to be found consistent with the City's General Plan and a finding that the right-of-way is unnecessary for present or prospective public use. In addition, continued access to any City or public utility services and improvements needs to be properly preserved. The Planning Commission considered constraints and conditions at the September 25, 2024 public hearing, and made a determination of General Plan consistency. The following paragraphs discuss pertinent issues associated with the abandonment and detachment requests for Council consideration.

Consistency with the General Plan
General Plan Land Use Element Policies 1.12.2, 2.6.1, and 2.6.5, and Housing Element Polices 8.3 and 8.6 are related to providing student and campus housing for Cal Poly. Circulation Element Policies 5.1.3, 8.1.3, and 9.1.1 require that new developments provide sidewalks, assume fair share of responsibility for constructing circulation improvements, and reduce or maintain vehicular speeds in residential neighborhoods. The proposed street abandonment and detachment to accommodate the Vista Meadows housing project are consistent with these policies:

- Land Use Element Policy 1.12.2: Cal Poly. The City shall encourage Cal Poly to provide additional on-campus housing, enhanced transit service, and other measures to minimize impacts of campus commuting and enrollment. Cal Poly should actively engage the community during updates or amendments to the Campus Master Plan and fully mitigate impacts to the City, including environmental and quality of life impacts to nearby neighborhoods.

- Land Use Element Policy 2.6.1. Cal Poly. The City shall encourage Cal Poly to build housing on campus for all of its students, to the extent feasible. On-campus housing should be expanded at least as fast as enrollment increases. Consideration shall be given for housing for faculty and staff as student enrollment increases.

- Land Use Element Policy 2.6.4. Location. The City shall encourage the development of housing likely to attract faculty, staff, and students to locate close to Cal Poly. The City shall work with Cal Poly to facilitate faculty and staff owning or renting housing in adjacent neighborhoods.

- Housing Element Policy 8.3. Encourage Cal Poly University to continue to develop on-campus student housing to meet existing and future needs and to lessen pressure on City housing supply and transportation systems.

- Housing Element Policy 8.6. Encourage Cal Poly University to develop and maintain faculty and staff housing, consistent with the General Plan.

- Circulation Element Policy 5.1.3 New Development. New development shall provide sidewalks and pedestrian paths consistent with City policies, plans, programs and standards. When evaluating transportation impact, the City shall use a Multimodal Level of Service analysis.

- Circulation Element Policy 8.1.3 Neighborhood Traffic Speeds. To the extent permitted under the California Vehicle Code, the City shall endeavor to reduce and maintain vehicular speeds in residential neighborhoods.

- Circulation Element Policy 9.1.1 New Development. The City shall require that new development assumes its fair share of responsibility for constructing new streets, bike lanes, sidewalks, pedestrian paths and bus turn-outs or reconstructing existing facilities.

The proposed Cal Poly applications for street abandonment and detachment will facilitate on-campus housing consistent with the General Plan goals listed above. The development will include public improvements on Slack Street, improving walkability and vehicular safety in the neighborhood. The housing units would not count toward meeting the City's RHNA allocation because the property is located just outside City limits; however, housing developed by Cal Poly University on State land will provide much needed Cal Poly housing as identified in the City's General Plan policies listed above.

Major City Goal: Housing and Homelessness
Housing and Homelessness has been identified as one of the 2023-25 Major City Goals. As such, the 2023-25 Financial plan includes efforts to support housing development. One of the stated objectives of the Cal Poly Vista Meadows project is to promote and enhance faculty and staff retention and recruitment by offering quality residential housing at attainable rates. The construction of new staff housing on Cal Poly land helps to implement and facilitate the City Council goal of providing housing to residents and employees. By abandoning a portion of the unused right-of-way and modifying the City limit line, the City can support construction of these housing units at the lower elevation of the property, thereby minimizing environmental impacts of grading further up on the hillside.

Future Circulation Needs
The General Plan Circulation Element designates Slack Street as a residential local street. The frontage improvements proposed on the east side of Grand for Vista Meadows and the existing frontage improvement on the west side of Grand are consistent with City standards. The abandonment of unused portions of Slack Street in these areas does not conflict with future circulation needs as frontages are or will be developed to City standard. The City has requested, and has included a condition of approval, to record a public pedestrian access easement on the sidewalk on the north side of Slack Street. The area is being abandoned so that Cal Poly will maintain the sidewalk and landscaped parkway, however, public access shall be preserved. With buildout of Slack Street to current City standard and recordation of a pedestrian access easement, the finding can be made that the right-of-way at this location is unnecessary for present or prospective public use.

Public Utilities
If the Council determines that the right-of-way should be abandoned, easements must be reserved for public and private utilities to the satisfaction of the City and the respective utility companies. These easements will ensure that the affected local utilities retain rights to repair and service their facilities within the area proposed for abandonment. The overhead lines are proposed to be installed underground as part of the frontage improvements in the area of the Vista Meadows development. Easements for existing utilities within the right-of-way areas will be reserved as a condition of the abandonment. The Public Works Department and Utilities Department support the proposed abandonment, subject to reservation of necessary easements.

Response to Council Items Requested:
The following discussion is provided to address Council questions and direction from the previous two meetings held in June and August 2024.

Item 1: Street Lighting and Traffic Calming
The Vista Meadows project design team and City Transportation Staff have worked together to incorporate traffic calming on Slack Street into the project. The Vista Meadows project will install City Standard Lighting requirements. The frontage improvements proposed by Vista Meadows for Slack Street, including lighting, are typical project conditions for development. Cal Poly will install two speed humps along Slack Street east of Grand as preemptive measures to avoid potential illegal speeding concerns following the widening of Slack Street by Cal Poly.

Item 2: Permit Fees and Costs Related to Staff Time
The Vista Meadows project has funded the appropriate planning fees for the detachment and street abandonment applications. These fees are identified in the Council's adopted fee schedule to cover staff time related to processing the discretionary applications, including review of proposals, public hearings at Planning Commission and City Council, and LAFCO applications and processing.

- $17,020.30 – Street Abandonment application
- $28,229.19 – Annexation/Detachment application

Cal Poly is a State agency of higher education and is entitled to fee exemptions that apply to the State so long as it is acting within the scope of its authority to promote educational purposes. Government Code 6103.6, prohibiting a fee or charge for "the mere issuance of a permit," also prohibits the assessment or collection of "any fee or charge from the State" for work done "in, under, on or about any city…street."

These provisions typically preclude the City from charging Cal Poly fees for issuance of an encroachment permit or for inspections. However, given that the proposed street abandonment and detachment applications are discretionary, the City Council may add conditions of approval as necessary to offset impacts of the proposed project. As discussed during the June 4, 2024 City Council meeting, Cal Poly was requested to pay the value of the encroachment permit fees to cover City staff plan check and inspection time for cost recovery associated with the project. The value of the encroachment permit issuance is $98,533.13, which includes both plan check and construction inspection fees. The encroachment permit fee amount is a function of the value of the public improvements Vista Meadows is installing, as shown in the engineer's report submitted by Cal Poly and as identified in the 2023-24 Comprehensive User Fee schedule. Cal Poly staff has stated that they will agree to this requirement.

Item 3: Valuation of Right-of-Way to be Abandoned for the Vista Meadows Project
The northern street frontage on Slack Street that is being requested for abandonment is owned by Cal Poly in fee title. Therefore, only the public right-of-way easement is being abandoned, and the underlying land does not transfer ownership. Cal Poly and the City

have negotiated parameters to fulfill the City Council's request for consideration of valuation. These parameters are consistent with the direction provided by City Council at closed session:

1. Cal Poly will own, maintain, and hold all liability obligations related to the curb, cutter, and sidewalk improvements installed within the abandonment area and has modified its abandonment and detachment applications to reflect its ongoing responsibilities for this area. Through this modification to the project, Cal Poly will not only undertake the work and costs to widen and install new sidewalk, curb, gutter, and lighting infrastructure on Slack Street east of Grand Avenue, it will also retain responsibilities for these new improvements, providing a net positive impact to the City's infrastructure.

2. Cal Poly has committed to recognizing the value of the right-of-way abandonment area when considering City acquisition of land for utilities (water reservoir) in the future at Cal Poly. Any dedication of land to the City for a water tank would require approval from the Cal Poly Board of Trustees, with consideration of a recommendation by Cal Poly staff.

3. Cal Poly will acknowledge the partnership with the City for the Vista Meadows project.

4. Cal Poly has agreed to pay the encroachment permit fees, including plan check and inspection, related to the frontage improvements on Slack Street.

5. Cal Poly will install traffic calming on Slack Street as part of the encroachment permit for frontage improvements.

These points have been incorporated into the Draft Resolution to Abandon portions of Slack Street (Attachment A) as conditions of approval.

Public Engagement

City staff has provided all required notifications in conformance with the Streets and Highways Code and Council noticing policy, including lot postings, legal ads in the newspaper, and neighborhood mailings. This application was review at City Council for initiation on June 4, 2024, at Planning Commission on September 25, 2024, and at City Council on October 15, 2024, and the public has had an opportunity of comment at each of these previous public meetings. The public has an opportunity to comment on this item at or before the November 12, 2024 City Council hearing. At the November 12, 2024 hearing, Council will consider the Resolution to Abandon and consider if the detachment application should be submitted to LAFCO.

CONCURRENCE

This staff report was reviewed and approved by the Community Development Department, Finance Department, City Attorney, and City Administration.

The project has been reviewed by various City departments including Community Development, Public Works, Utilities, and Fire. Comments have been communicated to the Cal Poly project team for incorporation into project design where appropriate. Reservation of easements and infrastructure maintenance responsibilities have been addressed. These departments' comments will be included as conditions of approval.

ENVIRONMENTAL REVIEW

California State University is the lead agency for the environmental review of the faculty/staff housing project. In May 2020, the California State University (CSU) Board of Trustees San Luis Obispo certified an EIR for the 2035 Campus Master Plan (State Clearinghouse No. 2016101003). Addendum #1 to the Final Environmental Impact Report was prepared and approved by the California State University on February 14, 2024, for the Slack and Grand faculty/staff housing project, and a Notice of Determination was filed. The project plans, including proposed right-of-way improvements, were analyzed under the EIR Addendum, which demonstrated in the substantive analysis that the proposed revised project would not result in new significant impacts or a substantial increase in the severity of significant impacts identified in the Campus Master Plan EIR. All applicable mitigation measures identified in the Campus Master Plan EIR and included in the adopted Mitigation Monitoring and Reporting Program are part of the project and are listed in the EIR Addendum. The complete environmental analysis, including project plans and project description, and the complete 2035 Cal Poly Campus Master Plan can be viewed on the Cal Poly website.

The Draft Resolution of Abandonment which is being considered by Council includes CEQA findings. The proposed street right-of-way abandonment and detachment applications are consistent with the Final Environmental Impact Report for the Cal Poly 2035 Master Plan (State Clearinghouse No. 2016101003) certified in May 2020 by the California State University (CSU) Board of Trustees San Luis Obispo, and the EIR Addendum #1 approved by the California State University on February 14, 2024, for the Slack and Grand faculty/staff housing project. In addition, the adjustment of City limits at the proposed locations west of Grand Avenue and on Hathway qualify for a Class 19 CEQA categorical exemption, which exempts annexations containing existing public structures developed to the density allowed by the current zoning.

FISCAL IMPACT

Budgeted: N/A Budget Year: 2023-25
Funding Identified: N/A

Fiscal Analysis:

Funding Sources	Total Budget Available	Current Funding Request	Remaining Balance	Annual Ongoing Cost
General Fund	$0	$0	$0	$0
State				
Federal				
Fees				
Other:				
Total	**$0**	**$0**	**$0**	**$0**

There will be no major fiscal impact related to the proposed project. There will be a minor future ongoing cost savings to the City associated with Cal Poly assuming maintenance and liability of the sidewalks on the northerly side of the Slack Street frontage. The sidewalk west of Grand Avenue was installed a few years ago, and the sidewalk east of Grand Avenue will be installed with the Vista Meadows housing project, therefore the City has not had major maintenance costs associated with these areas in the past. Future maintenance of these sidewalks by Cal Poly will create a future cost savings to the City. As noted in the discussion above, the applicant is required to fund the review and processing of the proposed applications, including the encroachment permit, street abandonment, detachment, and any associated analysis.

ALTERNATIVES

1. ***The Council may choose to adopt the resolution with modifications to any of its findings or conditions of approval.***
2. ***The Council may choose to adopt a part of the request but not all, such as approving only the Vista Meadows areas (east of Grand Avenue) but not the areas west of Grand, or approving the abandonment but not the detachments.*** This alternative is not recommended as it would create parcels that exist partially within the City and partially within the County (dual jurisdiction).
3. ***The Council may choose to not adopt the Resolution to Abandon and/or the Resolution of Detachment, thereby denying the abandonment and/or or detachment, based on findings that the abandonment and/or detachment is inconsistent with the General Plan, or other policies, or that the street is needed for present or prospective public use.*** This is not a preferred alternative as it would require Cal Poly to redesign the Vista Meadows project to relocate the residential units outside of the existing right-of-way. Moving the residential units further to the north would have additional environmental impacts as it would require additional grading on the steeper slopes of the property. In addition, the City would retain the existing right-of-way, including maintenance and liability, associated with new and existing sidewalks on the north side of Slack Street along Cal Poly frontage.
4. ***The Council may continue the request.*** If the Council continues action, then specific direction should be given to staff and the applicant regarding further information needed.

ATTACHMENTS

A - Draft Resolution to Abandon portions of Slack Street and submit a Detachment Application to LAFCO
B - PC Resolution No. 1091 (2024 Series) recommending City Council approve Slack Street Abandonment and Detachment
C - Legal Description of Slack Street Vacation (Right-of-way Abandonment)
D - Legal Description of Slack Street and Hathway Detachments (City Limit Adjustment)
E - Map of Slack Street and Hathway Detachments (City Limit Adjustment)
F - Conceptual Site Plan, Cal Poly Vista Meadows Faculty and Staff Housing

RESOLUTION NO. _____ (2024 SERIES)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN LUIS OBISPO, CALIFORNIA, TO ABANDON PORTIONS OF SLACK STREET RIGHTS-OF-WAY AND TO DIRECT CITY STAFF TO SUBMIT A DETACHMENT APPLICATION TO THE SAN LUIS OBISPO LOCAL AGENCY FORMATION COMMISSION (LAFCO) (STAB-0038-2024 AND ANNX-0219-2024)

WHEREAS, the Cal Poly 2025 Campus Master Plan was approved by the CSU Board of Trustees in May 2020, along with a Final environmental Impact Report. The Campus Master Plan is a long-range planning document that guides the development and use of the University's 1,321 -acre main campus, addressing all aspects of future physical development and land use on the campus to accommodate growth in student enrollment and in fulfillment of Cal Poly's academic mission. On February 14, 2024 the California State University approved EIR Addendum #1 for the Slack and Grand faculty/staff housing project, which addressed site constraints and feasibility for approval of a 33-unit single family residential development for Cal Poly staff and faculty, known as Vista Meadows, on a site approximately 8.5 acres in size; and

WHEREAS, an application has been submitted by Cal Poly University to request abandonment of approximately 35-feet of right-of-way width in the area adjacent to the Vista Meadows project in order to facilitate the Vista Meadows housing project. Abandonment of the new sidewalk to be installed in front of Vista Meadows, as well as sidewalk recently installed by Cal Poly on the west side of Grand Avenue, is proposed in order to transfer ownership, maintenance, and liability of the developed sidewalk frontage on Slack Street to Cal Poly; and

WHEREAS, a corresponding application for detachment has been submitted by Cal Poly to ensure that the City limit boundaries match the property boundaries associated with the areas of abandonment on the northern Slack Street frontage adjacent to Cal Poly. APN 052-082-028 on Hathway is also proposed for detachment in order to correct City limit boundaries at this location, as APN 052-082-028 is currently owned and previously developed by Cal Poly; and

WHEREAS, the Planning Commission of the City of San Luis Obispo conducted a Public Hearing in the Council Chamber of City Hall, 990 Palm Street, San Luis Obispo, California, on September 25, 2024, for the purpose of considering applications STAB-0038-2024 and ANNX-0219-2024, including making a General Plan conformity determination per State law, for considering constraints and conditions for the proposed right-of-way abandonment, and for formulating a recommendation to the City Council on a request for abandonment of excess street rights-of-way on portions of Slack Street and for detachment to modify City limit lines; Cal Poly University, applicant; and

WHEREAS, research of the title report shows that the City of San Luis Obispo does not have fee ownership of land underlying the street rights-of-way on Slack Street; and

WHEREAS, the Planning Commission found that the proposed rights-of-way abandonment is consistent with the City's General Plan, and recommended that the City Council approve the abandonment, based on findings and subject to conditions as indicated in the Planning Commission Resolution, incorporated herein by reference as Exhibit A; and

WHEREAS, the City Council of the City of San Luis Obispo considered the Resolution of Intent in the Council Chamber of City Hall, 990 Palm Street, San Luis Obispo, California, on October 15, 2024, pursuant to a proceeding instituted under application STAB-0038-2024, Cal Poly University, applicant as required by California Streets and Highways Code Section 8320; and

WHEREAS, the City Council of the City of San Luis Obispo held a duly noticed public hearing on November 12, 2024 in the Council Chamber of City Hall, 990 Palm Street, San Luis Obispo, California, to consider the Resolution to Abandon portions of Slack Street rights-of-way and to direct City staff to submit a detachment application to LAFCO, pursuant to a proceeding instituted under application STAB-0038-2024 and ANNX-0219-2024, Cal Poly University, applicant, as required by California Streets and Highways Code Section 8320; and

WHEREAS, notices of said City Council public hearing were made at the time and in the manner required by law; and

WHEREAS, the City Council has duly considered all evidence, including the testimony of the applicant, interested parties, and the evaluation and recommendations by staff, presented at said hearing.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of San Luis Obispo as follows:

SECTION 1. **Findings.** Based upon all the evidence, the City Council makes the following findings to abandon of a portion of Slack Street and to initiate the process of detachment of a portion of Slack Street and property on Hathway from the City of San Luis Obispo by authorizing staff to make application for detachment to the San Luis Obispo Local Agency Formation Commission (LAFCO).

1. The proposed right-of-way abandonment, with the reservation of appropriate utility and access easements, is consistent with the General Plan because it is no longer needed for present or future public purposes since this portion of the road will be improved to City standards with the Vista Meadows housing project.

2. The right-of-way abandonment will benefit the general public by allowing private management of the driveway entries, allowing pedestrian and vehicular circulation improvements, allowing for private maintenance of proposed and existing private drainage facilities, landscape areas, and sidewalks, eliminating unused right-of-way, and eliminating the City's costs for maintaining infrastructure within the right-of-way that is being abandoned.

3. The proposed abandonment and detachment are consistent with the General Plan, including Land Use Element Policies 1.12.2, 2.6.1, and 2.6.5, and Housing Element Polices 8.3 and 8.6 related to campus housing for Cal Poly, and Circulation Element Policies 5.1.3, 8.1.3, and 9.1.1 which require that new developments provide sidewalks, assume fair share of responsibility for constructing circulation improvements, and reduce or maintain vehicular speeds in residential neighborhoods.

4. In accordance with the public hearing duly held on November 12, 2024, pursuant to Section 8300 et seq. of the California Streets and Highways Code, the City Council finds and determines that the portion of public way, as described and shown on the map and legal descriptions, attached hereto and incorporated herein, is not necessary for present or future public street purposes.

5. The detachment of areas on Slack Street and APN 052-082-028 on Hathway will create appropriate jurisdictional boundaries for properties at Cal Poly, including correction of historical boundary inconsistencies, and will prevent properties from having dual jurisdiction upon abandonment of right-of-way.

6. The proposed right-of-way abandonment and detachments are consistent with the Final Environmental Impact Report for the Cal Poly 2035 Master Plan (State Clearinghouse No. 2016101003) certified in May 2020 by the California State University (CSU) Board of Trustees San Luis Obispo, and the EIR Addendum #1 approved by the California State University on February 14, 2024, for the Slack and Grand faculty/staff housing project. In addition, the adjustment of City limits at the proposed locations west of Grand Avenue and on Hathway qualify for a Class 19 CEQA categorical exemption, which exempts annexations containing existing public structures developed to the density allowed by the current zoning.

SECTION 2. Approval. The City Council does hereby adopt a resolution to abandon a portion of Slack Street and approve the filing of an application for detachment of a portion of Slack Street and property on Hathway with the San Luis Obispo Local Agency Formation Commission (LAFCO), subject to the following conditions:

1. The new monuments set to describe the boundaries of Slack Street and the adjoining property corners for all affected parcels shall be documented by a Record of Survey.

2. Public and private utility companies shall receive notice of vacation. Reservation of easements for existing public utilities, including water and sewer, shall be required, to the satisfaction of the respective utility companies, along with any revisions to those facilities as a result of development of the Vista Meadows project on Slack Street.

3. Any required easements for purposes of access and drainage shall be recorded concurrent with or prior to recordation of a City Council resolution vacating previous offers of dedication.

4. All required pictorial exhibits and/or legal descriptions necessary to complete the abandonment process shall be provided by the project applicant to the satisfaction of the Public Works Director. All exhibits and/or legal descriptions shall be prepared by a Licensed Land Surveyor or Civil Engineer who is authorized to practice Land Surveying, in accordance with the California Business and Professions Code Section 8700 et seq.

5. Reservation of an easement for pedestrian access on the northern sidewalk on Slack Street frontage (both east and west of Grand Avenue), or a separate pedestrian access easement, shall be recorded prior to recordation of abandonment, to the satisfaction of the City Engineer and the City Attorney, for preservation of public pedestrian access along the sidewalk.

6. A revision to encroachment permit ENCR-0470-2024 shall be submitted by the applicant to include two (2) speed humps on Slack Street for traffic calming. The design of the speed humps shall be to the satisfaction of the Public Works Director. Speed humps shall be installed prior to permit final.

7. The applicant shall submit payment for encroachment permit ENCR-0470-2024, in accordance with the City's 2023-24 Comprehensive User Fee schedule, to reimburse the City for staff time associated with plan check and construction inspection for public improvements on Slack Street.

8. Cal Poly has committed to supporting a future land value offset for City acquisition of land for utilities (water reservoir) at Cal Poly as a land exchange for the abandonment of 1.72 ± acres right of way on Slack Street.

9. Conditions of Approval shall be fulfilled prior to recordation of the City Council Resolution of Abandonment. Recordation of the City Council Resolution of Abandonment with the County Recorder shall complete the action to abandon right-of-way on Slack Street.

10. Informational note: the abandonment does not constitute creation of a separate lot or a potential future subdivision.

SECTION 3. The City Clerk shall cause a certified copy of this Resolution of Abandonment, duly attested under the seal of the City, to be recorded in the Office of the San Luis Obispo County Recorder.

Upon motion of Council Member _____, seconded by Council Member _____, and on the following roll call vote:

AYES:
NOES:
ABSENT:

The foregoing resolution was adopted this _____ day of _____ 2024.

_____
Mayor Erica A. Stewart

ATTEST:

_____
Teresa Purrington
City Clerk

APPROVED AS TO FORM:

_____
J. Christine Dietrick
City Attorney

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of San Luis Obispo, California, on _____.

_____
Teresa Purrington
City Clerk

RESOLUTION NO. PC-1091-2024

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF SAN LUIS OBISPO RECOMMENDING THE CITY COUNCIL ADOPT A RESOLUTION OF INTENTION TO ABANDON A PORTION OF SLACK STREET AND RECOMMENDING CITY COUNCIL APPROVE THE DETACHMENT OF ABANDONED AREAS ON SLACK STREET AND PROPERTY ON HATHWAY FROM THE CITY OF SAN LUIS OBISPO (CAL POLY SAN LUIS OBISPO UNIVERSITY) ANNX-0219-2024, STAB-0038-2024

WHEREAS, a duly noticed Public Hearing before the Planning Commission of the City of San Luis Obispo was held on September 25, 2024, in the Council Chamber of City Hall, 990 Palm Street, San Luis Obispo, California, for the purpose of considering applications ANNX-0219-2024 and STAB-0038-2024, a request to abandon a portion of Slack Street and a proposed detachment of a portion of Slack Street and a property on Hathway; and

WHEREAS, said public hearing was for the purpose of reviewing the proposed abandonment of street right-of-way for conformity with the City's General Plan per State law, for considering constraints or conditions for the proposed right-of-way abandonment per City policy, and forwarding the abandonment and detachment recommendations to the City Council of the City of San Luis Obispo; and

WHEREAS, notices of said public hearing were made at the time and in the manner required by law; and

WHEREAS, the Planning Commission has duly considered all evidence, including the testimony of the applicant, interested parties, and the evaluation and recommendations by staff, presented at said hearing.

NOW, THEREFORE, BE IT RESOLVED by the Planning Commission of the City of San Luis Obispo as follows:

Section 1. Findings. Based upon all the evidence, the Commission makes the following findings in support of the intention to abandon of a portion of Slack Street as a recommendation to City Council, and recommends the City Council initiate the process of detachment of a portion of Slack Street and property on Hathway from the City of San Luis Obispo by authorizing staff to make application for detachment to the San Luis Obispo Local Agency Formation Commission (LAFCO).

1. The proposed right-of-way abandonment, with the reservation of appropriate utility and access easements, is consistent with the General Plan because it is no longer needed for present or future public purposes since this portion of the road will be improved to City standards with the Vista Meadows housing project.

2. The right-of-way abandonment will benefit the general public by allowing private management of the driveway entries, allowing pedestrian and vehicular

circulation improvements, allowing for private maintenance of proposed and existing private drainage facilities, landscape areas, and sidewalks, eliminating unused right-of-way, and eliminating the City's costs for maintaining infrastructure within the right-of-way that is being abandoned.

3. The proposed abandonment and detachment are consistent with the General Plan, including Land Use Element Policies 1.12.2, 2.6.1, and 2.6.5, and Housing Element Polices 8.3 and 8.6 related to campus housing for Cal Poly, and Circulation Element Policies 5.1.3, 8.1.3, and 9.1.1 which require that new developments provide sidewalks, assume fair share of responsibility for constructing circulation improvements, and reduce or maintain vehicular speeds in residential neighborhoods.

4. The detachment of areas on Slack Street and APN 052-082-028 on Hathway will create appropriate jurisdictional boundaries for properties at Cal Poly, including correction of historical boundary inconsistencies, and will prevent properties from having dual jurisdiction upon abandonment of right-of-way.

5. The proposed right-of-way abandonment and detachments are consistent with the Final Environmental Impact Report for the Cal Poly 2035 Master Plan (State Clearinghouse No. 2016101003) certified in May 2020 by the California State University (CSU) Board of Trustees San Luis Obispo, and the EIR Addendum #1 approved by the California State University on February 14, 2024 for the Slack and Grand faculty/staff housing project.

Section 2. Recommendation. The Planning Commission does hereby recommend the City Council adopt a resolution of intention to abandon a portion of Slack Street and recommends the City Council approve the filing of an application for detachment of a portion of Slack Street and property on Hathway with the San Luis Obispo Local Agency Formation Commission (LAFCO), subject to the following conditions.

1. The new monuments set to describe the boundaries of Slack Street and the adjoining property corners for all affected parcels shall be documented by a Record of Survey.

2. Public and private utility companies shall receive notice of intention to vacate prior to the City Council hearing. If the Council determines that the right-of way should be abandoned, reservation of easements for existing public utilities, including water and sewer, shall be required, to the satisfaction of the respective utility companies, along with any revisions to those facilities as a result of development of the Vista Meadows project on Slack Street. Specific details will be determined during the abandonment process, prior to adoption of a final abandonment resolution by the City Council.

3. If the Council approves the right-of-way abandonment, any required easements for purposes of access and drainage shall be recorded concurrent with or prior to recordation of a City Council resolution vacating previous offers of dedication.

4. All required pictorial exhibits and/or legal descriptions necessary to complete the abandonment process shall be provided by the project applicant to the satisfaction of the Public Works Director. All exhibits and/or legal descriptions shall be prepared by a Licensed Land Surveyor or Civil Engineer who is authorized to practice Land Surveying, in accordance with the California Business and Professions Code Section 8700 et seq.
5. The abandonment resolution of the City Council shall include reservation of an easement for pedestrian access on the northern sidewalk on Slack Street frontage (both east and west of Grand Avenue), or a separate pedestrian access easement shall be recorded prior to abandonment, to the satisfaction of the City Engineer and the City Attorney for preservation of public pedestrian access along the sidewalk.

6. A revision to encroachment permit ENCR-0470-2024 shall be submitted by the applicant to include two (2) speed humps on Slack Street for traffic calming. The design of the speed humps shall be to the satisfaction of the Public Works Director. Speed humps shall be installed prior to permit final.

7. The applicant shall submit payment for encroachment permit ENCR-0470-2024, in accordance with the City's 2023-24 Comprehensive User Fee schedule, to reimburse the City for staff time associated with plan check and construction inspection for public improvements on Slack Street.

8. Cal Poly has committed to supporting a future land value offset for City acquisition of land for utilities (water reservoir) at Cal Poly as a land exchange for the abandonment of 1.72 ± acres right of way on Slack Street.

9. Informational note: the abandonment does not constitute creation of a separate lot or a potential future subdivision.

On motion by Commissioner Jorgensen, seconded by Vice Chair Houghton, and on the following roll call vote to wit:

AYES:	Commissioner Jorgensen, Commissioner Flores, Vice Chair Houghton, and Chair Cooley
NOES:	None
REFRAIN:	None
ABSENT:	Commissioners Kahn, Munoz-Morris, and Tolle

The foregoing resolution was passed and adopted this 25th day of September 2024.

Tyler Corey, Secretary
Planning Commission

EXHIBIT "A"
LEGAL DESCRIPTION

Those portions of Slack Street and Grand Avenue as shown on the map filed in Book 102 of Records of Survey at Pages 55 through 60, inclusive, in the Office of the County Recorder, County of San Luis Obispo, State of California, described as follows:

Beginning at a point on the northerly right-of-way line of Slack Street of said Records of Survey, said point being South 87°55'42" East a distance of 874.14 feet from the westerly terminus of the course shown as S87°55'42"E 1084.07' of the said northerly right-of-way line of Slack Street; thence,

Leaving said northerly right-of-way line South 2°04'18" West a distance of 37.50 feet; thence,

North 87°55'42" West a distance of 132.50 feet; thence,

South 87°10'21" West a distance of 17.56 feet; thence,

North 87°55'42" West a distance of 39.00 feet; thence,

North 83°01'46" West a distance of 17.56 feet; thence,

North 87°55'42" West a distance of 296.00 feet; thence,

South 87°10'21" West a distance of 17.56 feet; thence,

North 87°55'42" West a distance of 39.00 feet; thence,

North 83°01'46" West a distance of 17.56 feet; thence,

North 87°55'42" West a distance of 235.78 feet; thence,

South 83°56'29" West a distance of 7.07 feet; thence,

North 87°55'42" West a distance of 6.00 feet; thence,

North 79°47'54" West a distance of 7.07 feet; thence,

North 87°55'42" West a distance of 12.19 feet; thence,

North 2°04'18" East a distance of 1.50 feet; thence,

North 87°55'42" West a distance of 26.24 feet to a curve concave to the northeast having a radius of 25.00 feet; thence,

Westerly, northwesterly and northerly along said curve through a central angle of 89°58'59" an arc distance of 39.26 feet; thence,

North 87°56'43" West a distance of 76.53 feet to a curve concave to the northwest having a radius of 26.26 feet, the radial bearing to said point being South 43°49'15" East; thence,

Southerly, southwesterly and westerly through a central angle of 45°52'02" an arc distance of 21.02 feet; thence,

North 87°57'13" West a distance of 414.36 feet; thence,

North 82°27'40" West a distance of 52.24 feet; thence,

North 87°57'13" West a distance of 158.53 feet; thence,

South 88°50'33" West a distance of 89.46 feet; thence,

North 87°57'13" West a distance of 128.06 feet; thence,

North 83°47'55" West a distance of 28.51 feet; thence,

North 2°02'47" East a distance of 41.93 feet to said northerly right-of-way line of Slack Street; thence,

Along said northerly right-of-way line of Slack Street and the easterly right-of-way line of Grand Avenue of said Records of Survey the following 3 courses:

South 87°57'13" East a distance of 987.67 feet; thence,

South 2°05'32" West a distance of 25.04 feet; thence,

South 87°55'42" East a distance of 874.14 feet to the Point of Beginning.

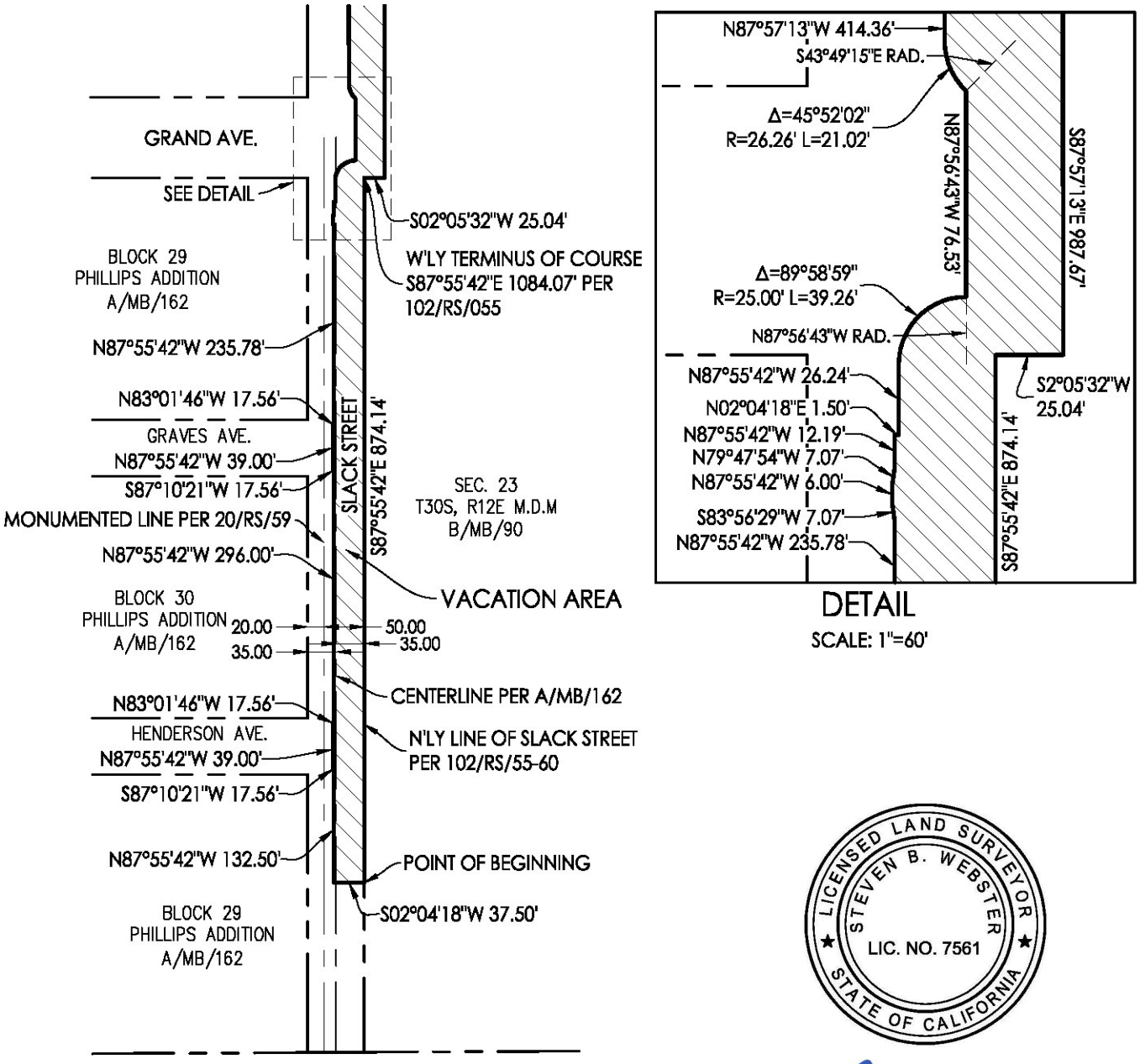
RESERVING and EXCEPTING from the said vacation, unto any existing public utility, pursuant to the provisions of Section 8340 of the Streets and Highways Code, any easement and right necessary at any time, or from time to time, to construct, maintain, operate, replace, remove, renew and enlarge their respective public utility facilities, and all facilities incidental thereto, including access to protect the property from hazards, said area shall also be kept open and free of buildings, structures and wells of any kind in, upon, and over the road herewith vacated.

In accordance with Section 8352 of the Streets and Highways Code, said vacation is not intended to extinguish any private rights of access that may exist in favor of the properties fronting the Subject Area described hereinabove.

The land described is shown graphically on Exhibit “A-1”.

08/27/2024

EXHIBIT "A-1"
LEGAL DEPICTION



DETAIL
SCALE: 1"=60'

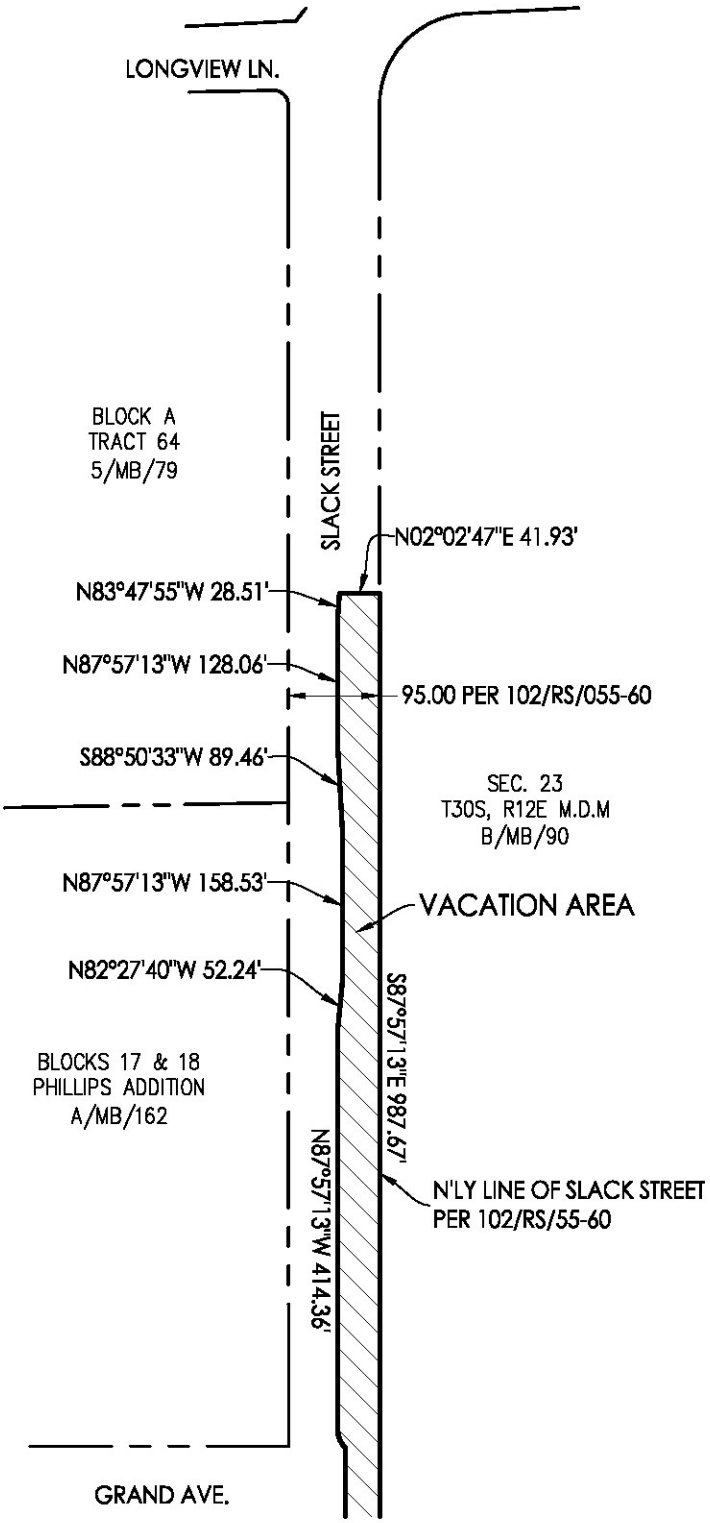
LICENSED LAND SURVEYOR
STEVEN B. WEBSTER
LIC. NO. 7561
STATE OF CALIFORNIA

08/27/2024

rrm design group
3765 S. Higuera St., Ste. 102 • San Luis Obispo, CA 93401
p: (805) 543-1794 • f: (805) 543-4609
www.rrmdesign.com

SCALE: 1" = 200'
0 100 200
GRAPHIC SCALE

EXHIBIT "A-1"
LEGAL DEPICTION CONTINUED



LICENSED LAND SURVEYOR
STEVEN B. WEBSTER
LIC. NO. 7561
STATE OF CALIFORNIA

08/27/2024

SCALE: 1" = 200'
0 100 200
GRAPHIC SCALE

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www.rrmdesign.com

DETACHMENT NO. ____
from the City of San Luis Obispo

Detachment Area 1:

That portion of the land described in the City of San Luis Obispo Ordinance No. 304 (new Series) approving the annexation of the Monterey Heights et.al. described as follows:

Beginning at a point on the northerly line of the Phillips Addition annexation in said Ordinance No. 304, point also being on the northerly right-of-way line of Slack Street as shown on the map filed in Book 102 of Records of Survey at Pages 55 through 60, inclusive, in the Office of the County Recorder, County of San Luis Obispo, State of California, said point being South 87°55'42" East a distance of 874.14 feet from the westerly terminus of the course shown as S87°55'42"E 1084.07' of the said northerly right-of-way line of Slack Street; thence,

Leaving said northerly right-of-way line and said annexation line South 2°04'18" West a distance of 37.50 feet; thence,

North 87°55'42" West a distance of 132.50 feet; thence,

South 87°10'21" West a distance of 17.56 feet; thence,

North 87°55'42" West a distance of 39.00 feet; thence,

North 83°01'46" West a distance of 17.56 feet; thence,

North 87°55'42" West a distance of 296.00 feet; thence,

South 87°10'21" West a distance of 17.56 feet; thence,

North 87°55'42" West a distance of 39.00 feet; thence,

North 83°01'46" West a distance of 17.56 feet; thence,

North 87°55'42" West a distance of 235.78 feet; thence,

South 83°56'29" West a distance of 7.07 feet; thence,

North 87°55'42" West a distance of 6.00 feet; thence,

North 79°47'54" West a distance of 7.07 feet; thence,

North 87°55'42" West a distance of 12.19 feet; thence,

North 2°04'18" East a distance of 1.50 feet; thence,

North 87°55'42" West a distance of 26.24 feet to a curve concave to the northeast having a radius of 25.00 feet; thence,

Westerly, northwesterly and northerly along said curve through a central angle of 89°58'59" an arc distance of 39.26 feet; thence,

North 87°56'43" West a distance of 76.53 feet to a curve concave to the northwest having a radius of 26.26 feet, the radial bearing to said point being South 43°49'15" East; thence,

Southerly, southwesterly and westerly through a central angle of 45°52'02" an arc distance of 21.02 feet; thence,

North 87°57'13" West a distance of 414.36 feet; thence,

North 82°27'40" West a distance of 52.24 feet; thence,

North 87°57'13" West a distance of 158.53 feet; thence,

South 88°50'33" West a distance of 89.46 feet; thence,

North 87°57'13" West a distance of 128.06 feet; thence,

North 83°47'55" West a distance of 28.51 feet; thence,

North 2°02'47" East a distance of 41.93 feet to the northerly line of the Phillips Addition annexation in said Ordinance No. 304; thence,

Along said northerly line the following 3 courses:

South 87°57'13" East a distance of 987.67 feet; thence,

South 2°05'32" West a distance of 25.04 feet; thence,

South 87°55'42" East a distance of 874.14 feet to the Point of Beginning.

The land described contains 1.72 acres more or less.

Detachment Area 2:

That portion of the land described in the City of San Luis Obispo Ordinance No. 304 (new Series) approving the annexation of the Monterey Heights et.al. described as follows:

Beginning at a point on the northeasterly line of the California Park annexation in said Ordinance No. 304, said point the easterly terminus of the course shown as N71°43'47"E 382.80' of northerly right-of-way line of Hathway Avenue as shown on the map filed in Book 102 of Records of Survey at Pages 55 through 60, inclusive, in the Office of the County Recorder, County of San Luis Obispo, State of California; thence,

Leaving said annexation line and along said northerly right-of-way line the following 3 courses:

South 71°43'47" West a distance of 382.80 feet to a curve concave to the southeast having a radius of 160.00 feet, the radial bearing to said point being North 18°16'23" West; thence,

Southwesterly along said curve through a central angle of 49°02'26" an arc distance of 136.95 feet; thence,

South 21°43'34" West a distance of 29.24 feet to the southeast corner of Parcel 'C' of Parcel Map No. SLO 71-279 filed in Book 7 of Parcel Maps at Page 79 in the Office of the County Recorder, County of San Luis Obispo, State of California; thence,

Northerly along the easterly line of said Parcel 'C' and Parcel 'B' of said Parcel Map No. SLO 71-279 North 18°11'35" West a distance of 203.75 feet; thence,

Southwesterly along the northwesterly of said Parcel 'B' South 42°18'03" West a distance of 46.55 feet to a point being South 47°41'57" East a distance of 25.00 feet from the southeast corner of Lot 88 of Map of Resubdivision of California Park filed in Book 3 of

Maps at Page 117 in the Office of the County Recorder, County of San Luis Obispo, State of California; thence,

North 47°41'57" West a distance of 25.00 feet to the southeast corner of said Lot 88; thence,

Along the southerly line of said Lot 87 and southerly lines of Lots 67 through 70 of said Map of Resubdivision of California Park the following 2 courses:

North 42°18'03" East a distance of 93.04 feet; thence,

North 58°18'03" East a distance of 623.88 feet to the easterly line of the public road as shown of said Map of Resubdivision of California Park; thence,

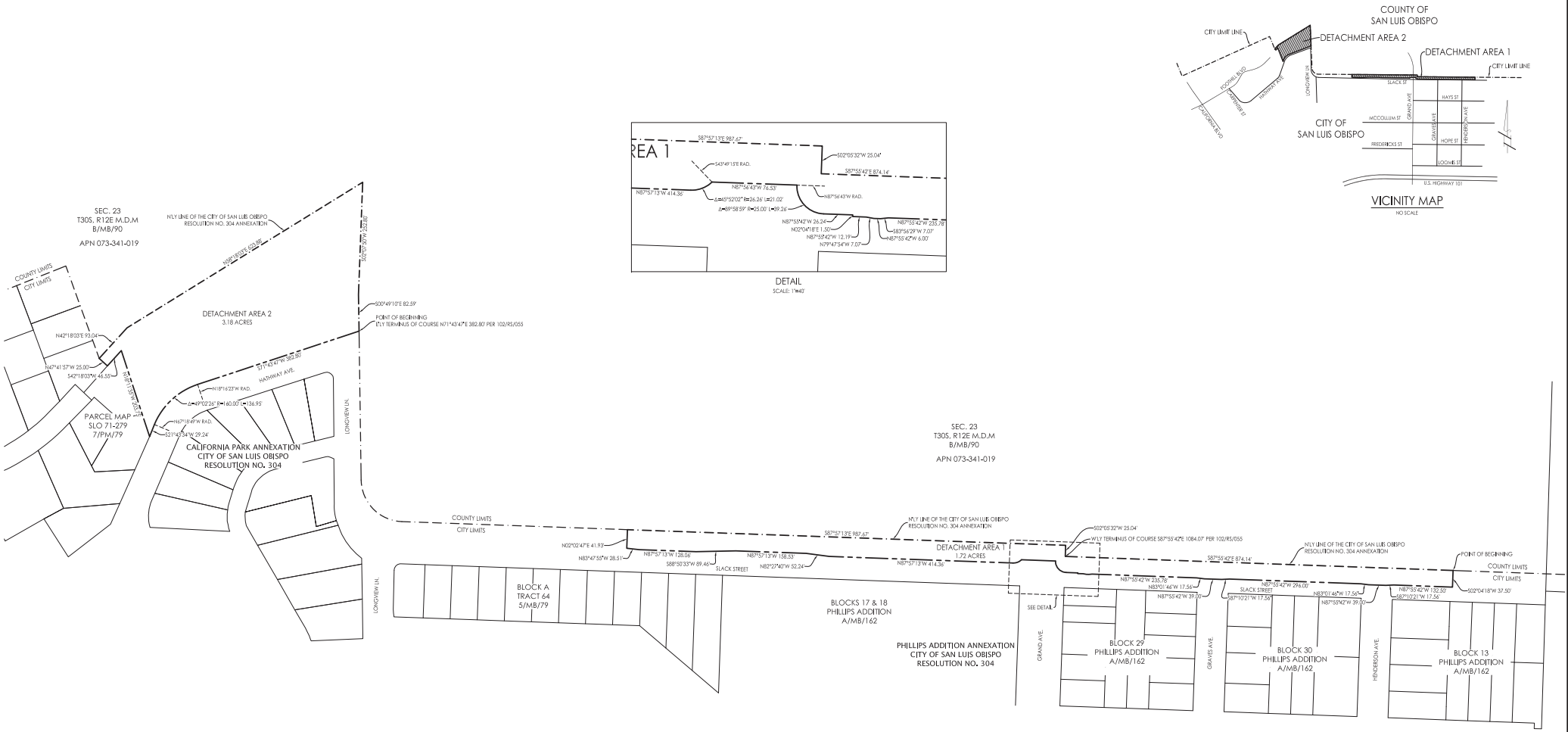
Southerly along said easterly line South 2°07'50" West a distance of 252.80 feet; thence,

Continuing along said easterly line South 0°49'10" East a distance of 82.59 feet to the Point of Beginning.

The land described contains 3.18 acres more or less.

Prepared by: _____
Steven B. Webster, LS 7561

Date:_____



SCALE: 1" = 100'

GRAPHIC SCALE

MAP PREPARED ON:
SEPTEMBER 12, 2024

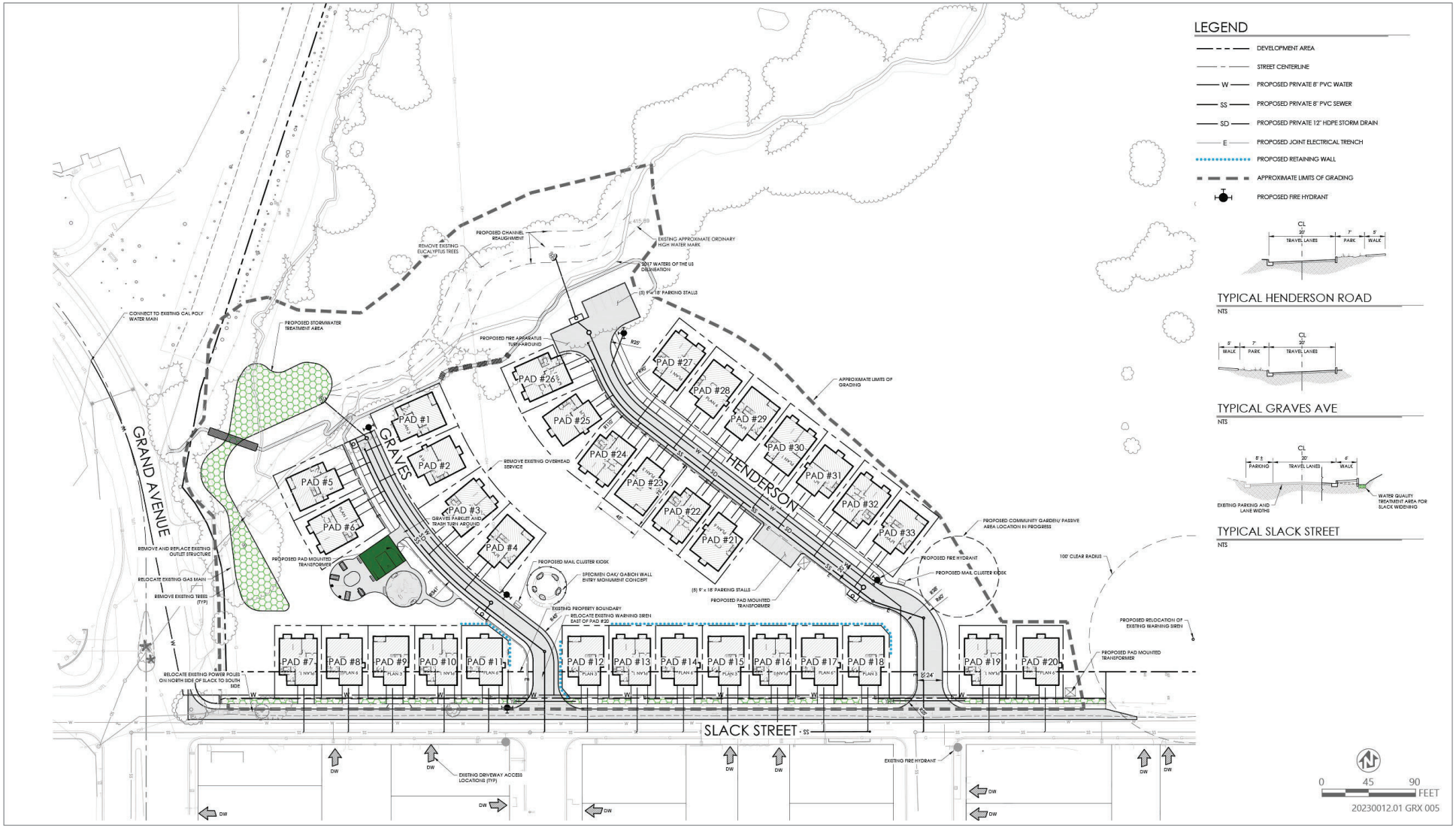
MAP PREPARED BY:
STEVE WEBSTER, LS 7561
RRM DESIGN GROUP
3765 S. HIGUERA ST., STE. 102
SAN LUIS OBISPO, CA 93401
PH (805) 543-1794

LICENSED LAND SURVEYOR
STEVEN B. WEBSTER
LIC. NO. 7561
STATE OF CALIFORNIA

LEGEND:
PROPOSED ANNEXATION DETACHMENT BOUNDARY
EXISTING CITY/COUNTY LIMIT LINE

DETACHMENT NO.

FROM THE CITY OF SAN LUIS OBISPO
BEING A PORTION OF THE LAND DESCRIBED IN THE CITY OF SAN LUIS OBISPO ORDINANCE NO. 304 (NEW SERIES) APPROVING THE ANNEXATION OF THE MONTEREY HEIGHTS ET.AL., CITY OF SAN LUIS OBISPO, COUNTY OF SAN LUIS OBISPO, STATE OF CALIFORNIA.



Source: Produced by RRM Design Group in 2023; Adapted by Ascent, Inc. in 2023.

Figure 1-7 Conceptual Site Plan

Council Agenda Report

Department: Public Works
Cost Center: 5101
For Agenda of: 11/12/2024
Placement: Business
Estimated Time: 60 minutes

FROM: Matt Horn, Public Works Director
Prepared By: Donna King, Parking Program Manager
Jennifer Rice, Mobility Services Director

SUBJECT: DOWNTOWN PARKING TECHNOLOGY ROADMAP REPORT

RECOMMENDATION

1. Receive and file Downtown Parking Technology Roadmap; and
2. Adopt a Draft Resolution entitled, "A Resolution of the City Council of the City of San Luis Obispo, California, to designate Flash Parking, Inc. as the standard vendor for the Gated Parking Access and Revenue Control System in City of San Luis Obispo owned and operated parking garages"; and
3. Appropriate $1,200,000 from Parking Fund Unreserved Fund Balance for purchase of Flash equipment, installation and ongoing support services; and
4. Approve and authorize staff to advertise a Request for Proposals (RFP) for multi-space pay stations, authorize the City Manager to execute a contract with selected vendor, and appropriate $600,000 from Parking Fund Unreserved Fund Balance for the purchase and installation of the multi-space pay stations with the vendor; and
5. Approve surplus of existing multi-space pay station once removed; and
6. Authorize the City Manager to extend mobile payment application contracts up to 5 years based on ongoing performance with PayByPhone; and
7. Authorize the City Manager to execute a one-year contract with automatic annual extensions for a maximum of five years with the selected Citation and Permit Management System vendor; and
8. Appropriate $100,000 from Parking Fund Unreserved Fund Balance for design of garage security fencing for existing garages, utilizing the materials selected for the Cultural Arts District Parking Garage.

POLICY CONTEXT

Section 4.141 of the General Plan's Land Use Element (LUE) addresses parking for the Downtown area. The policy states that the City must ensure there is a diversity of parking opportunities and any major increases in parking supply should take the form of structures located on the perimeter of the commercial core.

Section 13.1.2 of the General Plan's Circulation Element (CE) states that the City shall manage curb parking downtown to encourage short-term use and that parking programs shall be financially self-supporting.

Economic Resiliency, Cultural Diversity, and Fiscal Sustainability is a Major City Goal as identified in the adopted 2023-25 Financial Plan. Parking Services plays a critical role in fostering a vibrant local economy by effectively managing parking demand and access to Downtown. The Parking Fund must also maintain fiscally responsible and sustainable operations as indicated in the General Plan CE Section 13.1.2.

Section 3.24.060(D) of the Municipal Code states that procedures may be dispensed with, at the discretion and judgment of the purchasing authority as to the best interests of the city when supplies or equipment have been uniformly adopted in the city or otherwise standardized.

On May 17, 2022, Council approved a Purchasing Policy Update to the Financial Management Manual that required Council approval for Public Projects that cost over $200,000. Section 202A of the Financial Management Manual – "Purchasing Types and Authority Thresholds" requires approvals by City Council when purchases cumulatively total $200,000 or more.

Because the expected amount for purchasing in this report exceeds $200,000, staff is requesting authorization from Council to release requests for proposals and appropriate funding for recommended technology upgrades. This will provide staff the authority to implement the technology upgrades.

REPORT-IN-BRIEF

Council adopted comprehensive rate reductions as the result of a parking rate study completed in May of 2024. As part of the Council action in May of 2024, Council directed staff to complete a technology study based on community feedback to simplify the parking program and improve the user experience in Downtown San Luis Obispo. The City contracted with Dixon Resources Unlimited to complete a technology roadmap report that evaluated the parking technology, and operating systems currently utilized in San Luis Obispo and provide recommendations for changes to the technology.

Based on the Downtown Parking Technology Roadmap ("Technology Roadmap") report provided by Dixon Resources Unlimited, staff is recommending an update to technology in the garages to include consistent gated systems, license plate recognition systems, and updated security features. In addition, staff is recommending updates to technology on-street to include a single mobile payment application and updated pay stations. Staff is also recommending technology changes to software systems that include updated citation management and permit management systems. The fiscal impacts of staff's recommendations will be approximately $1.9 million and is expected to be funded by interest revenue from the Cultural Arts District Parking Structure bond funds.

DISCUSSION

Background

In January 2024 the City contracted with Dixon Resources Unlimited (Dixon) to complete a comprehensive rate study for all parking rates in San Luis Obispo. A draft of the report along with recommendations from Dixon and city staff was presented to City Council in May 2024. At that meeting, Council adopted a resolution and introduced a first reading of an ordinance to reduce parking rates in downtown SLO. Council also directed staff to reduce to one mobile parking payment application, implement consistent gated systems in all garages, and update the parking signs to improve the user experience.

Council's direction to improve the parking technology was based on community feedback that parking in Downtown SLO is confusing. The offering of multiple mobile parking payment applications causes confusing signage with too many options for customers that are not clearly communicated. In addition, staff has struggled with the integration and management of the multiple apps. The gateless garage solution implemented at 842 Palm and planned to be implemented in the other garages has caused additional community confusion and frustration. Visitors to the gateless garage have expressed dissatisfaction with the system that requires pre-payment for parking based on how long they will be parked. Feedback provided during the rate study shows that users prefer a pay-on-exit approach. Council's direction to implement consistent gated solutions across all garages will offer the pay-on-exit approach and eliminate the confusion of operating different technologies in different garages. Based on Council recommendations and community feedback during the rate study, staff worked with Dixon to complete a review of all parking related technology and completion of a Technology Roadmap.

Parking Technology Roadmap

The Technology Roadmap evaluates the parking technology and operating systems currently utilized in downtown San Luis Obispo. The Technology Roadmap is a living document that summarizes what has been accomplished so far as it relates to the City's parking program following the Parking Rate Study and the City Council meeting in May 2024, and aims to act as a resource guide for the City to achieve a cohesive parking system that can be managed effectively by City staff. This report identifies the current challenges in the parking program as well as opportunities for improvements that address the different parking technologies, the accompanying processes, and organizational needs for the City's parking program. The roadmap takes a comprehensive approach by examining each component both individually and as it relates to the whole system, aiming to connect the dots and show how the parking program can evolve to be one that is easy, convenient, and accessible for residents and visitors alike.

The recommended technological upgrades and parking operations improvements are designed to improve the overall parking experience for residents and visitors of San Luis Obispo and optimize internal operations.

The Technology Roadmap assesses the following elements in the City's parking program:

- Parking Access Revenue Control Systems (PARCS)
- Pay Stations
- Single-Space Meters
- Mobile Payment Applications
- Citation Management Systems
- Permit Management Systems
- License Plate Recognition (LPR)
- Data Integration
- Signage
- Electric Vehicle Chargers (EVCs)

The following table includes the recommendations from the report:

Table 1: Parking Technology Recommendations

Section	Recommendations
PARCS	*Near-term:* • The City should work with the selected PARCS vendor to prioritize reverting the 842 Palm Street garage from a gateless to a gated solution. *Long-term:* • The City should install the same PARCS technology at the other parking facilities to ensure consistency in the paid parking system.
Pay Stations	*Near-term:* • The City should terminate their pay station contract with IPS and release an RFP for a new pay station vendor. *Long-term:* • The City should consider re-evaluating pay station placements as the City starts to phase out single-space meters and install more pay stations in the Downtown area.
Single-space Meters	*Mid-term:* • The City should phase out all single-space meters out of the Downtown area once a pay station provider is selected through an RFP process to reach an infrastructure-lite program.
Revenue Collection and Reconciliation	*Near-term:* • The City should establish process, procedure, and performance standards with the vendor and internally between Parking Division and Finance Department staff to ensure City policies are followed accordingly for revenue collection and reconciliation processes. *Mid-term:* • The City should conduct a comprehensive assessment to re-evaluate the current operating procedures for revenue collection and reconciliation,
Mobile Payment Applications	*Near-term:* • The City should select the single mobile payment application vendor to be used for the parking program. *Mid-term:* • The City should work with the mobile payment vendor to set up integrations with the pay station provider to allow parking session extensions via mobile app.

Section	Recommendations
Validations	*Near-term:* • While the garage is gateless, the City could consider working with the mobile payment vendor to introduce validation codes for use by jurors in the mobile app. • The City may need to continue using physical passes to accommodate jurors that do not have a mobile device. *Mid-term:* • The City should work with the selected PARCS and mobile payment application vendor to set up a fully digitized system for managing and issuing parking validations that allows for both City and business-managed permits. • The City should work with the PARCS provider to establish a validation system for juror parking.
LPR	*Near-term:* • The City should replace the existing LPR system at 842 Palm Street with the LPR solution provided by the new PARCS provider to allow for a fully integrated off-street parking system. *Mid-term:* • The City should install the same LPR solution at the other parking garages to ensure a consistent design throughout the off-street facilities. *Long-term:* • The City should pursue an LPR system that allows for cloud-based storage in order to provide flexibility for data storage, retention, and sharing capabilities.
Digital Parking Occupancy Signs	*Mid-term:* • Upon installation of the new PARCS technology, the City should work with the selected PARCS vendor to set up an integration with the existing digital parking occupancy signs to populate real-time occupancy counts.
Data Collection and Analysis	*Near-term:* • The City should regularly collect LPR data using the mobile LPR during parking enforcement for parking utilization analysis. *Mid-term:* • The City should do quarterly reports of the LPR data collected during parking enforcement to help inform data-driven decisions for any parking program adjustments.
Citation Management System	*Near-term:* • The City should terminate their citation management contract with IPS. • Release an RFP for a citation and permit management system vendor. *Long-term:* • The City should consider expanding its parking enforcement staffing so that enforcement of the residential parking permit districts can unite under the Parking Division instead of under the SNAP program in the Police Department.

Section	Recommendations
Permit Management System	*Near-term:* • The City should terminate their permit management contract with IPS. • Release an RFP for a citation and permit management system vendor. *Long-term:* • The City should digitize the residential parking permits to allow for plate-based enforcement utilizing LPR technology and a digitally managed permit program.
Signage	*Near-term:* • The City should update paid parking signage to reflect the single mobile payment vendor selected from the RFP process. • The City should post additional signage at 842 Palm Street in the interim to help communicate to users on how to properly pay for parking. *Mid-term:* • The City should update all downtown and residential signage to be compliant with MUTCD standards and to accurately reflect business rules relating to paid parking, time limits, and residential parking restrictions. • The City should establish a list of standards for all signage to create a more cohesive, welcoming, and visually appealing streetscape.

In line with City Council's direction and the desires of the community to see strategic actions in an efficient and quick manner, this report includes updates on recent actions as well as specific staff recommendations to move forward on some of these recommendations immediately. The Downtown Parking Technology Roadmap Report prepared by Dixon is included as Attachment A.

PARCS (Parking Access and Revenue Control Systems) for Garages
At the May 14, 2024, City Council meeting, the Council directed staff to transition to a consistent gated system for all structures.

Downtown San Luis Obispo currently has three parking garages (842 Palm, 919 Palm, 871 Marsh) and one garage under construction (Cultural Arts District Parking Structure - CADPS). The existing garages use two different PARCS, with a third system planned to be implemented in the CADPS. This inconsistency between garage systems has been challenging to the community. Additionally, it creates inconsistencies in garage management, payment enforcement, and staff operations.

The garage located at 842 Palm Street is a gateless system where patrons park and then either walk to a pay-on-foot station or use a mobile payment application to pre-pay for their parking time. Since installation, community members and visitors have expressed that this system is confusing. The remaining two existing structures (919 Palm and 871 Marsh Street) have outdated gated systems that lead to long queuing lines at entry and exit locations, lack of automated validation systems, and costly repairs and maintenance due to the system no longer being covered by warranty.

A third system, a gated system provided by the vendor Flash, is planned for installation at CADPS. As a publicly bid project, Swinerton Builders was awarded the CADPS construction contract in September 2023 for having the lowest responsible bid, consistent with Public Contract Code. Prior to the Council's direction to switch all parking garages to a consistent gated system, and before it was known that a gated system would be required in CADPS, Swinerton had placed a deposit with the vendor Flash for a gateless PARCS system, as it met the original contract specifications. As construction of the structure of CADPS had already begun, staff acted quickly in response to Council direction to avoid delays and cost overruns. The City's contracted design team quickly issued a change order for the installation of the necessary conduit and loops for a future gated system, while City staff worked to prepare and finalize specifications for a gated PARCS system. Staff met with key stakeholder groups (Downtown SLO and the Parking Steering Committee) to identify the community's desires for a consistent gated solution. Dixon assisted staff with drafting the specifications for a gated PARCS system based on the received stakeholder feedback. Additionally, Dixon scheduled virtual vendor demonstrations for staff to evaluate and consider different system features. Staff further researched various gated PARCS systems by attending the trade show at the International Parking & Mobility Association Conference in June 2024. Through this effort, staff finalized the specifications for a new gated PARCS system, that were then provided to Swinerton as part of a contract change order.[1]

Swinerton's original subcontract with Flash (for a *gateless* system) included a non-refundable deposit. This created a financial incentive for Swinerton to explore whether Flash could meet the new gated specifications. This was also the most cost effective and efficient solution for the City, as a change in vendor could have resulted in a greater increase in costs, which would have been borne by the City, and overall delays to the project. Ultimately, Swinerton submitted Flash's gated system for City review. City staff reviewed and determined that the Flash gated system met the required specifications, and subsequently approved the submitted system.

In September 2024, representatives from Flash presented to key stakeholder groups in San Luis Obispo, including internal operational staff, the Parking Steering Committee, and Downtown SLO Parking Task Force. Internal staff are looking forward to the flexibility of Flash equipment to use parts that can be purchased from general hardware stores. They also liked the usability of the operating system to be managed on-site or remotely. The other stakeholders were pleased that Flash was able to accommodate all the community's requests, and are looking forward to the business validation, reservations, free-flow access, and unique mapping features with Google Maps and Waze offered by Flash Parking.

[1] The City Council has authorized the City Engineer to execute change orders for CADPS if the change order is within the available project budget, as this change is. This allows for prompt decision-making and project adjustments without exceeding financial limits. This ensures the project remains on track while addressing the costs incurred from the system change, all within the framework of the existing contract.

Council action on May 14th directed staff to "transition to a consistent pay-at-exit gated system in all structures." To ensure uniformity and improve the user experience, staff recommends that the Flash gated system be implemented across all City owned and operated parking garages.

Flash's system has specific features that make it unlikely that another vendor could replicate a seamless experience for both users (downtown visitors and parkers) and staff managing the system. By standardizing with Flash, the City can provide a cohesive and user-friendly parking experience while streamlining management and operational efficiency across all garages. If there are different vendor systems installed in each garage, the user experience and the management, maintenance, and required equipment and vendor specific materials required for repairs would be different for each. This is consistent with recommendations within the Technology Roadmap Report that "the City should install the same PARCS technology at the other parking facilities to ensure consistency in the paid parking system."

Community stakeholders and Council requested various features of a gated system to be consistent, including:

- Digital monthly permits
- Business validation
- Payment by app/QR code[2]/on-foot pay stations
- License plate recognition to allow gate arms to open or close for permit holders or pre-payment

Currently, structure permit holders must utilize two different permit systems in order to access the three existing garages, due to the City having two different vendors operating in different existing structures. The different permit systems have unique access instructions for the garages depending on vendor. This is confusing for permit holders and difficult for staff to manage. Additionally, the different vendors offer different payment methods (prox cards, apps) as well as different pay stations with different steps to process a parking transaction. This has been confusing to the community and visitors and is difficult to communicate.

Each PARCS systems uses different and system-specific equipment which requires the City to have different and more materials on hand to address emergent repair needs. If there are separate vendors for each garage, staff will need to order and store different parts and supplies for each garage system. Each parking technology system requires separate training and management for staff. Having separate systems at each garage requires added staff training and work hours to learn how to correctly operate and repair each unique system. With limited funds, storage, and staff, managing different hardware in each garage is not feasible.

[2] Although QR codes on signs are generally not recommended, QR codes can be used in gated garages if the signs are large and placed up high out of reach of pedestrians.

Additionally, Flash is the only vendor that integrates with both Google and Waze mapping solutions and allows parkers to reserve parking spaces on the Google and Waze apps. This will be an added convenience for visitors from out of the area to locate and purchase parking while on the way to Downtown SLO. If there are separate vendors, only the Flash operated garage (CADPS) will be visible on the Google and Waze maps.

Finally, Flash is the only vendor that provides a cloud-based system that can process transactions offline while remaining Payment Card Industry (PCI) compliant. This is a necessary tool for the City. Under the existing HUB system, if connection is lost, the system is not able to accept credit card payments. Flash uses non-proprietary hardware, which means that when issues arise, staff will be able to purchase parts locally without additional charges from Flash.

To meet Council's direction for a consistent gated system at the parking garages, staff recommends that Council approve a resolution establishing Flash as the standardized system that will be installed in the Cultural Arts District Parking Garage and for all City owned and operated parking garages (Attachment B).

As the standard system, staff is also recommending that the resolution include authorization of sole source purchases of gated parking systems, including installation and ongoing services, from Flash for each of the three existing garages pursuant to San Luis Obispo Municipal Code section 3.24.060(D.) In order to comply with the product warranty, Flash requires that their staff install their equipment. Other minor infrastructure, such as conduit and electrical work, is not required to be done by Flash, so these elements will be bid separately per City Purchasing Policy. It is estimated that completion of installation and implementation of the Flash Parking Systems will be in early 2026 at that same time that the Cultural Arts District Parking Garage will be completed.

Multi-Space Pay Stations

The City currently has 64 IPS pay stations installed on-street and in parking lots. Of those pay stations, 57 are MS1 model and 7 are MS3 model. The MS1 models are approximately 4 years old and are no longer sold by IPS. IPS continues to support the MS1 model but is converting any future sales and operations to the MS3 model. The MS1 pay stations are no longer covered by warranty and all parts and repairs are an additional cost.

The City has purchased 27 MS3 pay stations to date. The first installation of MS3 pay stations occurred in June of 2023. Since that time, the MS3 pay stations have not operated correctly, despite City staff's diligent reporting and follow up with IPS to correct these issues. In March 2024, all but 7 of the MS3 pay stations were removed from the street. There are 5 MS3 pay stations in the 842 Palm garage being utilized as pay on foot stations. Staff continues to report communication issues with the remaining 7 on-street pay stations and the 5 garage pay stations. There are currently 15 MS3 pay stations in storage not being used.

Due to the ongoing performance issues, staff has initiated the return of all MS3 pay stations to IPS. A new vendor will need to be selected to replace the aging MS1 pay stations, the returned MS3 pay stations, and additional pay stations for the planned replacement of single space meters. The estimated cost to replace the 64 existing pay stations on-street and in parking lots is approximately $600,000. Staff recommends Council approve funding for the replacement pay stations and approval to surplus the existing MS1 pay stations. Any refunds received through the return of MS3 pay stations will be returned to the Parking Fund to offset the cost of the replacement pay stations. The draft request for proposals for the new pay stations is included as Attachment C.

One of the strategies of the Access and Parking Management Plan is to use technology and wayfinding to improve the parking experience. In line with the strategy, it is planned to continue to replace single space meters with multi-space pay stations. Replacing the single space meters with multi-space pay stations will promote an infrastructure lite parking program [3]and minimize operational costs. The City currently has a lease agreement with IPS to lease single space meters for $1 per meter per month plus a software fee of $8.75 per meter per month. The City currently leases 720 meters with a total cost of approximately $7,020 per month ($84,240 annually).

On average, 5-10 single space meters can be replaced with 1 pay station. Pay stations are approximately $8,000 - $10,000 each and have an estimated lifespan of 7-10 years. The replacement of single space meters with pay stations is expected to offer a cost savings of approximately $30,000 annually in service charges. In addition, there will be significant savings of staff time and maintenance costs with the reduction of equipment from approximately 720 singe space meters to 90 pay stations. A vendor will be selected for the multi-space pay stations to replace the 64 existing pay stations if Council approves the release of the request for proposals. Staff plans to continue expansion efforts to replace the single-space meters with multi-space pay stations in a phased approach. Funding for the single-space meter conversion will be included for Council's consideration with the 2025-27 Financial Plan with an estimated total cost of $1,000,000. It is expected that the cost savings from the conversion from single-space meters to multi-space pay stations along with continued bond interest from the Cultural Arts District garage will cover the costs of the conversion from single-space meters to multi-space pay stations.

Mobile Parking Payment Application

On May 14, 2024, Council directed staff to reduce to a single mobile payment application vendor. At the time, three mobile apps were utilized in the downtown (ParkMobile, PayByPhone, and Honk) and one additional mobile payment app (ParkSmarter) was previously discontinued in November 2023. A single app was necessary to reduce confusion and facilitate clearer communication to the public as well as a more seamless integration for parking processes on the back end.

[3] Infrastructure lite reduces the amount of hardware installed on-street. This saves staff time maintaining the hardware, limits environmental impacts and street clutter.

In August, a RFP was publicly released and on August 29, 2024, proposals were received. Proposals were reviewed by a multifaceted team of technical staff, stakeholders, and community members. Technical staff included Parking Services Program enforcement and operations staff members. Stakeholders included representatives from the City's Economic Development Division, IT Division, and Downtown SLO Parking and Access Committee. Additionally, a third component of the review was a targeted user survey administered to Downtown SLO's Parking Task Force, a group of downtown business owners representing a variety of business types in the downtown.

PayByPhone scored higher than the other apps primarily in business managed on-street promotions, communication and marketing, and the end-user transaction fee. PayByPhone's transaction fee that will be passed on to the end user is $0.25 per transaction. Currently customers are paying $0.25 to $0.35 per transaction to park in San Luis Obispo. Reviewers advised PayByPhone was easy to use, and staff advised that PayByPhone was easy to manage. PayByPhone's Coupons feature will benefit Downtown businesses and visitors by providing additional parking discounts provided by businesses. This feature is only available through PayByPhone and was well received by the Parking and Access Committee. PayByPhone scored highest and was awarded the contract per City Manager authority and approval. The initial term of the contract is one year. Staff is recommending that Council authorize the City Manager to execute contract extensions up to five years, if staff chooses to extend the contract based on PayByPhone's performance.

Staff is currently working with PayByPhone and downtown stakeholders on the rollout of the single app. PayByPhone will be providing new signage to be installed throughout the downtown. The updated signs will replace the existing app signs and be installed at every paid parking sign in Downtown to help direct customers to utilize the app without needing to walk to a pay station. Staff will work with Downtown SLO to ensure limited impacts to the holiday shopping season. It is anticipated that signs will be installed in early January. It should be noted that the other two currently existing apps, ParkMobile and Honk, will continue to be available for use until February 2025, or until at least 85% of mobile transactions are on PayByPhone, whichever occurs sooner. This is to allow a "soft rollout" and to limit any confusion for existing users, particularly during the busy holiday season. While the City will no longer be promoting the use of ParkMobile and Honk, existing visitors to downtown accustomed to those apps will not be impacted through the remainder of the year. A joint press release and social media post announcing PayByPhone as the single mobile payment app is scheduled to be sent in January after the holiday shopping season commences.

Citation Issuance and Processing Software

The City currently contracts with IPS for parking citation software and citation processing services. A 5-year contract was executed on June 22, 2022. The contract includes standard termination language (cause or convenience). Since implementation, enforcement and administrative staff have reported ongoing issues with enforcement software, reporting, DMV processes, and citation noticing. All citation processes are mandated by various California Vehicle Codes (CVC). As of July 2024, three key defects have been reported to IPS:

- DMV registration holds are not being placed on unpaid citations (estimated loss of approximately $83,000 last Fiscal Year).
- Citation noticing is not being mailed per CVC requirements and do not include postmarks to document proper noticing timelines.
- Administrative hearing process is not being followed per CVC requirements.

On October 17, 2024, staff notified IPS of the City's intent to terminate the IPS contract for citation software and processing services. The City Manager has also authorized the release of an RFP to select a new vendor.

Staff is recommending that Council authorize the City Manager to execute a one-year contract with automatic annual extensions for a maximum of five years with the selected vendor. The contract with IPS will be terminated upon 30 days' notice once a new citation software and processing vendor is selected. The citation software and processing vendor is not public-facing and the need for public outreach and education will be minimal.

Garage Security

During the Rate Study and Technology Roadmap, staff and Dixon received feedback about concerns with overall garage security. Garage security is outside the scope of the Roadmap, but Dixon provided some general recommendations, including:

- Security Cameras
- Lighting
- Security Services
- Call Boxes
- Safety Fencing
- Other Security Technology

Safety fencing has been selected for the Cultural Arts District garage to be installed along the rooftop edges and will be installed during the construction of the structure. Staff is recommending appropriating $100,000 from the Parking Fund Unreserved Fund Balance for the design specifications for the existing garages. The $100,000 will cover design only. It is unknown what the cost of installation will be until the design process is complete, however preliminary estimate is $1,000,000. Staff will return to Council with future funding considerations when the design is complete. Funding for installation is expected to come from bond interest revenue generated during FY 2024-25. Installation of safety fencing is planned for FY 2026-27.

The Parking Operations team has been working with IT to determine specifications for security cameras. The initial estimated cost for security cameras in the existing garages is approximately $500,000. This includes costs for storage of the camera footage (note, that the footage will be added to the City's Record Retention Schedule, as the footage will be public record, and staff time will be needed to review footage before release to make any necessary redactions). Once the specifications have been completed, staff plans to issue a request for bids to complete the installation of security cameras. Funding for the security cameras will be included for Council's consideration with the 2025-27 Financial Plan with an estimated cost of $500,000. The funds are expected to come from remaining bond interest from FY 2023-24 and bond interest revenue generated during FY 2024-25. The same camera system is planned to be implemented in the Cultural Arts District garage via a change order using existing project contingency budget.

In addition, staff is in the process of evaluating all existing lighting in the garages and will be creating a needs assessment to repair, replace, or update any necessary lighting in the garages. It is expected that there is sufficient operating budget to make any necessary lighting improvements in the garages. If staff determines during the needs assessment that the amount is greater than the available budget, staff will request additional funds at that time.

Staff will continue to evaluate options as detailed in the Technology Roadmap report to improve safety and security in the parking garages.

Previous Council or Advisory Body Action

- On August 18, 2020, the City Council approved a resolution authorizing the City Manager to execute a sole source contract with IPS Group for multi-space pay stations.
- On September 19, 2023, the City Council awarded the construction contract for the Cultural Arts District Parking Structure to the low bidder Swinerton Builders, Inc. in the amount of $41,070,044. The construction plans and specifications included a gateless parking access and revenue control system.
- On November 7, 2023, the City Council approved a Request for Proposals to complete a Parking Rate Study. Action items also included adopting Resolution No. 11456 authorizing free parking in the structures for the first hour each day, all day on Sundays, and during the holiday parade, from November 23, 2023 to June 30, 2025. Additional direction included that staff bring back an ordinance to forego the on-street parking rate increase originally planned for July 1, 2025.
- On May 14, 2024, the City Council introduced Ordinance No. 1735 (2024 Series), amending Title 10 Chapter 52 of the Municipal Code to remove the parking rate increase planned for July 1, 2025, and reduce on-street and surface lot parking rates. Action also included adoption of Resolution 11493 reducing the rates for the City's parking structures and parking permits. Additionally, Council directed staff to implement program and operational changes including:
    - Reducing to one mobile payment app
    - Expand on-street core time limits from 2 to 3 hours
    - Validation program enhancements
    - Update signs improving user experience incorporating changes
    - Promotional discounts thru single vendor app
    - Transition to consistent gated system for all structures
- On June 4, 2024, the City Council held the second reading and adopted Ordinance No. 1735 (2024), amending Title 10 Chapter 52 of the Municipal Code to remove the parking rate increase planned for July 1, 2025, and reduce on-street and surface lot parking rates.
- On July 8, 2024, the adopted reduced parking rates were implemented.

Public Engagement
Throughout the preparation of the 2024 Parking Rate Study, City staff conducted extensive community and stakeholder outreach and engagement efforts including 5 community meetings, 11 stakeholder meetings (with Downtown SLO Parking and Access Committee, Downtown SLO Parking Rate Study Task Force, SLO Chamber of Commerce Economic Development Committee and the Parking Steering Committee), an online community survey reaching over 2,800 downtown employees and visitors, Farmers Market booths, and social media engagement.

As the Technology Roadmap developed in the wake of the 2024 Parking Rate Study, staff continues to build on the foundation of that community input and engagement. Staff relied on the valuable input and representation from Downtown SLO and the Parking Steering Committee throughout the process. Members from Downtown SLO Parking and Access Committee and Parking Rate Study Task Force have participated in the review of draft specifications, proposals and vendor selection, and project and communication plans for each effort. Staff plans to continue this engagement process throughout the selection of vendors and implementation of these technology projects.

CONCURRENCE

The City's Attorney's Office and Finance Department concur with staff's recommendation.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to the Downtown Parking Technology Roadmap, because it does not constitute a "Project" under CEQA Guidelines Sec. 15378.

However, the individual projects within the Technology Roadmap would be considered projects under CEQA Guidelines, however they are categorically exempt under CEQA Guidelines Sec. 15301 Class 1 (existing facilities.)

FISCAL IMPACT

Budgeted: No Budget Year: 2024-25
Funding Identified: Yes

Fiscal Analysis:

Funding Sources	Total Budget Available	Current Funding Request	Remaining Balance	Annual Ongoing Cost
Parking Fund: Unreserved Fund Balance	$2,085,570	$1,900,000	$185,570	$
Total	**$**	**$**	**$**	**$**

There is no fiscal impact in Council review and filing of the Downtown Parking Technology Roadmap. Each element within the report, however, may have some fiscal impact. The below items identify the fiscal impacts of the items either currently in progress or that staff is requesting action be taken. As the remainder of the Technology Roadmap is implemented, staff will identify those fiscal impacts at the time those efforts are proposed to move forward.

Of significance, the Parking Fund benefitted from $2,085,570 of interest on the proceeds from the CADPS bond which was earned over the course of the last fiscal year. This revenue was not previously forecasted or budgeted and is therefore, a one-time revenue source to the Parking Fund's unreserved fund balance. Staff proposes to use $1,900,000 from the unreserved fund balance to purchase and install gated garage systems, purchase and install pay stations, and for design specifications for garage security fencing. There is sufficient funding to cover these requests.

Technology	PARCS	Pay Stations	Security	Total
Current Request	$1,200,000	$600,000	$100,000	$1,900,000

PARCS (Parking Access and Revenue Control Systems) for Garages
Preliminary quotes received from Flash for the purchase and installation of equipment is approximately $920,000. Additionally, prior to installation, there are necessary infrastructure modifications which will be publicly bid consistent with Public Contract Code and the City's Purchasing Policies. Staff recommends allocating $1,200,000 for the total project to allow for variations in construction bids, contingencies, and ongoing costs.

Multi-Space Pay Stations
The estimated cost to replace the 64 existing pay stations on-street and in parking lots is approximately $600,000. Staff recommends Council approve funding for the replacement pay stations. Once staff determines the refund amount for the MS3 pay stations, if any, will be returned to the Parking Fund to offset the cost of the replacement pay stations.

Mobile Parking Payment Application
The City Manager has exercised their authority to approve the contract with PayByPhone. Typical costs associated with contracting with a mobile payment vendor are minimal to the City. The costs for mobile payment vendors are passed on to the end user through a transaction fee with a $0 net cost to the City.

Based on the total number of mobile app transactions in FY 2023-24 of 324,103 and the minimum cost of merchant validation fees, the approximate pass-through fee from PayByPhone is estimated to be $81,626 annually (with an estimated net cost to the City of $0). The current budgeted amount for transaction fees for FY 2024-25 is $80,200. The only other direct costs for the City are the administrative staff costs associated with auditing and payment of the fees to the vendor. Staff is not recommending adjusting the current budget as transaction fees will vary based on app usage by the end user. As trends are established with a single mobile app vendor in the next 6-12 months, staff will evaluate any necessary budget modifications. Staff recommends delegating authority to the City Manager to extend this contract up to 5 years with PayByPhone as the net cost to the City is $0.

Citation Issuance and Processing Software
The City Manager has exercised their authority to release an RFP with proposals due in November. The cost of current IPS enforcement services is approximately $120,000 annually and the continuing cost with a new vendor is expected to be the same or less than what the City is currently paying IPS and no additional funding will need to be allocated. Staff is recommending delegating the authority to execute a one-year contract with automatic annual extensions up to a maximum of 5 years with the vendor selected from the published request for proposals.

Garage Safety
Staff is recommending appropriating $100,000 from the Parking Fund Unreserved Fund balance for design specifications for safety fencing to be installed at the top perimeter of the three existing garages similar to what has been selected and designed for the Cultural Arts District garage.

Funding for installation of the security cameras will be established in the 2025-27 Financial Plan with an estimated cost of $500,000 (which includes storage costs). The funds are expected to come from remaining bond interest from FY 2023-24 ($185,570) and any bond interest revenue generated during FY 2024-25.

Any additional funding needed for future garage safety improvements will be requested at a later date.

ALTERNATIVES

1. ***Council could choose not to accept the Downtown Parking Technology Roadmap Report and return the draft report to Dixon for revision.*** This action is not recommended by staff because staff has thoroughly reviewed the report and concurs with the recommendations provided by Dixon and discussed in this report.
2. ***Council could choose not to approve Flash as the standard system for gated Parking Access Revenue Control Systems (PARCS).*** *This action is not recommended by staff because Council directed staff to transition to a consistent gated system across all garages and the community supports this direction. If a standard system is not selected, the user experience will be different in each garage and may be confusing to the public.*

3. ***Council could choose not to approve the release of a request for proposals for multi-space pay stations.*** This is not recommended by staff because the pay stations need to be replaced due to the ongoing performance issues and return of the MS3 pay stations and the aging MS1 pay stations as documented above.
4. ***Council could choose not to appropriate funding for recommended actions in the Downtown Parking Technology Roadmap.*** This action is not recommended by staff because community input from the rate study and technology roadmap clearly indicates an immediate need to implement parking technology changes to promote a consistent, easily accessible user experience in Downtown.
5. ***Council could choose to direct other near-term implementation items from the Roadmap that were not otherwise addressed in the recommended actions.*** This action is not recommended by staff because staff reviewed all recommendations from the Roadmap and determined the best course of action with the available funding sources.

ATTACHMENTS

A - Downtown Parking Technology Roadmap Report
B - Draft Resolution to designate Flash Parking, Inc. as the standard vendor for gated PARCS
C - Draft Pay Station Request for Proposals (RFP)

Downtown San Luis Obispo Parking Technology Roadmap

Prepared for the
City of San Luis Obispo
October 10, 2024

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Attachments

Attachment 1: Parking Access Revenue Control System Scope of Work

Attachment 2: Pay Stations Scope of Work

Attachment 3: Mobile Parking Payment Application RFP

Attachment 4: Citation and Permit Management System Scope of Work

Attachment 5: Data, System, and Integration Requirements Scope of Work

Executive Summary

This Downtown San Luis Obispo Parking Technology Roadmap ("Roadmap") evaluates the parking technology and operating systems currently utilized in the City of San Luis Obispo ("City") as of the publication date of this report. Dixon Resources Unlimited ("DIXON") was retained by the City's Parking Division to prepare this Roadmap following the completion of the Parking Rate Study in May 2024. The Roadmap is a living document that summarizes what has been accomplished so far as it relates to the City's parking program following the Parking Rate Study and the City Council meeting in May 2024, and aims to act as a resource guide for the City to achieve a cohesive parking system that can be managed effectively and with ease by City staff. This report identifies the current challenges in the parking program as well as opportunities for improvements that address the different parking technologies, the accompanying processes, and organizational needs for the City's parking program. The roadmap takes a comprehensive approach by examining each component both individually and as it relates to the whole system, aiming to connect the dots and show how the parking program can evolve to be one that is easy, convenient, and accessible for residents and visitors alike.

The City has a robust parking program in the Downtown area that consists of a wide array of parking technologies, including multi-space pay stations, single-space meters, mobile payment applications, LPR cameras, and permitting systems across 1,306 on-street spaces, and 1,255 public off-street spaces. However, the City has run into an increasingly high number of issues related to the technology systems and vendors, including limitations in software integrations, administrative challenges, inability to conduct consistent parking enforcement, inadequate vendor support response times, hardware issues, and general discontent from the public regarding the accessibility and ease of using the parking technologies in the City. The Roadmap is meant to equip the City with the proper resources to be able to solicit parking technology vendors, with the detailed specifications and scope of work (SOW) included as attachments to this report, which were shared with the City between June and September 2024. The SOWs developed for this Roadmap were directly informed by the numerous discussions that were held between different City staff who engage parking in order to determine the needs, wants, and desires as it relates to parking in San Luis Obispo.

In addition to the goal of meeting the community's parking needs and creating a convenient and simple parking experience, the recommendations outlined in this Roadmap are also motivated by the goal of streamlining administrative processes within the City's Parking Program. Adopting these recommendations could potentially lead to significant cost savings and enhanced efficiency for City staff. The proposed technological upgrades and parking operations improvements are designed not only to optimize internal operations but also to improve the overall parking experience for residents and visitors of San Luis Obispo. With more efficient administrative workflows and better-integrated parking technology systems, the City can offer a more seamless and user-friendly parking experience, ultimately contributing to greater satisfaction and convenience for the community.

Introduction

Purpose

This Roadmap was developed by DIXON for the City of San Luis Obispo to assess the current parking technologies and operations in the City, as well as to prepare scopes of work (SOW) for parking technologies that the City is looking to upgrade and/or replace. The Roadmap assesses the following elements in the City's parking program:

- Parking Access Revenue Control Systems (PARCS)
- Pay Stations
- Single-space Meters
- Mobile Payment Applications
- Citation Management Systems
- Permit Management Systems
- License Plate Recognition (LPR)
- Data Integration
- Signage
- Electric Vehicle Chargers (EVCs)

This Roadmap summarizes the findings for the assessment of the above parking technologies and operations, and is an extension of the Parking Rate Study Report that was completed in May 2024. The Roadmap aims to provide the City with guidance on building a cohesive and effective parking technology ecosystem, with the goal of improving efficiency and future-proofing the City's parking program. The specifications for parking technology included in this Roadmap may be used by City staff to help guide and inform the release of Request for Proposals (RFP) of various technologies, that is slated to be approved at City Council in November 2024.

Background

On May 14, 2024, City staff brought a set of recommendations regarding parking rate models and operations to City Council for discussion and direction. The Council agenda report drew upon the findings and rate model options provided by the Parking Rate Study Report. Council unanimously approved the decision to adopt a draft Ordinance and Resolution to pursue rate changes, including eliminating the first hour free in parking structures and re-establishing paid parking in structures on Sundays. In addition to the rate changes, Council also approved the decision to pursue several operational changes recommended by staff, which included the expansion of the on-street time limit from two to three hours, reinstating a gated parking system at the current gateless structure (842 Palm Street), and reducing the current multi-vendor mobile payment applications approach to a single-vendor approach. The recommendations in this Roadmap are meant to support and inform these Council-approved changes.

Community engagement was prioritized as part of the Parking Rate Study and feedback was collected from various channels, including a survey, social media, community meetings, and emails. General themes that emerged include challenges related to technology and payment methods, safety improvements desired in parking garages, calls for rate reductions and

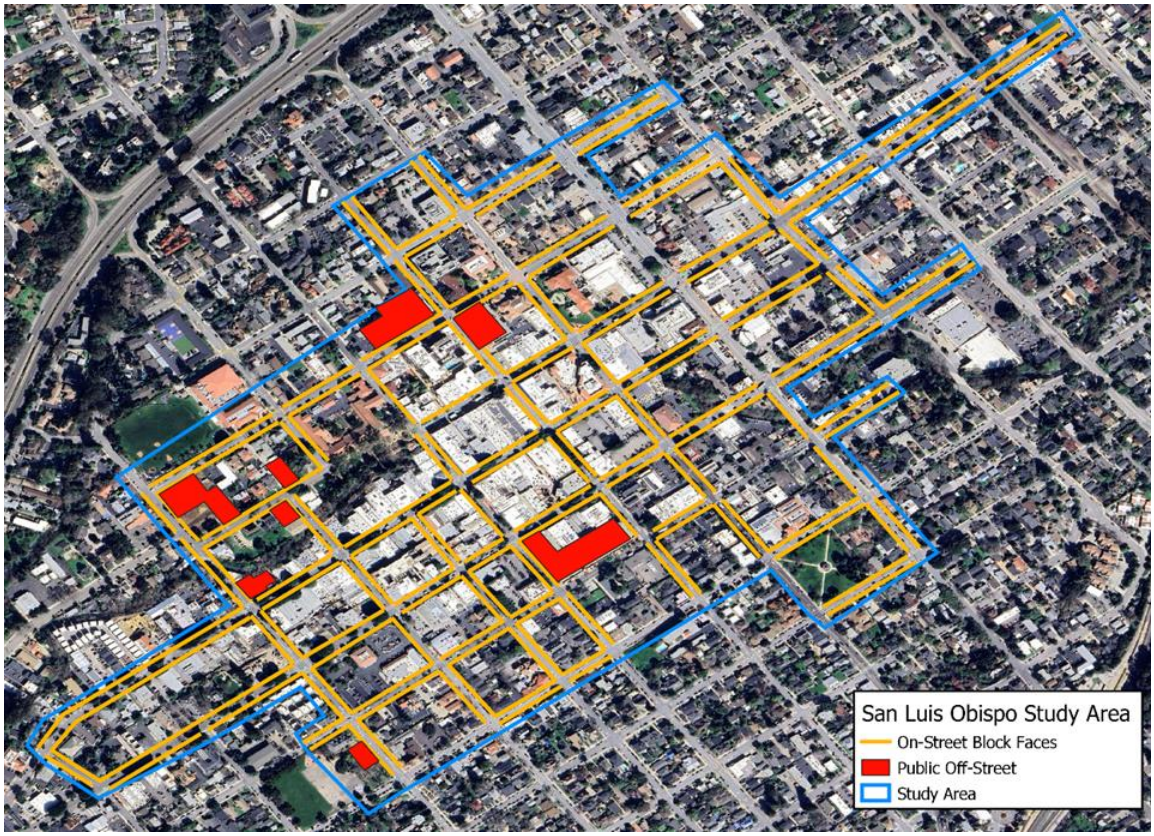
maintaining free parking periods, concerns regarding transparency in recent changes, worries about the impact on locals, visitors, and businesses, and suggestions to reduce evening parking hours. As part of the Technology Roadmap, DIXON conducted Needs Assessment Interviews with City staff who are involved in parking enforcement, citation and permit management, administration, and purchasing were interviewed in order to help identify the current challenges and needs as it relates to parking. In addition to the internal interviews, DIXON and Parking Division staff met and continue to meet on a weekly basis to assist with vendor contract reviews, communications with current and potential vendors, dissecting current operational procedures, discussing current parking legislation, policies, and trends, and supporting staff with any other parking-related topics as needed.

The recommendations in this Roadmap are informed by the community outreach efforts from the Parking Rate Study, the needs assessment interviews conducted for the Technology Roadmap, and the consistent discussions held between DIXON and City staff throughout the development of both the Parking Rate Study and Technology Roadmap. This Roadmap aims to capture the City's desired direction for parking in Downtown SLO as comprehensively as possible, with the goal of establishing a more cohesive parking technology ecosystem. A full summary of the community outreach and internal needs assessment process can be found in Appendix A.

Study Area

This Roadmap has been developed to address parking technology in Downtown SLO. Figure 1 shows the Study Area.

Figure 1. Downtown San Luis Obispo Study Area



The City operates three off-street parking structures, with one new facility, the Cultural Arts District Parking Structure (CADPS), currently under construction. This new structure will be located on the corner of Palm, Nipomo, and Monterey Streets, and is slated to be completed by the beginning of 2026.

Table 1. Off-Street Parking Facilities

Parking Facility	Inventory Count
842 Palm Street	415
919 Palm Street	240
871 Marsh Street	577
CADPS (under construction)	397

Technology Roadmap

Current Parking Technologies

The table below summarizes the current parking technology ecosystem in the City. Each technology is described in detail in the sections that follow.

Table 2. Current and Past Parking Technologies

Technology Provider	Use
HUB	PARCS
	Daktronics digital parking occupancy signs
Route 1	Genetec FreeFlow fixed mount and mobile LPR
IPS	Citation and permit management systems
	On-street pay stations
	On-street meters
	Mobile payment application (Park Smarter[1])
CurbTrac[2]	Mobile payment application aggregator
HONK	Mobile payment application
ParkMobile	Mobile payment application
PayByPhone	Mobile payment application
ChargePoint	Electric vehicle chargers (EVC)

Parking Access Revenue Control System (PARCS)

The City currently operates HUB equipment at two existing parking structures (871 Marsh St & 919 Palm Street), and has a gateless system operated by IPS Group (IPS) and Genetec FreeFlow technology at the 842 Palm Street parking structure. The adoption of a gateless system at 842 Palm Street in June 2023 was intended to minimize delays and back-ups at the ingress and egress points, especially during special events like the Farmer's Markets on Thursdays. However, the City has since faced several issues with the gateless design, including confusion among the community regarding how to pay for parking, and difficulties with enforcement as state legislation does not allow for parking citations to be mailed if a parker leaves the facility without payment.

Under Council direction, the City is proceeding with the reinstatement of a gated system at 842 Palm Street and conducted vendor demonstrations in June 2024 with the PARCS vendors. Following the virtual vendor demonstrations, vendors were invited to respond to a solicitation covering the scope of work outlined in Attachment 1.

In addition to reinstating a gated system at 842 Palm Street, Council also adopted a resolution as a part of the Parking Rate Study in May 2024 to implement a consistent gated solution across all the parking facilities. The City is contracting with Flash through the CADPS general contractor, Swinerton, to purchase PARCS equipment for the new facility and consistent with the adopted resolution this is justification to sole source the technology for the other three existing parking facilities. Installation of the new PARCS technology should be expedited upon

[1] Park Smarter is temporarily discontinued.
[2] City had plans to terminate CurbTrac in May 2024, but has reopened a month-to-month contract as of August 7, 2024 to keep continuation of services due to a delay in mobile integration with IPS.

Council approval at 842 Palm Street given the urgency of replacing the existing gateless system.

Since the contract for PARCS equipment will be through Swinerton, the City must lay out strict performance standards and measures covering installation, software requirements, support services, transaction fees, monthly fees, integration requirements, permit management, and warranty terms to ensure that the sole sourcing process for the other parking facilities will be streamlined with an extensive contract that the City can replicate. The City is currently vetting a funding source for the purchase of PARCS at the three existing parking facilities. City staff have identified unaccounted interest revenue in the current fiscal year budget for bonding from CADPS, which is believed to be sufficient to cover the costs of purchasing PARCS for the existing parking facilities.

Included in Appendix B are suggested performance standards and measures for a PARCS technology contract.

Pay Stations

The City currently utilizes IPS multi-space pay stations for their on-street and off-street parking locations. There are a total of 64 pay stations currently deployed in the Downtown core, with 57 of them being MS1 models, and 7 being MS3 models. The MS1 models are aging and currently out of warranty, and due to their age, it is increasingly difficult for City staff to locate and procure operating and spare parts as IPS has stopped selling the MS1 models. Although the MS3 pay stations are a newer model, the City has faced communication issues with the pay stations which has resulted in disruptions in parking enforcement operations and in turn a significant loss of paid parking revenue. The City has purchased 27 MS3 pay stations to date, 5 of which are installed in the 842 Palm Street Garage as pay-on-foot stations, but only 7 remain installed on-street, while 15 MS3 pay stations are not in use. City staff are evaluating potential opportunities to be able to return the MS3 pay stations to IPS and receive a refund, which would in turn dictate the funding methodology for the new pay stations to be purchased from the chosen technology provider. With the new pay station provider, the City would need to replace the MS1 pay stations, MS3 pay stations, and any additional pay stations that need to be installed in order to phase out the single-space meters in some of the on-street locations.

In addition to the issues with the pay station hardware, City staff have faced difficulties with the vendor in receiving adequate support services, which has caused frustration for both City staff and for the public, as well as operational delays in the City's parking program. Performance standards regarding vendor response times are built into the SOW (see Attachment 2) to ensure that the selected technology provider is able to provide support to the City in a consistent, predictable, and timely manner.

To promote a parking experience that is easy to navigate, the City should ensure that placement of on-street pay stations are recognizable and predictable in all parts of Downtown. For example, pay stations could be located at the corners of every block, or perhaps mid-block. Combined with proper parking signage, continuity in pay station placement can help drivers easily identify paid parking locations, and ensure they have sufficient time to make their payments within the grace period. While the placements of the existing pay stations are adequate for the time being, the City would need to re-evaluate the placements before the

new pay stations are installed as there is a significant amount of street clutter currently in the Downtown area, and the City has received complaints from the community regarding the placement of the paid parking equipment placements.

For the purposes of installing new pay stations, the City should consider the following general guidelines for placement of the equipment.

- **Parallel Parking Block –** One pay station shall service 8 to 10 parallel parking stalls located on a block face. Pay station to be located nearest to the center of the block.
- **Angled/Perpendicular Parking Block –** One pay station shall service 15 to 20 angled or perpendicular stalls located on a block face. Pay station to be located nearest to the center of the block.
- **Additional Pay Station per Block –** One additional pay station may be added to a block face to provide service for every additional group of 2 to 10 parallel parking stalls or 2 to 20 angled/perpendicular parking stalls on a block face. Each pay station to be located nearest to the center of each group of stalls.
- **Corner Placement –** Corner placement of pay station may be considered depending on the store front make up, length of block, and flow of pedestrian traffic.
- **Street Crossing –** A customer shall not have to cross traffic in order to access a pay station.
- **Mobile Payment Supplement –** Mobile payment and related signage may supplement or replace an additional pay station installation, especially on block faces with 11 to 17 parallel parking stalls or 16 to 39 angled/perpendicular stalls. In this case, easily identifiable signage should be placed along the block face every 2 to 4 parallel parking stalls or 4 to 6 angles/perpendicular parking stalls.

Should it become necessary for the City to remove the remaining IPS MS3 pay stations, these standards can be utilized to determine any changes that might be needed due to the removal. For example, when an MS3 is removed, an adjacent MS1 pay station may be moved to service as many stalls as possible. Additionally, an MS1 pay station from a low volume block or a location where it services a low number of stalls could be moved to the MS3 location. Finally, mobile payment can be considered to cover a block where an MS3 is removed, especially if an existing MS1 is nearby. In this case, the City should ensure enough signage is placed making it easy for a customer to identify a way to pay.

Single-space Meters

With the intention of heading toward an infrastructure-lite parking program and minimizing operational costs, City Council has directed single-space meters to eventually be phased out of the Downtown core. In the interim, the City will continue to lease single-space meters from IPS, with the intention that all meters will eventually be replaced with multi-space pay stations, supported by alternative payment methods including mobile payment applications and pay by text. Since most of the 10-hour on-street spaces are generally occupied by permit holders who do not use the single-space meters, installing pay stations instead will introduce cost savings on single-space meter fees.

Once the City decides to stop leasing the single-space meters, a review of the leasing contract with IPS should be completed to fully understand all post-lease terms and equipment return

procedures. Further, a discussion with the vendor should occur which results in specific documented guidelines addressing the conditions of where costs may apply. An assessment can then be completed that includes the potential costs as related to the specific equipment in the City's possession. Based on the results, the City may wish to consider options to determine the most advantageous position. This may include a lease buy out, negotiating with the vendor, or simply returning the equipment.

Revenue Collection and Reconciliation

The City currently outsources revenue collection with FS Collections on a month-to-month basis and armored courier services with Garda on a year-to-year basis for the coin and cash collected by the Parking Enterprise Fund, which includes revenue from the parking meters, off-street garages, and Parking Services front counter. The City intends to continue outsourcing these processes. To enhance the revenue collection processes, the City should consider establishing process, procedure, and performance standards with the vendor, as well as internally between Parking Division and Finance Department staff to ensure City policies are followed accordingly. Documenting these standards can allow the City to better manage expectations and maintain a level of agreement between the City and contractor. While specifics relating to revenue collection and reconciliation processes are out of the scope of this Roadmap, it is recommended that the City conducts an additional assessment to re-evaluate the current operating procedures to build a more efficient revenue collection and reconciliation process, in addition to establishing the standards listed above.

Mobile Payment Applications

The City currently utilizes four different mobile payment applications (ParkMobile, PayByPhone, Honk, Park Smarter[3]), as well as a mobile payment application aggregator (CurbTrac). While the original intent of introducing multiple mobile payment applications was to offer flexibility for customers to pay for parking, the multi-vendor approach proved to be difficult for both the City and for the community, as it led to operational inconsistencies, limitations in promotional opportunities, and general confusion among the public on how to pay for parking. Another issue that surfaced from the multi-vendor approach was that it allowed parkers to take advantage of the first hour free by starting parking sessions in each of the mobile payment applications, since CurbTrac does not aggregate parking sessions by license plate. This meant that proper enforcement of paid parking sessions was difficult, resulting in a loss of paid parking revenue.

Reducing to a single mobile payment application could help simplify the paid parking experience, reduce sign blight and confusion, improve the administrative experience, reduce operational inconsistencies between vendors, streamline the facilitation of promotional campaigns such as in-app discount codes, and reduce expenses in terms of aggregator transaction fees. Currently, the City pays an additional transaction fee to the service that aggregates mobile payment app vendors.

[3] Park Smarter is temporarily discontinued.

Under Council direction, the City is currently undergoing an RFP process to select a single vendor for their mobile payment application solution. The RFP requires that the vendor have experience working with the County of SLO, and includes the scope of work in Attachment 3.

Based on the final approved policies, the City should discuss opportunities to establish integrations between the new pay station provider and the mobile payment vendor to support the ability to extend parking sessions via mobile app for a more seamless and convenient parking experience.

Validations

The City is seeking a more effective way to manage parking validations, including an ability to have both City- and business-managed validations, juror parking validations, and special event validations that are issued digitally and can be managed via the selected mobile payment application or the PARCS platform. Parking validations are an effective way to welcome community members and visitors back to Downtown SLO to revitalize the commercial area and help foster a more welcoming environment. Parking validations can also incentivize customers to patronize businesses, which can help boost the economic vitality of Downtown SLO. Implementing a user-friendly, fully digitized system for issuing and managing parking validations can enable City staff to do so more effectively while also lifting the administrative burden through business-managed validations. Vendor specifications for validation opportunities are highlighted in the SOW for PARCS (Attachment 1) and mobile payment applications (Attachment 3).

In the short-term, while the garage is gateless, the City could consider working with the mobile payment vendor to introduce validation codes that could be provided to the juror upon arrival for use in on the mobile payment platform, thus eliminating the need for jurors to return to the parking structure once they check-in at the courthouse in order to start their parking session. Considering that not all jurors may have the ability to use mobile payment applications, the City may need to continue using temporary paper passes for jurors to display on their dashboard. However, it is recommended that the City digitizes their juror parking process as much as possible in order to streamline enforcement processes. Once the garage is gated, the City should consider working with the PARCS provider to establish a validation system that will allow jurors to park in the Palm Street Garage without cost.

License Plate Recognition (LPR)

Currently, there is a fixed-mount Genetec FreeFlow LPR system installed at the egress lane of 842 Palm Street garage to support the gateless design. With the transition to a gated system, the City has decided to remove the current LPR system at the egress lane and install a new LPR system provided by the new PARCS vendor at both the ingress and egress lanes (Figure 2). It is recommended that the City considers installing the same LPR system at the other two existing garages in order to ensure a cohesive technology system across all the off-street parking facilities. Installing LPR at the other two garages would help streamline enforcement operations and would also allow the City to have flexibility in any future operational changes such as potentially expanding the permit program beyond the 842 Palm Street garage.

The City should ensure that the LPR system is installed to allow for rear-plate capture, as many vehicles in California do not have a front license plate. To ensure license plates can be properly captured by LPR technology, the City may want to consider ways to control the ingress and/or egress of vehicles at the parking garages through infrastructure such as bollards. Since the City plans to install LPR at both the ingress and egress lanes for the three existing parking facilities, the lane configurations would need to be evaluated by engineers to ensure that the positioning of the LPR installation location allows for proper system operation.

Figure 2. Fixed-mount LPR at 842 Palm Street

The City's existing vehicle-mounted (mobile) LPR technology provided by Genetec is integrated with paid parking and citation management technologies to monitor for compliance based on license plate numbers, and it automates several manual enforcement processes to maximize efficiency and coverage. Integration with the existing mobile LPR technology will be a requirement for the new CMS and PMS vendor to ensure these enforcement processes can be maintained.

The current LPR system is set up in a way that requires all data to be hosted on the City's server, which has placed limitations on data storage, retention, and sharing capabilities. While the City does not have plans to change their LPR enforcement system or expand it at this time, the City should consider pursuing a cloud-based vendor-hosted storage system in the future that would allow for added flexibility in how LPR data is stored and managed, as well as providing the City with some cost savings.

Digital Parking Occupancy Signs

The City currently has Daktronics digital parking occupancy signs on the exterior of the three existing parking structures as part of the contract for PARCS with HUB from 2018; however, they have been inoperative since their installation due to a lack of proper integration with the current PARCS technology. Previously, City staff have done manual car counts and entered the parking occupancy into the system to update the digital signs, but due to its labor intensity, the digital signs have remained turned off for the most part.

Figure 3. Existing Digital Occupancy Sign

With the new PARCS technology provided by Flash, it is recommended that the City requests the integration and ensure the existing digital parking occupancy signs are operational. Through the integrated PARCS and LPR system, the digital signs can be populated with real-

time occupancy counts to display up-to-date information. This can improve the parking experience for Downtown visitors by enabling them to make simple and straightforward parking decisions and can also help increase utilization at the parking structures. Additionally, having digital signs at the parking structures can create a more cohesive, dynamic parking ecosystem that can improve circulation in the Downtown area and eliminate the need to circle the blocks in search of an available parking space.

Data Collection and Analysis

Ongoing data collection and evaluation will be essential to ensuring the parking program adapts to best fit the needs of the community. Data-driven decisions will enhance the success of parking management strategies, policies, and regulations by allowing the City to remain flexible in their approach. The use of LPR is an efficient and cost-effective way to capture ongoing parking data since this tool is already utilized for parking enforcement purposes. Data would automatically be collected during regular parking enforcement patrols that can be leveraged to produce key parking metrics such as the level of parking congestion, turnover rates, and repeat parking trends, which can be used to inform data-driven parking policies and regulations in the future. It is recommended that parking enforcement staff turn on the mobile LPR units whenever the enforcement vehicle leaves the City building, regardless of whether staff are actively enforcing parking or not, in order to collect as much parking data as possible. The LPR data should be anonymized and analyzed for parking demand trends by time of day, day of week, and month, and the City should produce quarterly reports to summarize the parking utilization metrics and help inform any policy or program changes. DIXON has provided additional recommendations for data collection and analysis in the Parking Rate Study.

Citation and Permit Management System (CPMS)

The City currently contracts with IPS for citation and permit management through a 5-year contract that was executed on June 22, 2022. However, the City has run into several issues with the vendor on both the citation and permit management modules, including vendor's failure to comply with citation processes that are mandated by various California Vehicle Codes (CVC), challenges with the IPS enforcement software on the handheld devices such as delays in citation uploads, difficulties with the customer portal on both the City- and public-facing platforms, delays in customer response times, and inadequate integration mechanisms with other technology providers in the City. Given the number of difficulties the City has faced with the IPS CPMS, the City is reviewing available contractual remedies and the potential for soliciting a new CPMS vendor that is able to provide integrated turnkey services. Specifications for CPMS are detailed in Attachment 4.

Currently, parking citations fall under the Parking Division, Police Department, and Parks and Recreation. Parking enforcement staff in the Parking Division utilize a handheld mobile device with IPS software for citation issuance. The Police Department (PD) does not use handhelds or IPS software, and instead uses paper tickets to issue citations. The Parking Division processes these paper tickets and manually enters the citation into the IPS system on the PD's behalf. In exchange, the PD provides contributions to fund the citation management processes associated with parking through a State and County surcharge of $13 paid per citation, a handicap linkage fee of 25% of the maximum fine, a parking staff labor fee of $4.32 per issued

citation, a delinquent notice fee of $1.25 per letter sent, and a portion of the monthly IPS software license fee. Since the City has a parking enterprise fund, all revenues from parking citations are deposited into the enterprise fund. City staff currently does revenue reconciliation reporting on a quarterly basis to identify the revenue sources for parking citations from the different departments. However, it is recommended that reporting be done on a biannual basis instead, preferably aligned with the beginning of the fiscal year and the fiscal mid-year, as this would be most advantageous to City staff for fiscal year planning and budgeting. The volume of tickets from Parks and Recreation Park Rangers are minimal, and the revenues from those citations are maintained in the Parking Enterprise Fund.

The City has begun digitizing the Downtown parking permits using the IPS Permit Management System starting with garage permits and plans to eventually digitize commercial permits and 10-hour permits in 2025. Currently, the City issues physical hang-tag permits, and these permit buyers are required to visit the City's parking office to pick up their permits. The residential parking permits can still only be purchased by mail or in person at the Mobility Services office in Downtown SLO. Transitioning these residential permits to a digitized (virtual) permit system will allow property owners to purchase and manage permits online and lift any administrative burden from City staff.

The Student Neighborhood Assistant Program (SNAP) is a program that operates within the Police Department. SNAP workers primarily focus on code enforcement but also help the Parking Division with enforcement in the residential permit parking districts after 9 PM. The SNAP team utilizes handhelds with IPS software to issue citations. However, the City is considering eliminating this arrangement with SNAP and instead hiring additional enforcement officers in the Parking Division to cover the residential permit parking districts for nighttime enforcement utilizing LPR. Once the residential parking permits are fully digitized, SNAP workers will not be able to enforce the permits as they do not use mobile LPR for enforcement. Consolidating residential permit enforcement to operate uniquely under the Parking Division can be advantageous as they already have LPR technology, enforcement coverage can be optimized, and it can also help minimize administrative efforts as it relates to parking permits.

Currently, the customer portals for citations and permits are two separate platforms, which prevents the public from being able to apply for permits, manage citations, and pay for tickets on one website. Furthermore, the current system does not allow for compliance checks to be conducted on permit applications, which delays administrative processes for City staff to approve permit applications. It is recommended that the City contracts with a CPMS provider that can provide a unified platform to manage citations and permits in one account, which could help streamline operational processes, cut administrative costs, and improve the end-user experience.

Signage

The multi-vendor approach for mobile payment has resulted in confusing signage, which has overwhelmed community members with too many options for payment as seen in Figure 4. With the adoption of a single-vendor model for the mobile payment application, the City would need to update the existing paid parking signage to reflect the proper payment methods available to the community once the single mobile payment provider has been selected. As part of the RFP process, mobile payment application vendors were asked to propose an extensive signage plan that features clear, concise signage that is easy to read and predictable throughout the Downtown area. The City should work closely with the selected mobile payment application vendor to ensure the signage is compliant with City standards and the Manual on Uniform Traffic Control Devices (MUTCD) design requirements. In addition to the paid parking signage, the City should emphasize any time limits applied to on-street parking spaces onto signage, given that it is currently unclear to the general public when there is a time limit applied to a space. A consistent brand and design for signage can help enhance the City's identity through a cohesive visual aesthetic, as well as increase recognition of parking signs. The City could consider creating a parking logo specific to SLO that can be used on all parking signage. Examples of municipal parking logos can be found in Figure 5. The City should ensure that signage colors, sizes, and symbols are consistent and easy to recognize.

Figure 5. Existing Paid Parking Signage

Figure 4. Examples of Parking Logos

PARK Detroit

PARKSL

Park Omaha

The City is currently working on updating their signage in a phased approach. Phase 1 consists of updating the paid parking signage to reflect the single mobile vendor selected, and the City will be installing sign riders under all paid parking signs rather than having them only at the pay station signs. Phase 2 will begin after the technology implementations are complete and will consist of a comprehensive update of all on-street signage to ensure that signs meet MUTCD design requirements, and all parking regulations are accurately displayed, including time limits, paid parking policies, and residential parking policies. When considering the placement of informational signs, the goal is ensuring a parker can easily identify a sign from their parking stall. With this in mind, signs should be placed along the block face every 2 to 4 parallel parking stalls or 4 to 6 angled/perpendicular parking stalls. Additionally, a sign should accompany a pay station to direct parkers where they can make a payment. Any regulatory

signs, such as no parking or time limits, should follow CVC guidelines. Recommendations for signage are also highlighted in the Parking Rate Study.

Figure 6. Example Parking Signage

While the City works to replace the gateless solution at 842 Palm Street, the City should consider improving the signage and wayfinding at the parking structure to improve the parking experience and eliminate confusion surrounding the gateless solution for drivers in the interim. The City can leverage digital signage on the kiosks themselves or use temporary signs such as A-frames to message parking rules to drivers when they are first initiating their parking session. Considering the gateless solution is not as common and may not be as familiar for drivers, the City should communicate the expectations to drivers as clearly and directly as possible such as through instructional signage at the ingress points to communicate the "park, pay, play" concept to visitors, such as the example in Figure 6.

Electric Vehicle Chargers (EVC)

The City has a contract with ChargePoint for their EVC solution. There are currently 22 EVCs in the 871 Marsh Street garage, and the City plans on installing 41 EVCs at the new CADPS. With the understanding that ChargePoint does not integrate with the selected technology provider for PARCS, the City has decided to continue contracting ChargePoint for their EVC solution. However, the City may choose to re-evaluate their EVC solution in the future to allow for proper integration with the PARCS technology to be installed at the parking garages, which may improve operational processes and improve the user experience.

Technology Vendor Contracting

As the City procures new technology partners, it is recommended to consider the following components to be included in each contract based on industry best practices.

- **Service Level Agreements (SLA) -** The City should include SLA's as part of each agreement, which are used to measure the performance of the vendor during the term. Recommended SLA's are being provided to the City as part of the scope of work for each technology.
- **Data and Security Requirements –** The City should include specifications for data and security requirements in each agreement, which are used to ensure compliance with related laws as well security and proper ownership of the City's data. Recommended requirements have been provided to the City as part of the scope of work for each technology.
- **Data Integration –** The City should introduce and maintain data integration standards for all vendor agreements and contracts in order to establish operational consistency and future-proof the parking technology system. Incorporating these standards into any future contracts with technology vendors can allow the City to maintain authority in the data being collected and used by the vendor, ensure compliance with the City's security and system requirements, streamline integration processes with other technology

systems, and can also enable smoother transitions between vendors if the City chooses to terminate a vendor for any reason.

- **Contract Term –** The City should consider the length of each contract based on the technology provided. A base five (5) year term for most agreements is a generally accepted standard. Optional one (1) year extensions up to ten (10) years total may also be included allowing the City flexibility to maintain a partnership that is advantageous. For technologies that require little capital to implement, such as mobile payments, a shorter base term of three (3) years with optional one (1) year extensions up to ten (10) years total is recommended.

Included in Attachment 5 are requirements related to Data, Security and Integrations that can apply to most parking technology contracts.

QR Code Scams

As the City moves towards implementing new technologies, it is imperative to consider QR code scamming which has become all too common, especially in a payment environment. The scam involves unauthorized individuals affixing QR codes to parking meters, pay stations and signage. Once a customer scans the QR code, they are guided to an app or site instructing them to enter their payment credentials (bank card, banking information, etc.). If the customer continues through the process, their payment credentials are captured and used for fraudulent activity. These scams have become more complex and convincing, sometimes even including city branding.

At this time, it is recommended for the City not to use any physical QR codes for payment, Additionally, advertising that the City does not use QR codes notifies customers not to use any QR codes they might find. Advertising can include postings on signage, stickers, meters, pay stations, and informational materials and websites. As part of ongoing maintenance procedures, the City should include a regular physical check of assets to ensure no QR codes have been affixed or remove any that have been. As this is an evolving trend, City staff should complete continuous research and adjust policies as the scams change.

Garage Security

Creating a secure garage environment is key to ensuring the safety of customers as well as creating a welcoming space. While not included in the scope of this roadmap, the City is encouraged to complete an assessment of each facility and consider the addition of features that enhance safety and security. With the use of both technologies and physical elements, parkers will not only feel more comfortable entering the garage for the first time but will also be confident returning to park upon future visits. In addition, these investments will help protect the City's parking assets for the long term. The City may consider launching a pilot program to test the effectiveness of the various security technologies and enhancements. While conducting an assessment, the City may consider the following enhancements:

- **Security Cameras -** Cameras can be utilized to monitor the ingress and egress points, pedestrian entry and exit points, payment stations, stairwells and each floor. Video footage should be saved for at least three months in order to be reviewed in case of an incident. Additionally, signs should be posted notifying visitors of active recording.

- **Lighting -** The entire facility should be well lit, including each floor, stairwells and entry and exit points.
- **Paint -** Utilizing white or light-colored paint creates a brighter and welcoming atmosphere, and prevents shadows and dark corners.
- **Security Services -** Third party security services can be contracted to add a physical presence in the garage. The security personnel can conduct foot patrols, or vehicle patrols, which would allow them to cover multiple facilities.
- **Call Boxes -** Emergency call boxes may be installed in facilities, so that a customer in distress may easily press a button to reach emergency personnel.
- **Other Security Technology -** Security technology continuously advances with new features such as mobile robots and wall or pole mounted security centers.
- **Netting or Edge Guard -** As planned for the Cultural Arts District Garage, netting can be installed to block off open spaces on higher floors of the garage.

Summary of Recommendations

The following section summarizes the near-term, mid-term, and long-term recommendations for parking technology and operating systems in the City's parking program that were covered in this Roadmap:

Section	Recommendations
PARCS	*Near-term:* • The City should work with the selected PARCS vendor to prioritize reverting the 842 Palm Street garage from a gateless to a gated solution. *Long-term:* • The City should install the same PARCS technology at the other parking facilities to ensure consistency in the paid parking system.
Pay Stations	*Near-term:* • The City should terminate their pay station contract with IPS and release an RFP for a new pay station vendor. *Long-term:* • The City should consider re-evaluating pay station placements as the City starts to phase out single-space meters and install more pay stations in the Downtown area.
Single-space Meters	*Mid-term:* • The City should phase out all single-space meters out of the Downtown area once a pay station provider is selected through an RFP process to reach an infrastructure-lite program.
Revenue Collection and Reconciliation	*Near-term:* • The City should establish process, procedure, and performance standards with the vendor and internally between Parking Division and Finance Department staff to ensure City policies are followed accordingly for revenue collection and reconciliation processes. *Mid-term:* • The City should conduct a comprehensive assessment to re-evaluate the current operating procedures for revenue collection and reconciliation,
Mobile Payment Applications	*Near-term:* • The City should select the single mobile payment application vendor to be used for the parking program. *Mid-term:* • The City should work with the mobile payment vendor to set up integrations with the pay station provider to allow parking session extensions via mobile app.
Validations	*Near-term:* • While the garage is gateless, the City could consider working with the mobile payment vendor to introduce validation codes for use by jurors in the mobile app.

	• The City may need to continue using physical passes to accommodate jurors that do not have a mobile device. *Mid-term:* • The City should work with the selected PARCS and mobile payment application vendor to set up a fully digitized system for managing and issuing parking validations that allows for both City and business-managed permits. • The City should work with the PARCS provider to establish a validation system for juror parking.
LPR	*Near-term:* • The City should replace the existing LPR system at 842 Palm Street with the LPR solution provided by the new PARCS provider to allow for a fully integrated off-street parking system. *Mid-term:* • The City should install the same LPR solution at the other parking garages to ensure a consistent design throughout the off-street facilities. *Long-term:* • The City should pursue an LPR system that allows for cloud-based storage in order to provide flexibility for data storage, retention, and sharing capabilities.
Digital Parking Occupancy Signs	*Mid-term:* • Upon installation of the new PARCS technology, the City should work with the selected PARCS vendor to set up an integration with the existing digital parking occupancy signs to populate real-time occupancy counts.
Data Collection and Analysis	*Near-term:* • The City should regularly collect LPR data using the mobile LPR during parking enforcement for parking utilization analysis. *Mid-term:* • The City should do quarterly reports of the LPR data collected during parking enforcement to help inform data-driven decisions for any parking program adjustments.
Citation Management System	*Near-term:* • The City should terminate their citation management contract with IPS. • Release an RFP for a citation and permit management system vendor. *Long-term:* • The City should consider expanding its parking enforcement staffing so that enforcement of the residential parking permit districts can unite under the

	Parking Division instead of under the SNAP program in the Police Department.
Permit Management System	*Near-term:* • The City should terminate their permit management contract with IPS. • Release an RFP for a citation and permit management system vendor. *Long-term:* • The City should digitize the residential parking permits to allow for plate-based enforcement utilizing LPR technology and a digitally managed permit program.
Signage	*Near-term:* • The City should update paid parking signage to reflect the single mobile payment vendor selected from the RFP process. • The City should post additional signage at 842 Palm Street in the interim to help communicate to users on how to properly pay for parking. *Mid-term:* • The City should update all downtown and residential signage to be compliant with MUTCD standards and to accurately reflect business rules relating to paid parking, time limits, and residential parking restrictions. • The City should establish a list of standards for all signage to create a more cohesive, welcoming, and visually appealing streetscape.
EVCs	*Long-term:* • The City should consider pursuing a different EVC solution that would allow for integration with the PARCS technology at the off-street parking facilities.
Vendor Contracting	*Near-term:* • The City should incorporate Data, Security, and Integration standards for parking technology contracts.
QR Code Scams	*Near-term:* • The City should advertise that no QR codes are in use on signage, stickers, meters, pay stations, informational materials, and on the City's parking website to prevent scams. • The City should conduct a regular physical check of assets to ensure no false QR codes have been posted.
Garage Security	*Near-term:* • The City should launch a pilot program to test various garage security technologies and enhancements for long-term implementation to improve safety and security for parkers in the off-street facilities.

Appendix A – Community Outreach Summary

The City of San Luis Obispo (City) conducted an online survey and held two community meetings during February and March 2024 to solicit feedback from the public regarding their parking experience in Downtown San Luis Obispo (Downtown SLO). Additionally, DIXON monitored email and social media feedback from the community during the same timeframe. As part of the Technology Roadmap, DIXON conducted Needs Assessment Interviews with City staff who are involved in parking enforcement, citation and permit management, administration, and purchasing were interviewed in order to help identify the current challenges and needs as it relates to parking. The following subsections describe the results and key themes from the various community outreach and internal assessment efforts.

Summary of Key Themes

Below is a summary of key themes from a combination of insights from the survey, social media feedback, community meeting feedback, and email feedback.

- Technology issues and general confusion regarding how to pay for parking (pay stations, multi-vendor mobile payment apps, rate structures, signage)
- Increase safety and user experience in garages, especially in gateless structure
- Lowering rates and retaining free hours/days
- Concerns about transparency (2023 changes happened too quickly)
- Concerns about negative impact to locals, visitors, businesses
- Decrease evening paid parking operating hours

Survey Results

The online survey hosted on Open City Hall was open for 31 days starting on February 6, 2024, and closing on March 8, 2024. A total of 2,784 responses were received from SLO's residents, visitors, business owners, and employees regarding their parking experience in Downtown SLO. Survey respondents were divided into resident or visitor at the beginning of the survey and were later given the opportunity to identify as a business owner, employee, or N/A to answer additional questions. Due to the survey structure, it appears as if the total number of responses across the four audience groups appears to exceed the total number of survey respondents; however, a respondent can be both a resident and a business owner, for example. The table below shows the breakdown of the number of responses by audience group.

Audience Group	Number of Responses
Residents	1,715
Visitors	1,069
Business Owners	104
Employees	235

Key findings from the survey for each audience group are summarized below.

Residents – 1,715 respondents

Of the 2,784 respondents, 1,715 were residents of SLO who offered input on their parking experience in Downtown:

QUESTION 1

Do you reside in the City of San Luis Obispo?

	%	Count
Yes	61.6%	1715
No, I live outside of SLO	38.4%	1069

QUESTION 2

How often do you use public paid parking facilities in Downtown SLO?

	%	Count
5 or more times a week	7.5%	129
2-3 times a week	17.1%	293
Weekly	32.2%	552
Monthly	20.8%	357
Rarely	22.3%	383

QUESTION 3

How satisfied are you with the current experience of using paid parking technology (parking meters, pay stations, mobile payment apps) in Downtown SLO?

	%	Count
Very Satisfied	3.6%	62
Satisfied	13.1%	225
Neutral	15.2%	260
Dissatisfied	29.4%	504
Very Dissatisfied	38.7%	663

QUESTION 4

What do you consider to be the most important factors when looking for parking? Rank the following factors from (1) most important to (4) least important.

1. Cost: Finding a space that is priced at a low rate
2. Speed: Quickly finding an available parking space
3. Convenience: Finding a space right next to my destination
4. Experience: Finding a space in a clean and well-lit environment

QUESTION 8

Does the current 2-hour time limit for most on-street parking spots typically provide enough time for you when you visit Downtown SLO?

	%	Count
Yes, it is usually enough time for me	44.9%	769
No, it is usually not enough time for me	55.1%	945

QUESTION 9

Typically, when you visit Downtown SLO, how long would you prefer to visit Downtown?

	%	Count
Less than 1 hour	3.4%	59
1 hour	6.1%	104
2 hours	28.6%	491
3 hours	41.5%	711
4 hours	14.5%	249
Over 4 hours	5.8%	100

QUESTION 10

How well-informed do you feel about parking policies and any recent changes in Downtown SLO?

	%	Count
Very well-informed	17.6%	302
Somewhat informed	34.7%	595
Neutral	13.9%	239
Not very well-informed	25.3%	433
Not informed at all	8.5%	145

Visitors – 1,069 respondents

Of the 2,784 respondents, 1,069 offered input on their experiences acting as a visitor or patron in Downtown SLO:

QUESTION 19

How often do you use public parking facilities in Downtown SLO?

	%	Count
5 or more times a week	8.9%	95
2-3 times a week	14.2%	151
Weekly	24.4%	260
Monthly	31.3%	334
Rarely	21.2%	226

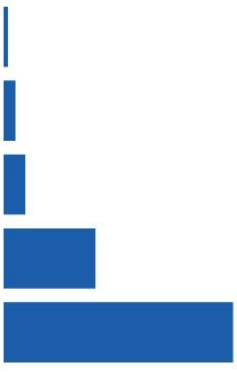
QUESTION 20

How satisfied are you with the current experience of using paid parking technology (parking meters, pay stations, mobile payment apps) in Downtown SLO?

	%	Count
Very Satisfied	3.6%	38
Satisfied	14.1%	150
Neutral	17.5%	187
Dissatisfied	27.4%	292
Very Dissatisfied	37.4%	399

QUESTION 21

How satisfied are you with the current paid parking rates in Downtown SLO?



	%	Count
Very Satisfied	1.1%	12
Satisfied	3.3%	35
Neutral	6.0%	64
Dissatisfied	25.5%	272
Very Dissatisfied	64.1%	683

QUESTION 22

What do you consider to be the most important factors when looking for parking? Rank the following factors from (1) most important to (4) least important.

1. Cost: Finding a space that is priced at a low rate
2. Speed: Quickly finding an available parking space
3. Convenience: Finding a space right next to my destination
4. Experience: Finding a space in a clean and well-lit environment

QUESTION 25

How easy is it to find an available parking space in your most frequently visited areas?

	%	Count
Very Easy	2.3%	24
Easy	11.0%	117
Moderate	40.4%	431
Difficult	31.1%	332
Very Difficult	15.2%	162

QUESTION 26

Does the current 2-hour time limit for most on-street parking spaces typically provide enough time for you when you visit Downtown SLO?

	%	Count
Yes, it is usually enough time for me	38.9%	415
No, it is usually not enough time for me	61.1%	651

QUESTION 27

Typically, when you visit Downtown SLO, how long would you prefer to visit Downtown?

	%	Count
Less than 1 hour	2.5%	27
1 hour	4.6%	49
2 hours	22.2%	237
3 hours	41.8%	446
4 hours	17.2%	183
Over 4 hours	11.6%	124

Business Owners – 104 respondents

Of the 2,784 respondents, 104 were business owners in Downtown SLO who offered the following data:

QUESTION 33

Which of the following best describes your business?

	%	Count
Retail	33.3%	50
Restaurant	11.3%	17
Office	22.7%	34
Salon	6.7%	10
Hotel	0.7%	1
Entertainment, events, and venues	1.3%	2
Health and fitness	8.7%	13
Automotive	0.7%	1
Other	14.7%	22

QUESTION 35

How many on-site parking spaces does your business provide for employees?

	%	Count
0, my employees park elsewhere	66.0%	99
1-5	24.7%	37
6-10	6.0%	9
11-20	2.7%	4
21-30	0.7%	1

QUESTION 36

What is the maximum number of employees you have at work at any given time?

	%	Count
1-5	70.0%	105
6-10	18.0%	27
11-20	7.3%	11
21-30	3.3%	5
More than 40	1.3%	2

QUESTION 39

Do you think the current on-street time limit of 2 hours typically provides enough time for your customers to park in and visit Downtown?

	%	Count
Yes	25.3%	38
No	64.7%	97
Not sure	10.0%	15

QUESTION 40

On a typical day, do you think there is enough convenient parking available for your customers Downtown?

	%	Count
Yes, my customers can typically find nearby parking.	22.7%	34
No, my customers typically have a challenge finding nearby parking.	68.0%	102
Not sure	9.3%	14

QUESTION 41

How has the 2023 paid parking rate increases affected your business revenue?

	%	Count
Revenue has drastically increased.	2.0%	3
Revenue has minorly increased.	2.7%	4
Revenue has not changed.	28.7%	43
Revenue has minorly decreased.	30.0%	45
Revenue has drastically decreased.	36.7%	55

QUESTION 42

Do you believe there are sufficient long-term parking options available for customers in your area?

	%	Count
Yes, there are enough long-term parking options.	17.3%	26
No, there are insufficient long-term parking options.	74.0%	111
Not sure / No opinion	8.7%	13

QUESTION 43

Do you think the current on-street meter permit time limit of 10 hours typically provides enough time for your employees to park in and work Downtown?

	%	Count
Yes	74.7%	112
No	10.0%	15
Not sure	15.3%	23

QUESTION 44

On a typical day, do you think there is enough convenient parking available for your employees Downtown?

	%	Count
Yes, my employees can typically find nearby parking.	30.7%	46
No, my employees typically have a challenge finding nearby parking.	69.3%	104

QUESTION 45

Do you purchase either the Quarterly Structure Pass (for parking structures) and the 10-hour meter permit (for street parking) for yourself or your employees?

		%	Count
Yes		32.7%	49
No		67.3%	101

QUESTION 60

If you have employees who cannot park on-site for work, do you provide them with the City parking permits?

		%	Count
Yes, I obtain parking permits from the City and assign them to my employees.		44.9%	22
Yes, I reimburse my employees for parking permits.		8.2%	4
No		44.9%	22
Not applicable, I have sufficient on-site parking for my employees.		2.0%	1

Employees – 235 respondents

Of the 2,784 respondents, 235 were employees of Downtown SLO who offered the following data:

QUESTION 46

Which of the following best describes where you work?

	%	Count
Retail	21.2%	79
Restaurant	10.5%	39
Office	51.2%	191
Salon	3.2%	12
Hotel	1.3%	5
Entertainment, events, and venues	5.9%	22
Health and fitness	2.9%	11
Automotive	0.3%	1
Industrial	2.1%	8
Industrial	1.3%	5

QUESTION 48

Where do you typically park while you are at work?

	%	Count
In a private parking area provided by my employer	24.9%	93
On the street, in an area with paid parking	16.4%	61
On the street, in an area without paid parking	37.0%	138
In a public parking lot or garage	21.7%	81

QUESTION 49

How far away do you typically park from work?

	%	Count
1 block or less	34.3%	128
2 blocks	13.9%	52
3 blocks	20.4%	76
4 or more blocks	31.4%	117

QUESTION 50

How long does it typically take you to find an available parking space before work?

	%	Count
Right away (1 minute or less)	29.5%	110
Between 1-5 minutes	37.3%	139
More than 5 minutes	33.2%	124

QUESTION 51

If you are parking in 2-hour on-street spaces, how frequently do you park or re-park while at work?

	%	Count
Never	9.9%	37
Sometimes	8.6%	32
Once per day	5.9%	22
Twice per day	4.3%	16
More than twice per day	9.9%	37
Not applicable, I don't park in the 2-hour on-street spaces for work.	61.4%	229

QUESTION 52

Do you think the current on-street time limit of 2 hours typically provides enough time for your customers to park in and visit Downtown?

	%	Count
Yes	19.3%	72
No	59.5%	222

Not sure		21.2%	79

QUESTION 53

On a typical day, do you think there is enough convenient parking available for your customers Downtown?

		%	Count
Yes, my customers can typically find nearby parking.		17.2%	64
No, my customers typically have a challenge finding nearby parking.		62.5%	233
Not sure		20.4%	76

QUESTION 54

Do you believe there are sufficient long-term parking options available for customers in your area?

		%	Count
Yes, there are enough long-term parking options.		16.4%	61
No, there are insufficient long-term parking options.		63.0%	235
Not sure / No opinion		20.6%	77

QUESTION 57

Do you purchase either the Quarterly Structure Pass (for parking structures) and the 10-hour meter permit (for street parking)?

		%	Count
Yes		18.5%	69
No		81.5%	304

Community Meetings

Five community meetings were held, with two being held in-person and three being held virtually via Zoom. The following table summarizes the details of each community meeting:

Name	Date(s)	Setting	Number of Attendees*
Community Meeting Round 1	February 13, 2024	In-Person	35
	February 14, 2024	Virtual	20
Community Meeting Round 2	April 4, 2024	In-Person	22
	April 5, 2024	Virtual	15
Community Meeting Round 3	May 2, 2024	Virtual	12

*Including DIXON and/or City staff.

Overview of Community Meeting Rounds

- The first round (comprised of one in-person and one virtual meeting) focused on identifying and receiving feedback from the community on their parking experiences.
- The second round (comprised of one in-person and one virtual meeting) focused on sharing preliminary findings from community outreach, the parking utilization study, and initial financial modeling.
- The third round (comprised of one virtual meeting) focused on sharing the final parking rate model options for community feedback.

Key Themes

Community Meeting Round 1

- **Paid Parking Rates**: Current rates are too high, were changed too quickly, and are negatively impacting businesses and visitors. Rates should be more affordable, including discounted rates for certain groups, free parking hours/days, and longer time limits. Some community members have recommended dynamic pricing structures.
- **Technology Issues and User Experience**: Confusion and frustration with the current parking system, including difficulties with payment methods, time limits, use of the gateless structure, mobile apps, and signage. It should be simple and consistent in how one pays for parking. Residents are asking for immediate action to improve the gateless structure parking experience.
- **Transparency**: Desire for more transparency and communication from the city regarding parking policies and changes.
- **Prioritizing Locals**: Advocacy for the prioritization of local residents and businesses in parking policies over tourism-related interests, such as through resident benefit programs.

Community Meeting Round 2

- **Financial Modeling**: Emphasis on lowering rates as a top priority for community members. Confusion about the structure of the parking enterprise fund.

- **Technology Issues and User Experience**: Desire for improvements to wayfinding and signage at parking structures, and more clear communication of existing rate structures to eliminate confusion.
- **Welcoming back locals**: Desire for programs and marketing efforts to welcome locals back to Downtown San Luis Obispo and rebuild trust with the community, such as a PR campaign through promotional codes on the mobile payment apps.

Community Meeting Round 3

- **Financial Modeling:** Emphasis on lowering rates as a top priority for community members. Interest in convenient, accessible short-term parking for pick-up/drop-off and running errands. Interest in ensuring that parking program revenue is minimal in order to achieve the lowest rates possible.
- **Parking Fund:** Interest in exploring potential alternative funding sources for the Parking Fund.

Email and Social Media Feedback

DIXON received email commentary and monitored SLO's social media sites (Instagram, Facebook, and Twitter) for feedback from February 5th to March 11th. Approximately 80 emails and 60 social media comments were received. The following key themes and recommendations were identified:

- **Paid Parking Rates and Operations:** Community members recommended changing the paid parking hours to end at 6PM instead of 9PM, keeping the first hour free to encourage business activity, and free parking on Sundays. There was also interest in implementing demand-driven parking rates. General concerns around the inconsistency of pricing structures between on-street and off-street were mentioned, and community members recommended adding more signage to make the pricing structures easier to understand. Some community members recommended a discounted parking rate for residents.
- **Technology Issues and User Experience:** Community members expressed difficulty with using the kiosks and trying to estimate time needed to park prior. Inability to add time to parking session via mobile app was also mentioned.
- **Safety:** Community members expressed that cleanliness and safety should be a priority, and that some parking structures feel unsafe due to poor lighting. Community members also expressed feeling unsafe when walking from a parking space to their destination.
- **Accessibility:** Several community members expressed a desire for more loading/unloading spaces around downtown, as well as more accessible parking spaces. Community members also expressed a desire for better transit options, including more frequent bus routes downtown to encourage less vehicle use.

Internal Needs Assessment Interviews

DIXON conducted four internal Needs Assessment interviews to discuss current parking operations and the City's desired direction for the parking program in the future. City staff from the following departments/divisions were interviewed as part of the process:

- Mobility Services
- Parking Division
- Procurement Division
- City Attorney's Office

The Needs Assessment interviews were organized to cover the following topics. Key takeaways and discussion points for each topic are summarized below:

- **Operations and Maintenance:** Staff highlighted the importance of easy-to-use paid parking technologies, including simple user interfaces on pay stations for a seamless parking experience. Staff expressed their desire to remotely control, and trouble shoot the pay stations in real-time from a computer system in-house instead of necessitating a ticket to be submitted to the technology provider, which can significantly delay maintenance procedures. In general, staff would like to see more efficient customer service response times from the technology providers.
- **Citation Processing and Permits:** Staff expressed their desire to have a unified platform for permit and citation management, both for the City and for the public. The group discussed the need to focus on backend citation processing and administrative tasks, particularly addressing customer complaints about delays in receiving citation notices and appeals. Staff have expressed that the current citation adjudication process is complicated and inefficient, lacking necessary functionalities like customizable notices and the ability to handle partial payments, which leads to customer dissatisfaction and administrative burdens.
- **Enforcement:** Staff expressed challenges with load times for LPR data to be populated to enforcement handhelds, which can delay enforcement patrols. Staff expressed frustrations with the current enforcement software, such as delays in citation processing, difficulty in adding notes after issuing citations, and the inability to easily search for vehicle information. Overall, the current system lacks real-time updates and efficient data management. Staff expressed that they would like real-time location updates, improved search functions for citation data entry such as vehicle make, and improved internal communication regarding device issues and support ticket responses. Staff also highlighted the importance of creating an internal log for documenting issues and holding technology vendors accountable for any delays or technical failures.
- **Purchasing and Contracting:** Staff have recognized the difficulties with the current enforcement module technology provider and have expressed concerns about termination clauses. Staff have expressed the need for a cohesive strategy in contract negotiations and terminations in order to minimize any potential revenue losses and operational disruptions.

Appendix B – PARCS Performance Standards

Following are suggested performance standards and measurements for a PARCS technology contract. These are to be considered in addition to Attachment 5, which includes Data, Security and Integration requirements that may also apply.

- **Management System or Bank Card Processing Failure:** Any failure of the Management System or bank card processing solution provided by the Contractor that prevents the processing of bank cards and the collection of related revenue shall result in damages of $500 per 24 hour period. City shall provide Contractor with 12-hour notice to respond and repair the failure prior to being entitled to this liquidated damage.
- **Systemic Hardware Issue:** Any hardware failure that affects 25% or more of any one component of the City's equipment fleet at one time which causes in the inability to collect any one type of monies shall result in damages of $250 per 24-hour period per component. Upon City notice to the Contractor, Contractor will have 10 calendar days to correct the hardware failure, up to and including specific component replacement, prior to the City being entitled to this liquidated damage. City will provide reasonable access and support to the Contractor in correcting the failure.
- **Systemic Software Issue:** Any software failure that affects 25% or more of any one component of the City's equipment fleet at one time which causes in the inability to collect any one type of monies or charge motorists the correct amount shall result in damages of $250 per 24-hour period per component. Upon City notice to the Contractor, Contractor will have one business day (24 hours) to correct the failure prior to City being entitled to this liquidated damage. City will provide reasonable access and support to the Contractor in correcting the failure.
- **PCI Data Security Failure:** Failure of Contractor to maintain Payment Card Industry ("PCI") Data Security Standard Certification, shall result in damages of $10,000 on the twenty-eight (28th) calendar day following non-compliance ("first assessment"). The twenty-eighth (28th) calendar day following the first assessment and every twenty-eight (28) calendar day thereafter shall constitute a "subsequent assessment". On each additional twenty-eighth (28th) calendar day following the first assessment and any subsequent assessments, the City shall be entitled to liquidated damages of $25,000 until the failure is cured. Damages during subsequent assessments shall be prorated by day.
- **Cash Reconciliation Accuracy:** Any failure of the Contractor's solution that results in a 3% or greater variation between the actual funds collected versus the Management System reported funds shall result in damages of $250 per 24-hour period. Upon City notice to the Contractor, Contractor will have seven business days to correct the failure, if determined that Contractor is at fault, prior to City being entitled to this liquidated damage. City will provide reasonable access and support to the Contractor in identifying and correcting the failure.
- **Customer Support:** Any failure of the system, network, or personnel necessary to provide the required customer support resulting in service not being available to a customer more than two times in a 24-hour period shall result in damages of $250 per 24-hour period. Upon City notice to the Contractor, Contractor will have one day (24

hours) to correct the failure prior to City being entitled to this liquidated damage. City will provide reasonable access and support to the Contractor in correcting the failure.

- **City Support:** Any failure of the Contractor to provide the required City Support resulting in support not being available to the City customer within 48 hours of initial email or phone contact shall result in damages of $250 per 24-hour period. Upon City notice to the Contractor, Contractor will have one day (24 hours) to correct the failure prior to City being entitled to this liquidated damage.
- **RMA Fulfillment:** Any failure to process and ship an RMA or provide notification to the City with reasonable explanation for delay, within 14 days of the receipt of the shipment from the City shall result in damages of $100 per day until the return RMA shipment is received by the City. The first occurrence of this failure will result in a written warning by the City with no damages applied. Any subsequent failures will incur this liquated damage without notice being required by the City.

ATTACHMENT 1

Parking Access Revenue Control System (PARCS) Scope of Work

The City is soliciting PARCS vendors ("Vendor") to provide responses on the following services. Responses should not exceed five pages total.

I. Gated Solutions

Vendor shall describe options for gated solutions, including potential frictionless systems, or having gates on either entry or exit only.

II. Pay Stations

Vendor technology must provide Pay by app, QR code, and on foot capabilities. Proposer must describe the options to accept cash and coin.

III. License Plate Recognition (LPR) integration

The City is currently using Genetec FreeFlow at 842 Palm Street. Vendors should advise integration with this solution and/or advise options for plate-based PARCS management to accommodate for permit holders or pre-payment. The City is installing appropriate loop detectors at the CADPS, but may need installation at the other existing garages depending on the solution.

IV. Validations

Vendor must be able to support a validation program, that could include special events and merchant participation throughout the City. Vendor must be able to support business-managed and/or City-managed validations.

V. Reservations

Vendor shall describe reservation capabilities including identifying the operational and enforcement support demands that must be supported by the City.

VI. EV charging integration

Vendor shall describe EVC solutions, and any potential integrations. The City is currently using ChargePoint chargers, however the contract is set to expire on July 22, 2024.

VII. Permits

Vendor must be able to support a monthly e-permit system with LPR and/or Bluetooth access control.

VIII. Pedestrian access control

Vendor shall describe technology options for pedestrian access control at elevators and/or stairwells in the garage structures.

IX. Occupancy counts

Vendor shall describe ability to integrate with existing hardware outside of garage structures for occupancy counts, or provide technology that can yield entry/exit counts such as through AI sensors for sign counters.

X. Dashboard (Monitoring / Reporting features)

Vendor shall provide a dashboard that allows City staff to manage and monitor equipment, as well as monitor revenue, occupancy, and validations.

XI. Customer Support

The City is seeking a vendor that will be able to provide 24/7 remote customer support, including assisting customers in-lane and at the pay stations, addressing and correcting errors with customer parking transactions, and transaction or payment disputes. Vendor shall describe the turnkey services offered for customer support.

XII. City Support

The City is seeking a vendor that will maintain consistent responsiveness throughout the entire term length to provide support on any administrative, operational, or technological needs. Vendor shall maintain a single point of contact for the City. Response time has been a challenge within the previous scope, explain your commitment and guarantee that you will contractually commit to regarding response time to the City.

XIII. Additional Features

Vendor shall describe any additional customer service features that are included in the services that will be provided to the City upon implementation. Responses should be specific and describe additional customer service features that are available upon launch of the selected PARCS. Any additional costs associated with these features must be specified.

XIV. Integrations

The PARCS vendor should be able to support any future integrations with the City sub-systems including but not limited to:

- Mobile payment provider (MPP) (TBD)
- License plate recognition technology – Route 1 - Genetec Freeflow (fixed mount) & mobile
    - LPR will be equipped in all garages for entry and exit to offer frictionless PARCS,
- Citation management systems - IPS Group
- Permit management systems – IPS Group
- Intercom customer service vendor (TBD)
- Other vendors (TBD)

XV. Cost Proposal

Vendor shall outline all costs associated with the services provided, including hardware purchase, installation, software, warranty, transaction fees, and any additional costs including integration costs, spare parts and any ongoing fees. See Appendix B for the pricing sheet. Specifications for each garage are detailed in the pricing sheet.

ATTACHMENT 2

Pay by Plate Pay Stations

Scope of Work

Author:

Dixon Resources Unlimited

Updated:

9/5/24

ATTACHMENT 2

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1 Project Overview

This Request for Proposals (RFP) is for the procurement of a parking pay station solution to be implemented throughout the City with an emphasis on the customer service experience providing ease of use and convenience to a motorist. The selected Contractor will provide the full range of services including parking pay station equipment, a web-based pay station maintenance system, warranty and customer service support, training, reporting and maintenance tracking, and integrations with existing and future parking technology vendors.

Following are current statics related the to the City's parking meter program.

City to insert current meter statistics here.

Payment Chanel	Quantity	Approximate Annual Revenue
Pay Station		
Single Spare Meter		
Mobile Payment		

2 Contractor Minimum Requirements

The following is a list of minimum requirements for a Contractor:

2.1 Contractor shall have a minimum of three active and currently contracted customers located in the State of California with a minimum of 15 pay station per installation.

2.2 Contractor shall have a minimum of ten active clients located in the United States of America with a minimum of 50 pay stations.

2.3 Contractor shall have legally operated in the United States of America for a minimum of five years.

2.4 Contractor's proposal and pricing will be valid for at least 180 days from submittal.

3 Pay Station Requirements

ATTACHMENT 2

The following is a list of key requirements for the Pay Station solution:

3.1 Pay stations must be able to store at least 10 different rate structures configurable by time of day, length of stay, and day of the week. The technology must allow for simultaneous rate structures to be deployed to different pay stations including static/fixed rates and fixed and escalating hourly rates.

3.2 Pay station shall accommodate a pre-payment option (payments made in advance of operating hours).

3.3 Pay station technology must be simple to understand and easy to use.

3.4 Motorist shall be able to complete a transaction in as few steps/screens as possible.

3.5 All technology included in the solution must be reliable, easy to maintain, and secure.

3.6 Pay station shall include a large screen to display relevant policy and parking information, rather than using signs or decals posted on the hardware. A touch screen is preferred by the City as the main interface for the motorist. Pay station shall be able to electronically display the following to the motorist with minimal effort:

3.6.1 Rate Options

3.6.2 Days and hours of operation

3.6.3 Motorist instructions

3.7 Contractor must offer strong customer support 7 days a week.

3.8 All technology, equipment, and systems shall be ADA-compliant to the latest state and federal standards at the time of proposal submission, including all related specifications from Public Right-of-Way Accessibility Guidelines adopted on July 3, 2024.

3.9 All materials and components of the pay station shall be new (the most current model or version), unused, and not refurbished. The Contractor may submit the option for use of refurbished (like new) parts, in which case, the Contractor must clearly state which part(s) may optionally be selected by the City and any related cost savings.

3.10 Pay station shall have a modular design. Components shall be able to be quickly changed in the field and, to the extent possible, interchangeable between pay stations.

3.11 All Pay station electronic components, connections and wiring shall be fully weatherproofed and capable of outdoor use.

3.12 Pay station shall be weather, rust, and graffiti resistant and shall be made of stainless

steel or an equivalent material.

3.13 Pay station shall have additional lighting or illumination for after dark usage and limit the effects of sun glare.

3.14 Pay station shall wirelessly communicate usage, payment status, pay station access and maintenance alert data in real-time though a vendor provided cellular plan.

3.15 Pay station shall be managed by a web-based parking management system or pay station management system (PSMS).

3.16 Pay station and PSMS shall include easy to use with customizable tariff naming and the ability to download rates onto customizable, user-defined groups of pay stations.

3.17 Pay station and all components shall be warranted to operate as proposed within a temperature range of negative 15 degrees Fahrenheit to +140 degrees Fahrenheit and under environmental conditions found in the City, including but not limited to sleet, snow, hail, grime, rain, fog, sun (including direct sunlight), and vibrations.

4 Wireless Two-Way Communications

The following is a list of requirements for Wireless Two-Way Communications:

4.1 Pay station shall will be equipped with a modem, antenna, and the required software to support wireless communications.

4.2 The wireless service will be supplied by the Contractor who shall be responsible for maintaining and updating the service to ensure system uptime in excess of 99% during parking hours of operation.

4.3 The wireless communication service and related modem (or other equipment) shall be viable for at least six years from the date of the equipment's delivery.

4.3.1 After six years, if at no fault of the Contractor, the cellular carrier cancels the available service, Contractor will provide written notification to the City at least one year in advance of the cancellation and provide support to the City for upgrading the pay station at the lowest possible cost with a service that will be viable for at least six additional years.

4.3.2 If the communication service is cancelled prior to six years from equipment delivery, Contractor will be responsible for the upgrade of all pay stations including equipment, software, and on-site physical upgrade.

4.3.3 If at any time during the agreement communication service cancellation or degradation is determined to be the fault of the Contractor, Contractor will be responsible for the upgrade of all pay stations including equipment, software, and on-site physical upgrade.

4.4 Pay station shall have the ability to select from different cellular carriers that may be best for different locations.

4.5 Contractor will identify the likely cellular carrier(s) to be used for service and the process of determining reliability of signal coverage.

4.6 Contractor will provide options for connectivity besides cellular data; e.g., hardwired, fiber, Wi-Fi, etc.

4.7 Pay station transactions shall be communicated to the back-office system in real time to support pay-by-plate pay station enforcement queries.

4.8 In the case of communication outages (offline), the pay station shall be capable of storing transactions (as allowed by EMV standards), events and alarms for at least seven days, until communication is restored, at which point the data shall be transmitted to the back-office system.

5 Pay Station Display

The following is a list of requirements for the Pay Station Display

5.1 Pay station shall include a touch screen display.

5.2 Display shall be easy to read under various daytime and nighttime lighting conditions, including fog, direct sunlight, and at various angles.

5.3 Display shall be backlit and will be large enough to legibly display all necessary operating status messages to users and repair personnel. The display must be energy efficient and operate in a solar-charging (or equivalent, as applicable) configuration and not cause excessive battery drain.

5.4 Display shall be scratch and impact resistant.

5.5 Current rates and hours must be able to be displayed on the graphic display and be remotely programmed.

5.6 Display shall allow for the option to inform motorist of expiration of their paid parking session.

5.7 Motorists shall be able to select their rate option prior to submitting payment in order for the pay station to translate the amount due and inform the motorist of the payment value.

5.8 Display shall support dynamic messaging functionality to reflect changes in pricing, regulations, display messages, format, or configurations made in the PSMS and communicate wirelessly to the pay station at least once per day. The City shall have the ability to change or adjust the graphic display independent of Contractor support

and there shall be no additional costs for these types of adjustments.

5.9 Display shall have the ability to display special messaging.

5.10 Display shall clearly communicate instructions and error messages to the motorist. Where possible, alphanumeric and graphical representation is preferred. At a minimum, the display shall be capable of providing the following information:

5.10.1 Rates

5.10.2 Days and hours of pay station operation

5.10.3 Related parking regulations

5.10.4 Card Read Error – Communicating if a motorist's card was not appropriately read by the pay station.

5.10.5 Coin Payment Unavailable – Communicating that coin payment is unavailable as a payment method.

5.10.6 Bill Payment Unavailable – If applicable, communicating that bill payment is unavailable as a payment method.

5.10.7 Card Payment Unavailable – Communicating that bank card payment is unavailable as a payment method.

5.10.8 Card Payment Declined – Communicating that the provided bank card was declined and to use another payment method.

5.10.9 Out of Order – Communicating that the pay station is fully out of order.

5.10.10 Receipt Unavailable – If applicable, communicating that a printed receipt is unavailable.

5.10.11 Customizable messages as dictated by the City on one or more screens.

5.10.12 Customizable messages notifying the motorist of other payment options (example – text-to-pay or mobile payment) on one or more screens.

6 Pay Station User Interface

The following is a list of requirements for the Pay Station User Interface

6.1 Any pay station buttons, touch screens or physical touch points must be vandal resistant, weatherproof, and corrosion resistant.

6.2 Any pay station buttons shall include a lighting feature so that a motorist can easily find the button in low light scenarios.

6.3 Any pay station buttons, touch screens or physical touch points shall be easily maintained and replaced as needed.

7 Payments

The following is a list of requirements regarding payments at the Pay Station:

7.1 Pay station must allow payment through multiple channels, including coin, cash, and bank card. Near Field Communication (NFC) payment (including contactless bank cards, Apple Pay and Google Pay) shall be supported. The City shall have the option to order any number of pay stations in any payment configuration

7.2 Pay station shall accept monies through a jam-resistant coin, bill and bank card interface.

7.3 Pay station shall accept all $0.05, $0.10, $0.25 and $1 coins in active circulation.

7.4 If applicable, pay station shall accept all $1, $5, $10, and $20 bills in active circulation.

7.5 Monies must be deposited directly into, and stored in, secured containers in the pay station's vault area.

7.6 Monies must be easy to collect, being able to be completed in two minutes or less.

7.7 All collection activities should include events reported to the PSMS.

7.8 Pay station collection receipt printing shall be optional, allowing for removal of specific revenue information from the printed receipt or on-screen details.

7.9 Maintenance personnel must be able to easily clear coin or bills jams without special tools and accessing the coin or bill vault.

7.10 Pay station must allow the motorist to pay for a parking transaction at any pay station within a City defined zone.

7.11 Pay station will have the ability to allow the addition of time to existing transactions, however, the add time feature must disallow the ability to purchase time past the maximum time allowed by license plate for the parking location.

7.12 Pay stations shall be programmed to accept extended payment within applicable City policy requirements.

7.13 Pay Station shall allow for multiple motorist payment receipt options, including, but not limited to, print options, receipt by text, or no receipt.

7.14 Contractor, the pay station, the associated communications system, the backend server and gateway services shall all be compliant with Payment Card Industry Data

Security Standard (PCI Level 1 certified by a Qualified Security Assessor (QSA)) as applicable.

7.15 Pay station bank acceptance system will allow and compliant with EMV payments.

7.16 Contractor will provide a payment gateway for processing of bank cards which is capable of processing Visa, Mastercard, American Express and Discover.

7.17 Contractor will integrate the City's current merchant process, XXXX.

8 Clock

The following is a list of requirements for the Pay Station Clock:

8.1 Pay station must have a 365-day calendar real-time clock that completes a time-sync with the server at least once every 24 hours.

8.2 Pay station will either retain the time settings during battery replacements or servicing or will accurately reset the time settings without losing prior programming within one minute of restart.

8.3 Pay station clock shall be programmable at least one year in advance for automatic daylight savings time changes and shall support any State/Federal changes to Daylight Savings Time.

8.4 Pay station clock shall be accurate to within plus or minus two seconds per day (where a day is defined as any given 24-hour period).

8.5 Time of day and date shall be available to be viewed in the maintenance screens.

9 Pay Station Power

The following is a list of requirements for the powering of the Pay Station:

9.1 Pay stations must have the capacity for power by a rechargeable (or equivalent) battery.

9.2 Pay station must include solar recharging capability.

9.3 Batteries shall be located in an easily accessible storage area inside the unit that can be changed out in less than 2 minutes and without the use of any specialized tools.

9.4 Batteries shall be able to be recharged outside of the pay station.

9.5 For environmental reasons, Nickel-Cadmium batteries shall not be used to power the pay stations.

9.6 When battery voltage falls below a minimum threshold, the pay station will generate an alert prior to the pay station going out of service.

9.7 Battery connections will be designed to resist corrosion and sustain a minimum of five years of service.

9.8 Current battery voltage for both rechargeable (solar or equivalent) and non-rechargeable batteries will be available on the display and through the PSMS.

9.9 All locally stored pay station data will be retained during battery replacement and battery failures for at least seven days.

9.10 Contractor shall guarantee a life of at least five years for a battery under normal use. Contractor shall provide training on proper battery care and maintenance to maximize the life of a battery.

9.11 Upon end of life of a battery, after 5 years, Contractor shall support the City in the replacement of the battery.

10 Pay Station Security

The following is a list of requirements for the Pay Station Security:

10.1 Pay stations shall have high security locks for all housing and cabinet doors.

10.2 Cash vault areas of the pay station shall not be accessible from the maintenance compartment and access shall require separate keys.

10.3 Vault area will be resistant to vandalism, theft, and other attacks to remove or disable the vault.

10.4 Exterior locks shall be internally or flush mounted to reduce visibility to the public.

10.5 Exterior locks shall be weather resistant to prevent rust and access of liquid inside the pay station.

10.6 Exterior locks shall be uniquely keyed for the City, whereas no other client will have the same combination.

10.7 Pay stations shall be resistant to vandalism, theft and other attacks.

11 Maintenance

The following is a list of requirements for the Pay Station Maintenance:

11.1 Pay station shall be able to be fully maintained by City staff or its designee.

11.2 The following major components shall be able to be replaced by a trained technician within 10 minutes of arrival at the pay station:

11.2.1 Coin acceptor

11.2.2 Bill acceptor (if applicable)

11.2.3 Bank card reader

11.2.4 Main board (CPU)

11.2.5 Printer

11.2.6 Battery

11.3 Any other pay station component shall be replaceable by a training technician within a reasonable time period.

11.4 Any special tools required for maintenance that are not easily available at a standard hardware store will be provided by the Contractor.

11.5 Pay station display shall include a maintenance menu, accessible only by credentials available to a maintenance technician.

11.6 Pay station maintenance menu shall include the following capabilities:

11.6.1 View current status of the pay station

11.6.2 View current events, alerts and/or alarm

11.6.3 View current battery voltage

11.6.4 Test all available components

11.6.5 Print test receipt, if applicable

11.6.6 Test communication to the PSMS

12 Pay Station Management System

The following is a list of requirements for the Pay Station Management System

12.1 The Proposer shall provide and maintain a Pay Station Management System (PSMS) for the term of the contract.

12.2 PSMS shall be hosted by the Contractor, or their subcontractor. Contractor shall maintain full responsibility, contractually or otherwise, for any third-party systems or hosting provided as part of this Proposal.

12.3 PSMS must provide secure, web-based back-office system including modules for the following

12.3.1 Real time status of all pay stations

12.3.2 Real time and historical events, alert, alarm, and outage data

12.3.3 Real time and historical payment transaction data including search and look up capabilities

12.3.4 Pay station management features including rate policies, display updates and more

12.3.5 Detailed collection reporting to allow for accurate reconciliation of collected cash

12.3.6 Detail bank card processing report to allow for accurate reconciliation of bank card transactions

12.3.7 Standard and customized reporting capabilities including the ability to create custom templates for future use.

12.4 PSMS shall allow the City to track events, alerts and alerts from initiation at the pay station to the closing of such items once repaired in the field.

12.5 PSMS shall provide the ability to identify pay stations by descriptions, address, and zones. Mapping functionality is a desirable feature.

12.6 PSMS shall easily indicate pay station status and send configuration events, alerts and alarms to designated personnel via email and text.

12.7 PSMS shall provide real-time verification of parking spaces payment status for enforcement purposes.

12.8 PSMS shall allow the remote download of all rate changes, display changes, receipt layout changes, other user interface changes and operating system changes and upgrades with no upcharge for wireless data usage.

12.9 PSMS and pay station shall include the ability to program and display different rate schedules by time of day, length of stay, and day of the week, including dynamic and progressive rate structures for peak occupancy periods.

12.10 Contractor rate schedules shall be integrated or replicated with other City parking payment systems, such as mobile payment, if applicable, to ensure consistent and accurate rate schedules.

12.11 City staff shall have the ability to program rates independent of Contractor support with no additional costs associated with these changes.

12.12 PSMS shall include a customizable dashboard that allows the City to display

relevant analytics associated with the paid parking program including occupancy data, revenue, and equipment performance.

12.13 Contract shall offer the ability to integrate data from third-party systems into the PSMS allowing for a centralized reporting system and inclusion of the data in the dashboard display. Integrations will include, at a minimum, other paid parking technologies for both on and off-street operations.

12.14 PSMS shall allow for reports to be exported as Excel, CSVs and/or PDF files.

12.15 PSMS shall schedule any batch style reporting to occur on demand or by 5am daily, if applicable.

13 Warranty & Contract Support

The following is a list of requirements for the Pay Station Solution Warranty and Support:

13.1 Contractor shall include a minimum of a one-year hardware warranty.

13.2 Contractor shall provide a warranty on all software and system solutions for the contract term.

13.3 Hardware warranty shall be effective on the same day for all pay stations included in the initial order, becoming effective on the last day of installation of the pay station implementation or 90 days from delivery of all pay stations, whichever comes first.

13.4 For any subsequent orders, the hardware warranty shall be effective on the date of delivery.

13.5 Contractor shall provide ongoing technical support services through the term of the contract for regular operations and maintenance services, including a toll-free phone number and online help (Help Desk). Support services shall be available from 8am to 5pm Pacific Time Zone, seven days per week (excluding holidays).

13.6 Contractor's Help Desk and related staff shall be located in the United States of America.

13.7 Contractor shall provide 24 hours per day, 7 days per week monitoring and services for outages or issues that impact the entire system.

13.8 Any requests for support that cannot be handled immediately by the Help Desk shall be acknowledged by the Contractor within one business day and updated on a regular basis.

13.9 Contractor shall utilize a ticket tracking system to open, track and close support requests from the City.

13.10 The system must be capable of providing remote off-site diagnosis and support

via wireless access. The system must be capable of remote software upgrades via wireless access.

13.11 Contractor shall provide regular and ongoing technical bulletins that identify product notifications, technology updates, lessons learned, and/or system performance that details issues, changes, improvements and upgrades.

13.12 Requests for Quotations for parts, equipment or service from the City must be fulfilled within three business days.

13.13 Return Merchandise Authorization (RMA) requests from the City must be addressed within three calendar days. Upon return of equipment to the Contractor, the RMA must be processed and return equipment shipped within 14 days and/or a status update as to the expected time of arrival (ETA).

13.14 Shipment of the RMA to the Contractor will be at the cost of the City. Shipment of the return equipment will be at the cost of the Contractor.

13.15 RMA shipments to the City must include advance email delivery notification, delivery date/time and the associated tracking number to the designated City point of contact. Deliveries to the City shall only occur within regular business hours.

14 Project Management

The following is a list of requirements regarding Project Management for solution delivery:

14.1 Contractor shall assign a Project Manager for the duration of the planning, implementation, delivery and installation portion of the contract who will be responsible for, including but not limited to:

14.1.1 Project oversight and delivery of the system.

14.1.2 Being a single point of contact for the City and providing for the management, implementation, and on-going trouble shooting of the System during its installation.

14.1.3 Coordinating efforts with the City and any subcontractors.

14.1.4 Being available as required for onsite work and otherwise available to the City during regular business hours via email, phone or video conference to respond to City needs, questions and or issues.

14.1.5 Developing and maintaining, in consultation with the City, a detailed implementation and project plan for the System.

14.2 Contractor’s Project Manager shall be experienced in the Contractor’s products and parking operations, able to provide guidance and suggestions to the City on best practices.

14.3 Contractor shall provide a design review process for customizable and configurable portions of the solution. The City shall sign off on the design review documentation before production of these items.

14.4 Contractor shall test all hardware, software and systems prior to delivery to the City.

14.5 Contractor shall develop a training plan for review and approval by the City.

15 Training

The following is a list of requirements for Training:

15.1 Contractor shall provide a training plan that includes, but is not limited to, installation, troubleshooting, repairs, preventative maintenance, revenue reconciliation, and reporting. The training plan shall include:

15.1.1 Types of training course with a target audience

15.1.2 Description of course

15.1.3 Length of course

15.1.4 Method of training (video conference, in person, etc)

15.1.5 Prerequisites for the training course

15.2 Contractor training must include, at a minimum, the following City personnel: operations, maintenance, customer support, administration, and finance.

15.3 Training will occur in person or via video conference as is most appropriate for the topic. At a minimum, Contractor will provide at least two days of onsite/in person training for operations and maintenance.

15.4 Training will be provided by qualified experts from the Contractor.

15.5 The City may request additional training sessions at reasons intervals and lengths via video conference for no extra cost for the contract term.

15.6 The City may request additional training sessions in person. The Contractor will provide a quote for services within one week, and perform that training within four weeks, of the City's request.

15.7 Contractor will provide necessary training to the City for any new, upgraded or additional functionality provided during the term of the contract.

15.8 Contractor shall supply, and keep current, digital copies of all operating, training, maintenance, repair and user's manuals, which include detailed instructions for pay station and system usage.

16 Work Order Management (Optional)

The following is a list of requirements for the Work Order Manager Solution:

16.1 PSMS shall include a work order management system (WOMS).

16.2 WOMS shall automatically create maintenance work order tickets generated by pay stations events, alerts or alarms.

16.3 WOMS shall route work orders automatically to the City assigned contacts via email and text.

16.4 WOMS shall allow for manual ticket creation for any reason and route for use by maintenance, customer service, City management and more.

16.5 WOMS shall provide for the entire life cycle of a ticket including creation, routing, addition of comments/notes, and closing.

16.6 WOMS shall provide a mobile application or mobile compatible website for in field entry and activity.

16.7 WOMS shall include reporting functionality that allows management to review ticket history and statistics.

17 Integrations

The following is a list of requirements for Pay Station Solution Integration:

17.1 Contractor shall provide real-time integration with the City's current, new, and future parking technology and data management Contractors, including, but not limited to, citation issuance/enforcement handhelds, LPR, and mobile payment.

17.2 The current required integrations include:

17.2.1 Enforcement – IPS Group, Inc

17.2.2 LPR – Genetec (integrator?)

17.2.3 Mobile payment - TBD

17.3 Contractor shall be able to work with outside Contractors to perform data migration, if required by the City.

17.4 Contractor will review and comply with the additional data, system and security requirement in Section/Attachment X.

18 Installation (Option 1 -Contractor)

The following is a list of requirements for installation of the Pay Station:

18.1 Contractor will be responsible for pay station installation at specific locations identified by the City. The Contractor's price will include all costs associated with the activity.

18.2 The City or Contractor will be responsible for a storage location within the City limits for pay station delivery and provide reasonable access to the facility Monday through Friday during business hours.

18.3 The City or Contractor will be responsible for removing an existing pay station or meter infrastructure prior the installation by the Contractor.

18.4 Contractor will provide one in person, onsite walk-through where the Contractor's Project Manager and a City representative will review each installation site. The Contractor will issue a report listing the details (address, GPS coordinates, etc.) and status of each location with two weeks of the site visit for City review and approval.

18.5 Contractor will provide all personnel, tools, equipment, unpacking, assembly, programming, or otherwise as required for installation.

18.6 Contractor will provide pay station transportation between the storage facility and the installation locations.

18.7 The City or Contractor will be responsible for preparing each site for installation prior to Contractor kicking off installation, including any concrete remediation.

18.8 The Contractor will provide no less than two technicians working together to complete the installations at a rate of no less than 5 to 10 pay stations per day.

18.9 Upon completion, Contractor staff will thoroughly test each pay station and provide documentation of the successful installation and confirmation that each pay station is operating to specification. Review and confirmation of each report by the City will result in acceptance of said pay station.

19 Installation (Option 2 - City)

The following is a list of requirements for installation of the Pay Station:

19.1 The City will be responsible for pay station installation.

19.2 Contractor will provide a one day in person, onsite installation training session for the City or its designee.

19.3 Contractor will provide detailed instructions for pay station installation. Instructions

will include all necessary steps for installation, assembly, and set up as well as required tools and equipment.

19.4 Contractor will provide remote (phone, video conference) support during installation period.

20 Other Services (Optional)

The Contractors should consider the following requirements and address them in their proposal as desired:

20.1 With the implementation of new paid parking technology public awareness and education is important to any successful parking management program. Contractor shall describe any public outreach/education campaign support that will be included with your solution at no additional cost to the City. Contractor shall provide examples of prior successful implementations, including sample images, emphasizing similar installations and education introducing pay by plate pay stations and new paid parking policies.

20.2 The City may consider an option for a merchant validation program to enhance the motorist experience. Contractor shall describe how the proposed parking technology solution would support a merchant validation program and identify any equipment required and additional costs or fees.

20.3 The City is interested in innovation and value-added services. Contractors should describe any enhanced services and features that are available to the City currently or in the near future and how these services and features would be integrated to ensure motorist convenience. All associated pricing for any proposed or suggested feature must be identified.

21 Liquidated Damages

The following are the proposed liquidated damages that would be incorporated into any final agreement and should be considered in Contractor's proposal. While it is not the intention of the City to seek a punitive relationship, we are seeking an integrated solution that performs to the standards described throughout the Contractor's proposal and in line with the City's requirements.

Both parties will agree that the annual liquidated damages shall be limited to the amount paid or due to Contractor by the City during a one-year period except in the initial 12-month period of this Agreement, where liquidated damages shall be limited to 30% of the amount paid or due to Contractor by the City during the initial 12-month period of this Agreement. The Contractor agrees to pay (or provide invoice credit) these amounts to the City as set forth:

- **PSMS or Bank Card Processing Failure:** Any failure of the PSMS or bank card

processing solution provided by the Contractor that prevents the processing of bank cards and the collection of related revenue shall result in damages of $500 per 24 hour period. City shall provide Contractor with 12-hour notice to respond and repair the failure prior to being entitled to this liquidated damage.

- **Systemic Hardware Issue:** Any hardware failure that affects 25% (or 40% if less than 10 pay station are installed) or more of the City's pay station fleet at one time which causes in the inability to collect any one type of monies shall result in damages of $25 per 24-hour period per pay station. Upon City notice to the Contractor, Contractor will have 10 calendar days to correct the hardware failure, up to and including specific component replacement, prior to the City being entitled to this liquidated damage. City will provide reasonable access and support to the Contractor in correcting the failure.
- **Systemic Software Issue:** Any software failure that affects 25% (or 40% if less than 10 pay station are installed) or more of the City's pay station fleet at one time which causes in the inability to collect any one type of monies or charge motorists the correct amount shall result in damages of $25 per 24-hour period per pay station. Upon City notice to the Contractor, Contractor will have one business day (24 hours) to correct the failure prior to City being entitled to this liquidated damage. City will provide reasonable access and support to the Contractor in correcting the failure.
- **PCI Data Security Failure:** Failure of Contractor to maintain Payment Card Industry ("PCI") Data Security Standard Certification, shall result in damages of $10,000 on the twenty-eight (28th) calendar day following non-compliance ("first assessment"). The twenty-eighth (28th) calendar day following the first assessment and every twenty-eight (28) calendar day thereafter shall constitute a "subsequent assessment". On each additional twenty-eighth (28th) calendar day following the first assessment and any subsequent assessments, the City shall be entitled to liquidated damages of $25,000 until the failure is cured. Damages during subsequent assessments shall be prorated by day.
- **Cash Reconciliation Accuracy:** Any failure of the Contractor's solution that results in a 3% or greater variation between the actual collected funds versus the pay station/PSMS reported funds shall result in damages of $25 per 24-hour period per pay station. Upon City notice to the Contractor, Contractor will have seven business days to correct the failure, if determined that Contractor is at fault, prior to City being entitled to this liquidated damage. City will provide reasonable access and support to the Contractor in identifying and correcting the failure.
- **RMA Fulfillment:** Any failure to process and ship an RMA or provide notification to the City with reasonable explanation for delay, within 14 days of the receipt of the shipment from the City shall results in damages of $100 per day until the return RMA shipment is received by the City. The first occurrence of this failure will result in a written warning by the City with no damages applied. Any subsequent failures will incur this liquated damage without notice being required by the City.

22 Submission Requirements

ATTACHMENT 2

This section may be incorporated into the City's RFP documents or handled separately.

The Submission Requirements outline the guidelines governing the format and content of the proposal as well as the approach to be used in its development and presentation. The intent of the RFP is to encourage responses that clearly communicate the Proposer's understanding of the City's requirements and its approach to successfully provide the products and/or services on time and within budget. Only information which is essential to an understanding and evaluation of the proposal should be submitted. Items not specifically and explicitly related to the RFP and proposal, e.g. brochures, marketing material, etc. will not be considered in the evaluation.

All proposals shall address the following items in the order listed below in a maximum of thirty 8.5" x 11" pages. City required forms, pricing forms and the Technical Compliance Matrix will be considered outside this maximum.

22.1 Cover Letter

22.1.1 Provide a letter introducing the Contractor and the solution.

22.1.2 Include Contractor's designated contact (name, title, phone, email).

22.1.3 Include acknowledgement of any addenda to the original RFP submitted by the City.

22.1.4 Includes acknowledgement that the Contractors offer is valid for at least 180 days from submission.

22.1.5 Identity the person(s) (name, title, phone, email) authorized to bind Contractor into any awarded contract and the terms of proposal.

22.2 Company Experience and References.

22.2.1 Provide an overview of the company including any United State of America and global operations.

22.2.2 Provide a list of three active customers located in the State of California listing the client, services provided, and quantity of hardware (minimum 15).

22.2.3 Provide a list of three reference located in the United States of America listing the client, contact information (phone/email), services provided and quantity of hardware.

22.2.4 If the Proposer has had an Agreement terminated for default during the past three years, this fact should be disclosed along with the Proposer's position on the matter(s). If the Proposer has experienced no such terminations for default in the past, then the Proposer should indicate as such.

22.2.5 Describe Contractor's experience and methodology regarding integrations with parking and mobility related third parties.

22.3 Pay Station Solution

22.3.1 Provide an overview of the pay station hardware being offered by Contractor.

22.3.2 Describe the options for use of refurbished (like new) parts. Contractor must clearly state which part(s) may optionally be selected by the City and any related cost savings.

22.4 Wireless Two-Way Communication

22.4.1 Describe the communication infrastructure, security, and capabilities.

22.4.2 Explain options for connectivity besides cellular data in their proposal.

22.4.3 Describe how the solution will handle offline data in their proposal.

22.5 Pay Station Display & User Interface

22.5.1 Describe the graphic and/or touch screen display.

22.5.2 Describe how a motorist will interact with the pay station utilizing buttons and screens, as well as any visual, audible, or tactile indication that a button has been pressed, as feedback to the motorist

22.5.3 Describe how the display and any physical buttons shall be operated after dark and in the event of sun glare.

22.5.4 Describe the process and features that enable special messaging, i.e., holiday, upcoming lot maintenance, and special event messages, which can be downloaded remotely and how messaging will be shared with the MPP.

22.6 Payments

22.6.1 Describe how a pay station will allow the motorist to pay for a parking transaction at any pay station within a City defined zone.

22.6.2 Describe how a pay station shall be programmed to accept extended payment within applicable City policy requirements.

22.6.3 Describe the process and any additional fees associated with motorist payment extensions may be integrated with the City's mobile payment provider or other payment methods, if applicable.

22.6.4 Describe motorist payment receipt options.

22.6.5 Describe in detail the step-by-step process of Contractor's credit card acceptance

procedure from the time a motorist inserts his/her card to the time the money is deposited in the City account.

22.6.6 Include the name of Contractors gateway processor (if using a third party) and the name of the gateway software (if applicable).

22.6.7 Describe the Subcontractors' PCI compliance and the process for staying compliant.

22.6.8 List all available merchant processor integrations available to the City.

22.6.9 Describe any alternative or future payment options, the associated costs or any additional fees.

22.7 Pay Station Power

22.7.1 Describe the entire power system of the pay station.

22.7.2 Describe any alternatives power options different from battery and solar power.

22.8 Pay Station Security

22.8.1 Contractors shall describe the locking system and any manual override process in case of power failure or electronic lock malfunction.

22.8.2 Describe any programmable access parameters including restrictions for maintenance and collections.

22.9 Maintenance

22.9.1 Describe the pay station maintenance features and functions, including the list of components that may be replaced within 10 minutes of arrival at the pay station.

22.10 Pay Station Management System

22.10.1 Provide an overview of the PMS solution being offered by the Contractor including a system architecture diagram.

22.10.2 Provide details on the cyber security and data protection policies and practices.

22.10.3 Describe all available rate structures, how rate schedules are built and how the City can self-manage their rates schedules.

22.10.4 Describe the reporting package available to the City.

22.11 Warranty & Contract Support

22.11.1 Describe the hardware and system warranty, as well as any extended warranty options.

22.11.2 Describe any exceptions to the Contractor's hardware warranty terms.

22.11.3 Describe Contractor's support services including customer support availability on-line help features, Help Desk, and optional on-site support.

22.12 Project Management

22.12.1 Describe Contractor's project management team and process for implementation of their proposal.

22.12.2 Provide resumes for the team that will be assigned to the City.

22.12.3 Describe the scope of work and contractual relationship with any subcontractors being included as part of the Contractor's proposal.

22.12.4 Describe Contractor's hardware and software testing process, especially in regard to third-party integrations.

22.12.5 Provide a project schedule from contract execution to installation. Include an accurate timeline for pay station delivery.

22.13 Training

22.13.1 Describe training methodology.

22.13.2 Describe how upgrades to the PSMS or other systems will be distributed, communicated, and implemented (e.g., training of appropriate staff) during the term of the contract.

22.14 Other Services (Optional)

22.14.1 Describe how the Contractor will address any of the optional listed services.

23 Technical Compliance Matrix

The Contractor will complete the Technical Compliance Matrix (TCM) and submit along with their proposal.

TBD

24 Cost Proposal

TBD

ATTACHMENT 2

ATTACHMENT 3

Notice Requesting Proposals for Mobile Parking Payment Application

The City of San Luis Obispo is requesting proposals to establish a single, direct vendor agreement for their mobile parking payment (MPP) system.

All firms interested in receiving further correspondence regarding this Request for Proposals (RFP) will be required to complete a free registration using BidSync (https://www.bidsync.com/bidsync-app-web/vendor/register/Login.xhtml). All proposals must be received via BidSync by the Department of Finance at or before **August 28, 2024, at 3pm** when they will be opened electronically via BidSync on the proposal end date and time.

The preferred method for bid submission is electronic via BidSync. However, if you wish to submit a paper copy, please submit it in a sealed envelope to the Department of Finance, City of San Luis Obispo, 990 Palm Street, San Luis Obispo, CA, 93401.

Project packages and additional information may be obtained at the City's BidSync website at www.BidSync.com. Please contact **Donna King, Parking Program Manager at dking@slocity.org or 805-781-7234** with any questions.

For technical help with BidSync please contact BidSync tech support at 800-990-9339.

The City of San Luis Obispo is committed to including disabled persons in all of our services, programs and activities. Telecommunications Device for the Deaf (805) 781-7410.

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A. INTRODUCTION

The City of San Luis Obispo (SLO) ("City") is intending to establish a single, direct vendor agreement for their mobile parking payment (MPP) system based on direction of the City Council and supported by extensive community feedback indicating that the current multi-vendor solution has created confusion and frustration, as well as technology issues on the City's administrative side. The City is seeking an MPP system that is simple, convenient, and easy to use that can support the City's current and future needs. Considering the recent changes to the City's parking program, an extensive marketing campaign, supported by the selected MPP, will be crucial to ensure that the community is aware of the operational changes being made and to maintain transparency.

B. SCOPE OF WORK

The City is soliciting proposals from MPP application vendors ("Vendor") to provide proposals for the following services.

I. Marketing:

The City plans on launching an extensive marketing campaign to support a smooth transition to the single-vendor system. Vendor shall be responsible for developing a comprehensive Marketing Plan including advertising, signage, community engagement, and the transition of users of the previous MPP providers. All marketing assets will be subject to City approval and may include coordination with Downtown associations. Vendor shall describe any advantageous marketing features that will be provided to the City. Please describe successful transitions of existing customer information from other MPP vendors. In addition, propose the timeline associated with all proposed deliverables and features.

II. Signage:

Vendor shall propose an extensive signage plan that features clear, concise signage that is easy to read and predictable throughout the Downtown area. Signage should highlight zone #'s, codes, toll free phone number, and all other pertinent information. Signage specifications will be subject to the City's approval and must conform to appropriate design standards and signage guidelines. The Vendor will be required to provide, at their cost, sufficient new signs and decals as determined by the City. At a minimum, this will include decals for each single/dual space meter and pay station and upright signage by block face.

III. Promotional Opportunities:

The City intends on utilizing one-time use codes to offer free or discounted parking from time to time as part of their promotional campaign to welcome residents and visitors back to Downtown SLO. Vendor shall describe the ability to push and promote one-time use codes to the existing userbase and support the marketing efforts of the City with marketing materials, like flyers and unique promotional opportunities throughout the term of the vendor agreement. Vendor must be able to manage one-time use codes in-app and eliminate the opportunity for repeat use of one-time use codes by individual users.

IV. Dashboard

Vendor shall provide a customizable dashboard that integrates with City paid parking technology providers including IPS Group and any future paid parking technology providers. The City is seeking a 'one-stop' reporting location for all data associated with the parking operation including but not

limited to revenues, occupancy, and on and off street performance. Vendor shall also be able to support the potential integration of on-street and off-street parking data into one centralized reporting solution.

V. Validation system:

Vendor must be able to support a validation program, that could include special events and merchant participation throughout the City. Vendor must be able to support business-managed and/or City-managed validations.

VI. Customer Support:

Vendor shall provide comprehensive customer support to assist customers with registration and initial use of the MPP application, addressing and correcting errors with customer parking transactions, and transaction or payment disputes.

VII. City Support:

The City is seeking a vendor that will maintain consistent responsiveness throughout the entire term length to provide support on any administrative, operational, or technological needs. Vendor shall maintain a single point of contact for the City. Response time has been a challenge within the previous scope, explain your commitment and guarantees that you will contractually commit to regarding response time to the City.

VIII. Configuration Capabilities

Vendor shall be able to provide the following centralized configuration capabilities:

- Daily max rates: Vendor must be able to demonstrate that a customer can build time throughout their session, such that they can add time throughout their existing session without exceeding the daily max[1] in the same day period[2]. The MPP must use the vehicle license plate to ensure that customers who park in the structure, leave, and return to park do not exceed the daily max rate even with separate transactions.
- Meter feeding: MPP must be able to prevent meter feeding (resetting a parking session in the same day) in excess of the posted time limit. i.e., a customer cannot re-initiate a new parking session in violation of the business rules within the same operating day.

IX. Additional Features

Vendor shall describe any additional customer service features that are included in the services that will be provided to the City upon implementation, like Pay by Text. Responses should be specific and describe additional customer service features that are available upon launch of the selected MPP. Any additional costs associated with these features must be specified.

X. Permit Management System

Vendor shall describe their permit management system that can support a license-plate based parking permit for employee and/or residential permits.

- Permit management system (PMS) must have the ability for authorized users to establish an account to manage their permit account online.
- PMS must allow business owners to manage multiple parking permits from a single account.

[1] Current daily max rate is $8.

[2] The City of San Luis Obispo's operating day is from 3AM to 3AM. The daily rate based on a license plate cannot exceed $8.

- PMS must be flexible in design and allow an array of payment options including monthly, quarterly and annual permit options.
- Vendor must describe the credentialing process to determine how a user is qualified and confirmed for a specific meter type.

XI. Integrations:

The MPP System should be able to support any future integrations with the City sub-systems including but not limited to:

- On street technology (single space meters/ pay stations) – IPS Group
- PARCS (TBD)
- License plate recognition technology – Route 1 - Genetec Freeflow (fixed mount) & mobile
- Citation management systems - IPS Group
- Permit management systems IPS Group

XII. Cost Proposal:

Vendor shall outline all costs associated with the services provided, including transaction fees, payment processing fees, setup fees, and any additional costs including one-time expenses, fees associated with the transition of other vendor customer details, integration costs, and any ongoing fees. See Attachment B for the pricing sheet.

C. PROJECT SCHEDULE

Preliminary Schedule	Tasks
August 28, 2024	• Proposals Due
September 6, 2024	• Vendor Selected
October 1, 2024	• Contract commences

D. GENERAL TERMS AND CONDITIONS

PROPOSAL REQUIREMENTS

1. **Requirement to Meet All Provisions.** Each individual or firm submitting a proposal (bidder) shall meet all the terms, and conditions of the Request for Proposals (RFP) project package. By virtue of its proposal submittal, the bidder acknowledges agreement with and acceptance of all provisions of the RFP specifications.

2. **Proposal Submittal**. Each proposal must be submitted on the form(s) provided in the specifications and accompanied by any other required submittals or supplemental materials. Proposal documents shall be submitted electronically via BidSync. However, if you can't submit electronically in BidSync., please email a copy to the contacts listed in the RFP package, if you can't email it, please send a copy in a sealed envelope to the Department of Finance, City of San Luis Obispo, 990 Palm Street, San Luis Obispo, CA, 93401. To guard against premature opening, the proposal should be clearly labeled with the proposal title, project number, name of bidder, and date and time of proposal opening. No FAX submittals will be accepted.

3. **Insurance Certificate**. Each proposal must include a certificate of insurance showing:

   a. The insurance carrier and its A.M. Best rating.
   b. Scope of coverage and limits.
   c. Deductibles and self-insured retention.

   The purpose of this submittal is to generally assess the adequacy of the bidder's insurance coverage during proposal evaluation; as discussed under paragraph 12 below, endorsements are not required until contract award. The City's insurance requirements are detailed in Section E.

4. **Proposal Quotes and Unit Price Extension**. The extension of unit prices for the quantities indicated and the lump sum prices quoted by the bidder must be entered in figures in the spaces provided on the Proposal Submittal Form(s). Any lump sum bid shall be stated in figures. The Proposal Submittal Form(s) must be totally completed. If the unit price and the total amount stated by any bidder for any item are not in agreement, the unit price alone will be considered as representing the bidder's intention and the proposal total will be corrected to conform to the specified unit price.

5. **Proposal Withdrawal and Opening**. A bidder may withdraw its proposal, without prejudice prior to the time specified for the proposal opening, by submitting a written request to the Director of Finance for its withdrawal, in which event the proposal will be returned to the bidder unopened. No proposal received after the time specified or at any place other than that stated in the "Notice Inviting Bids/Requesting Proposals" will be considered. All proposals will be opened and declared publicly. Bidders or their representatives are invited to be present at the opening of the proposals.

6. **Submittal of One Proposal Only**. No individual or business entity of any kind shall be allowed to make or file, or to be interested as the primary submitter in more than one proposal, except an alternative proposal when specifically requested; however, an individual or business entity that has submitted a sub-proposal to a bidder submitting a proposal, or who has quoted prices on materials to such bidder, is not thereby disqualified from submitting a sub-proposal or from quoting prices to other bidders submitting proposals.

7. **Communications.** All timely requests for information submitted in writing will receive a written response from the City. Telephone communications with City staff are not encouraged but will be permitted. However, any such oral communication shall not be binding on the City.

CONTRACT AWARD AND EXECUTION

8. **Proposal Retention and Award**. The City reserves the right to retain all proposals for a period of 60 days for examination and comparison. The City also reserves the right to waive non-substantial irregularities in any proposal, to reject any or all proposals, to reject or delete one part of a proposal and accept the other, except to the extent that proposals are qualified by specific limitations. See the "special terms and conditions" in Section C of these specifications for proposal evaluation and contract award criteria.

9. **Competency and Responsibility of Bidder.** The City reserves full discretion to determine the competence and responsibility, professionally and/or financially, of bidders. Bidders will provide, in a timely manner, all information that the City deems necessary to make such a decision.

10. **Contract Requirement.** The bidder to whom award is made (Vendor) shall execute a written contract with the City within ten (10) calendar days after notice of the award. The contract shall be made in the form adopted by the City and incorporated in these specifications.

CONTRACT PERFORMANCE

11. The City's contract terms and conditions that Vendor will be expected to execute and be bound by are attached hereto as Attachment A.

E. SPECIAL TERMS AND CONDITIONS

1. **Contract Award.** Subject to the reservations set forth in Paragraph 9 of Section D (General Terms and Conditions) of these specifications, the contract will be awarded to the lowest responsible, responsive proposer.

2. **Sales Tax Reimbursement.**
For sales occurring within the City of San Luis Obispo, the City receives sales tax revenues. Therefore, for bids from retail firms located in the City at the time of proposal closing for which sales tax is allocated to the City, 1% of the taxable amount of the bid will be deducted from the proposal by the City in calculating and determining the lowest responsible, responsive proposer.

3. **Labor Actions.**
In the event that the successful proposer is experiencing a labor action at the time of contract award (or if its suppliers or subcontractors are experiencing such a labor action), the City reserves the right to declare said proposer is no longer the lowest responsible, responsive proposer and to accept the next acceptable low proposal from a proposer that is not experiencing a labor action, and to declare it to be the lowest responsible, responsive proposer.

4. **Failure to Accept Contract.**
The following will occur if the proposer to whom the award is made (Vendor) fails to enter into the contract: the award will be annulled; any bid security will be forfeited in accordance with the special terms and conditions if a proposer's bond or security is required; and an award may be made to the next lowest responsible, responsive proposer who shall fulfill every stipulation as if it were the party to whom the first award was made.

5. **Contract Term.**
The services identified in this specification will be used by the City for 3 years. The prices quoted for these items must be valid for the entire period indicated above unless otherwise conditioned by the proposer in its proposal.

6. **Contract Extension.**
The term of the contract may be extended by mutual consent for an additional one-year, and annually thereafter, for a total of five years.

7. **Supplemental Purchases**
Supplemental purchases may be made from the successful proposer during the contract term in addition to the items listed in the Detail Proposal Submittal Form. For these supplemental purchases, the proposer shall not offer prices to the City in excess of the amounts offered to other similar customers for the same item. If the proposer is willing to offer the City a standard discount on all supplemental purchases from its generally prevailing or published price structure during the contract term, this offer and the amount of discount on a percentage basis should be provided with the proposal submittal.

8. **Contractor Invoices.**
The Contractor may deliver either a monthly invoice to the City with attached copies of detail invoices as supporting detail, or in one lump-sum upon completion.

9 **Non-Exclusive Contract.** The City reserves the right to purchase the items listed in the Detail Proposal Submittal Form, as well as any supplemental items, from other vendors during the contract term.

10. **Unrestrictive Brand Names**. Any manufacturer's names, trade names, brand names or catalog numbers used in the specifications are for the purpose of describing and establishing general quality levels. Such references are not intended to be restrictive. Proposals will be considered for any brand that meets or exceeds the quality of the specifications given for any item. In the event an alternate brand name is proposed, supplemental documentation shall be provided demonstrating that the alternate brand name meets or exceeds the requirements specified herein. The burden of proof as to the suitability of any proposed alternatives is upon the proposer, and the City shall be the sole judge in making this determination.

11. **Delivery.** Prices quoted for all supplies or equipment to be provided under the terms and conditions of this RFP package shall include delivery charges, to be delivered F.O.B. San Luis Obispo by the successful proposer and received by the City within 90 days after authorization to proceed by the City.

12. **Start and Completion of Work.** Work on this project shall begin immediately after contract execution and shall be completed within 90 calendar days thereafter, unless otherwise negotiated with City by mutual agreement.

13. **Submittal of References.** Each proposer shall submit a statement of qualifications and references on the form provided in the RFP package.

14. **Statement of Contract Disqualifications.** Each proposer shall submit a statement regarding any past governmental agency bidding or contract disqualifications on the form provided in the RFP package.

PROPOSAL CONTENT

1. **Proposal Content**. Your proposal must include the following information:

Submittal Forms

a. Proposal submittal summary.
b. Certificate of insurance.
c. References from at least three firms for whom you have provided similar services.
d. Pricing Sheet per Attachment B.

Qualifications

e. Experience of your firm and those of sub-consultants in performing work and projects relevant to the Scope of Services outlined and described in the request.
f. Experience must include work performed in the county of San Luis Obispo or northern Santa Barbara County. This demonstrates the vendors existing familiarity by the community.
g. Resumes of the individuals who would be assigned to this project, including any sub-consultants, with their corollary experience highlighted and specific roles in this project clearly described.
h. Standard hourly billing rates for the assigned staff, including any sub-consultants.
i. Statement and explanation of any instances where your firm or sub-consultant has been removed from a project or disqualified from proposing on a project.

Work Program

j. Detailed description of your approach to completing the work.
k. Detailed schedule by task and sub-task for completing the work.
l. Estimated hours for your staff in performing each phase and task of the work, including sub-consultants, so we can clearly see who will be doing what work, and how much time it will take.
m. Detailed budget by task and sub-task for completing the work.
n. Services or data to be provided by the City.
o. Services and deliverables provided by the Consultant(s).
p. Any other information that would assist us in making this contract award decision.
q. Description of assumptions critical to development of the response which may impact cost or scope.

Requested Changes to Terms and Conditions

r. ***The City desires to begin work soon after selecting the preferred Vendor and expects the Vendor to execute the City's contract and all of the terms therein, as set forth in Attachment A.*** To expedite the contracting process, each submittal shall include requested redlined changes to terms and conditions, if necessary. Please be advised that Vendor requested changes to the City's terms and conditions will be considered by City staff when scoring and determining the competency and responsibility of the proposer.

Proposal Length

s. Proposal length should only be as long as required to be responsive to the RFP, including attachments and supplemental materials.

2. **Proposal Evaluation and Selection**. Proposals will be evaluated by a review committee and evaluated on the following criteria:

a. Understanding of the work required by the City.
b. Quality, clarity, and responsiveness of the proposal.
c. Demonstrated competence and professional qualifications necessary for successfully performing the work required by the City.
d. Recent team experience in successfully performing similar services.
e. Recent vendor experience performing similar services in the county of San Luis Obispo or north Santa Barbara county.
f. Creativity of the proposed approach in completing the work.
g. Value
h. Writing skills.
i. References.
j. Background and experience of the specific individuals managing and assigned to this project.
k. Information about how your company mitigates the environmental impact of its services, such as greenhouse gas emissions, amount of waste generated, water and energy use, or other areas related to your products and services.

As reflected above, contract award will not be based solely on price, but on a combination of factors as determined to be in the best interest of the City. After evaluating the proposals and discussing them further with the finalists or the tentatively selected Vendor, the City reserves the right to further negotiate the proposed work and/or method and amount of compensation.

3. **Proposal Review and Award Schedule.** The following is an outline of the anticipated schedule for proposal review and contract award:

a.	Issue RFP	August 9, 2024
b.	Receive proposals	August 28, 2024
c.	Complete proposal evaluations	September 6, 2024
d.	Execute contract	September 20, 2024
e.	Start work	October 1, 2024

4. **Ownership of Materials.** All original drawings, plan documents and other materials prepared by or in possession of the Vendor as part of the work or services under these specifications shall become the permanent property of the City and shall be delivered to the City upon demand.

5. **Release of Reports and Information.** Any reports, information, data, or other material given to, prepared by or assembled by the Vendor as part of the work or services under these specifications shall be the property of the City and shall not be made available to any individual or organization by the Vendor without the prior written approval of the City.

6. **Copies of Reports and Information.** If the City requests additional copies of reports, drawings, specifications, or any other material in addition to what the Vendor is required to furnish in limited quantities as part of the work or services under these specifications, the Vendor shall provide such additional copies as are requested, and City shall compensate the Vendor for the costs of duplicating of such copies at the Vendor's direct expense.

7. **Required Deliverable Products.** The Vendor will be required to provide:

   a. One electronic submission - digital-ready original .pdf of all final documents. If you wish to file a paper copy, please submit in sealed envelope to the address provided in the RFP.

   b. Corresponding computer files compatible with the following programs whenever possible unless otherwise directed by the project manager:

Word Processing:	MS Word
Spreadsheets:	MS Excel
Desktop Publishing:	InDesign
Virtual Models:	Sketch Up
Digital Maps:	Geodatabase shape files in State Plan Coordinate System as specified by City GIS staff

   c. City staff will review any documents or materials provided by the Vendor and, where necessary, the Vendor will be required to respond to staff comments and make such changes as deemed appropriate.

8. **Attendance at Meetings and Hearings**. As part of the work scope and included in the contract price is attendance by the Vendor at public meetings to present and discuss its findings and recommendations. Vendor shall attend as many "working" meetings with staff as necessary in performing work-scope tasks.

9. **Accuracy of Specifications**. The specifications for this project are believed by the City to be accurate and to contain no affirmative misrepresentation or any concealment of fact. Bidders are cautioned to undertake an independent analysis of any test results in the specifications, as City does not guaranty the accuracy of its interpretation of test results contained in the specifications package. In preparing its proposal, the bidder and all subcontractors named in its proposal shall bear sole responsibility for proposal preparation errors resulting from any misstatements or omissions in the plans and specifications that could easily have been ascertained by examining either the project site or accurate test data in the City's possession. Although the effect of ambiguities or defects in the plans and specifications will be as determined by law, any patent ambiguity or defect shall give rise to a duty of bidder to inquire prior to proposal submittal. Failure to so inquire shall cause any such ambiguity or defect to be construed against the bidder. An ambiguity or defect shall be considered patent if it is of such a nature that the bidder, assuming reasonable skill, ability and diligence on its part, knew or should have known of the existence of the ambiguity or defect. Furthermore, failure of the bidder or subcontractors to notify City in writing of specification or plan defects or ambiguities prior to proposal submittal shall waive any right to assert said defects or ambiguities subsequent to submittal of the proposal.

To the extent that these specifications constitute performance specifications, the City shall not be liable for costs incurred by the successful bidder to achieve the project's objective or standard beyond the amounts provided there for in the proposal.

In the event that, after awarding the contract, any dispute arises as a result of any actual or alleged ambiguity or defect in the plans and/or specifications, or any other matter whatsoever, Vendor shall immediately notify the City in writing, and the Vendor and all subcontractors shall continue to perform, irrespective of whether or not the ambiguity or defect is major, material, minor or trivial, and irrespective of whether or not a change order, time extension, or additional compensation has been granted by City. Failure to provide the hereinbefore described written notice within one (1) working day of Vendor's becoming aware of the facts giving rise to the dispute shall constitute a waiver of the right to assert the causative role of the defect or ambiguity in the plans or specifications concerning the dispute.

G. PROPOSAL SUBMITTAL FORM

The undersigned declares that she or he:

- ■ Has carefully examined this RFP, which is hereby made a part of this proposal.
- ■ Is thoroughly familiar with its contents.
- ■ Is authorized to represent the proposing firm.
- ■ Agrees to perform the work as set forth in this proposal.

□ Certificate of insurance attached; insurance company's A.M. Best rating: _____.

Firm Name and Address

Contact *Phone*

Signature of Authorized Representative

Date

REFERENCES

Number of years engaged in providing the services included within the scope of the specifications under the present business name:_____.

Describe fully the last three contracts performed by your firm that demonstrate your ability to provide the services included with the scope of the specifications. Attach additional pages if required. The City reserves the right to contact each of the references listed for additional information regarding your firm's qualifications.

Reference No. 1:

Agency Name	
Contact Name	
Telephone & Email	
Street Address	
City, State, Zip Code	
Description of services provided including contract amount, when provided and project outcome	

Reference No. 2:

Agency Name	
Contact Name	
Telephone & Email	
Street Address	
City, State, Zip Code	
Description of services provided including contract amount, when provided and project outcome	

Reference No. 3

Agency Name	
Contact Name	
Telephone & Email	
Street Address	
City, State, Zip Code	
Description of services provided including contract amount, when provided and project outcome	

STATEMENT OF PAST CONTRACT DISQUALIFICATIONS

The proposer shall state whether it or any of its officers or employees who have a proprietary interest in it, has ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of the violation of law, a safety regulation, or for any other reason, including but not limited to financial difficulties, project delays, or disputes regarding work or product quality, and if so to explain the circumstances.

- ***Do you have any disqualification as described in the above paragraph to declare?***

  □ Yes □ No

- ***If yes, explain the circumstances.***

Executed on _____ at _____ under penalty of perjury of the laws of the State of California, that the foregoing is true and correct.

_____
Signature of Authorized Proposer Representative

CITY OF SAN LUIS OBISPO
AGREEMENT FOR PURCHASES OF SERVICES

This Agreement is made and entered into in the City of San Luis Obispo on _____ , by and between the City of San Luis Obispo, a municipal corporation, hereinafter referred to as City, and _____ , hereinafter referred to as Contractor.

W I T N E S S E T H:

WHEREAS, on [date], City requested proposals for Mobile Parking Payment Application Vendors,

WHEREAS, [_____] is qualified to perform this type of service and has submitted a proposal to do so which has been accepted by City.

NOW THEREFORE, in consideration of their mutual promises, obligations and covenants hereinafter contained, the parties hereto agree as follows:

NOW THEREFORE, in consideration of their mutual promises, obligations and covenants hereinafter contained, the parties hereto agree as follows:

1. **TERM**. The term of this Agreement shall be from the date this Agreement is made and entered, as first written above, for three (3) years, or upon acceptance and completion of said Services, whichever occurs sooner. The term of the contract may be extended by mutual consent for an additional one-year, and annually thereafter, for a total of five (5) years.
2. **INCORPORATION BY REFERENCE.** The "Notice Requesting Proposals for Mobile Parking Payment Application" and Consultant's proposal dated [date] are hereby incorporated in and made a part of this Agreement, attached as Exhibit A. The City's standard terms and conditions are attached as Exhibit B. The City's insurance requirements are hereby incorporated in and made part of this Agreement, attached as Exhibit C. To the extent that there are any conflicts between the Consultant's fees and scope of work and the City's terms and conditions as stated herein, the City's terms and conditions shall prevail unless specifically agreed otherwise in writing signed by both Parties.
3. **CITY'S OBLIGATIONS**. For providing services as specified in this Agreement, and upon receipt of an invoice, City will pay and Contractor shall receive therefor compensation of [_____].
4. **CONSULTANT'S/CONTRACTOR'S OBLIGATIONS**. For and in consideration of the payments and agreements hereinbefore mentioned to be made and performed by City, Contractor agrees with City to do everything required by this Agreement and the said specifications set forth in Exhibit A.
5. **AMENDMENTS**. Any amendment, modification or variation from the terms of this Agreement shall be in writing and shall be effective only upon approval by the City Manager.

6. **COMPLETE AGREEMENT**. This written Agreement, including all writings specifically incorporated herein by reference, shall constitute the complete agreement between the parties hereto. No oral agreement, understanding or representation not reduced to writing and specifically incorporated herein shall be of any force or effect, nor shall any such oral agreement, understanding or representation be binding upon the parties hereto.
7. **NOTICE**. All written notices to the parties hereto shall be sent by United States mail, postage prepaid by registered or certified mail addressed as follows:

City

City of San Luis Obispo
990 Palm Street
San Luis Obispo, CA 93401
Attn: [_____]

Consultant

8. **AUTHORITY TO EXECUTE AGREEMENT**. Both City and Contractor do covenant that everyone executing this agreement on behalf of each party is a person duly authorized and empowered to execute Agreements for such party.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed the day and year first above written.

CITY OF SAN LUIS OBISPO:

By:_____
City Manager

APPROVED AS TO FORM:

_____
City Attorney

CONSULTANT:

By: _____
Name of CAO / President
Its: CAO / President

EXHIBIT A

CONTRACTOR'S PROPOSAL & CITY RFP

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EXHIBIT B

GENERAL TERMS AND CONDITIONS

1. **Business License & Tax.** The Contractor must have a valid City of San Luis Obispo business license & tax certificate before execution of the contract. Additional information regarding the City's business tax program may be obtained by calling (805) 781-7134.

2. **Ability to Perform.** The Contractor warrants that it possesses, or has arranged through subcontracts, all capital and other equipment, labor, materials, and licenses necessary to carry out and complete the work hereunder in compliance with all federal, state, county, city, and special district laws, ordinances, and regulations.

3. **Laws to be Observed.** The Contractor shall keep itself fully informed of and shall observe and comply with all applicable state and federal laws and county and City of San Luis Obispo ordinances, regulations and adopted codes during its performance of the work.

4. **Payment of Taxes.** The contract prices shall include full compensation for all taxes that the Contractor is required to pay.

5. **Permits and Licenses.** The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary.

6. **Safety Provisions.** The Contractor shall conform to the rules and regulations pertaining to safety established by OSHA and the California Division of Industrial Safety.

7. **Public and Employee Safety.** Whenever the Contractor's operations create a condition hazardous to the public or City employees, it shall, at its expense and without cost to the City, furnish, erect and maintain such fences, temporary railings, barricades, lights, signs and other devices and take such other protective measures as are necessary to prevent accidents or damage or injury to the public and employees.

8. **Preservation of City Property.** The Contractor shall provide and install suitable safeguards, approved by the City, to protect City property from injury or damage. If City property is injured or damaged resulting from the Contractor's operations, it shall be replaced or restored at the Contractor's expense. The facilities shall be replaced or restored to a condition as good as when the Contractor began work.

9. **Immigration Act of 1986.** The Contractor warrants on behalf of itself and all

subcontractors engaged for the performance of this work that only persons authorized to work in the United State pursuant to the Immigration Reform and Control Act of 1986 and other applicable laws shall be employed in the performance of the work hereunder.

10. **Non-Discrimination.** In the performance of this work, the Contractor agrees that it will not engage in, nor permit such subcontractors as it may employ, to engage in discrimination in employment of persons because of age, race, color, sex, national origin or ancestry, sexual orientation, or religion of such persons.

11. **Work Delays.** Should the Contractor be obstructed or delayed in the work required to be done hereunder by changes in the work or by any default, act, or omission of the City, or by strikes, fire, earthquake, or any other Act of God, or by the inability to obtain materials, equipment, or labor due to federal government restrictions arising out of defense or war programs, then the time of completion may, at the City's sole option, be extended for such periods as may be agreed upon by the City and the Contractor. In the event that there is insufficient time to grant such extensions prior to the completion date of the contract, the City may, at the time of acceptance of the work, waive liquidated damages that may have accrued for failure to complete on time, due to any of the above, after hearing evidence as to the reasons for such delay, and making a finding as to the causes of same.

12. **Payment Terms.** The City's payment terms are 30 days from the receipt of an original invoice and acceptance by the City of the materials, supplies, equipment, or services provided by the Contractor (Net 30).

13. **Inspection.** The Contractor shall furnish City with every reasonable opportunity for City to ascertain that the services of the Contractor are being performed in accordance with the requirements and intentions of this contract. All work done, and all materials furnished, if any, shall be subject to the City's inspection and approval. The inspection of such work shall not relieve Contractor of any of its obligations to fulfill its contract requirements.

14. **Audit.** The City shall have the option of inspecting and/or auditing all records and other written materials used by Contractor in preparing its invoices to City as a condition precedent to any payment to Contractor.

15. **Interests of Contractor.** The Contractor covenants that it presently has no interest, and shall not acquire any interest—direct, indirect or otherwise—that would conflict in any manner or degree with the performance of the work hereunder. The Contractor further covenants that, in the performance of this work, no subcontractor or person having such an interest shall be employed. The Contractor certifies that no one who has or will have any financial interest in performing this work is an officer or employee of the City. It is hereby expressly agreed that, in the performance of the work hereunder, the Contractor shall at all times be deemed an independent contractor and not an agent or employee of the City.

16. Hold Harmless and Indemnification.

(a) **Non-design, non-construction Professional Services**: To the fullest extent permitted by

law (including, but not limited to California Civil Code Sections 2782 and 2782.8), Consultant shall indemnify, defend, and hold harmless the City, and its elected officials, officers, employees, volunteers, and agents ("City Indemnitees"), from and against any and all causes of action, claims, liabilities, obligations, judgments, or damages, including reasonable legal counsels' fees and costs of litigation ("claims"), arising out of the Consultant's performance or Consultant's failure to perform its obligations under this Agreement or out of the operations conducted by Consultant, including the City's active or passive negligence, except for such loss or damage arising from the sole negligence or willful misconduct of the City. In the event the City Indemnitees are made a party to any action, lawsuit, or other adversarial proceeding arising from Consultant's performance of this Agreement, the Consultant shall provide a defense to the City Indemnitees or at the City's option, reimburse the City Indemnitees their costs of defense, including reasonable legal fees, incurred in defense of such claims.

(b) **Non-design, construction Professional Services**: To the extent the Scope of Services involve a "construction contract" as that phrase is used in Civil Code Section 2783, this paragraph shall apply in place of paragraph A. To the fullest extent permitted by law (including, but not limited to California Civil Code Sections 2782 and 2782.8), Consultant shall indemnify, defend, and hold harmless the City, and its elected officials, officers, employees, volunteers, and agents ("City Indemnitees"), from and against any and all causes of action, claims, liabilities, obligations, judgments, or damages, including reasonable legal counsels' fees and costs of litigation ("claims"), arising out of the Consultant's performance or Consultant's failure to perform its obligations under this Agreement or out of the operations conducted by Consultant, except for such loss or damage arising from the active negligence, sole negligence or willful misconduct of the City. In the event the City Indemnitees are made a party to any action, lawsuit, or other adversarial proceeding arising from Consultant's performance of this Agreement, the Consultant shall provide a defense to the City Indemnitees or at the City's option, reimburse the City Indemnitees their costs of defense, including reasonable legal fees, incurred in defense of such claims.

(c) **Design Professional Services**: In the event Consultant is a "design professional", and the Scope of Services require Consultant to provide "design professional services" as those phrases are used in Civil Code Section 2782.8, this paragraph shall apply in place of paragraphs A or B. To the fullest extent permitted by law (including, but not limited to California Civil Code Sections 2782 and 2782.8) Consultant shall indemnify, defend and hold harmless the City and its elected officials, officers, employees, volunteers and agents ("City Indemnitees"), from and against all claims, damages, injuries, losses, and expenses including costs, attorney fees, expert consultant and expert witness fees arising out of, pertaining to or relating to, the negligence, recklessness or willful misconduct of Consultant, except to the extent caused by the sole negligence, active negligence or willful misconduct of the City. Negligence, recklessness or willful misconduct of any subcontractor employed by Consultant shall be conclusively deemed to be the negligence, recklessness or willful misconduct of Consultant unless adequately corrected by Consultant. In the event the City Indemnitees are made a party to any action, lawsuit, or other adversarial proceeding arising from Consultant's performance of this Agreement, the Consultant shall provide a defense to the City Indemnitees or at the City's option, reimburse the City Indemnitees their costs of defense, including reasonable legal fees, incurred in defense of such claims. In no event shall the cost to defend charged to Consultant

under this paragraph exceed Consultant's proportionate percentage of fault. However, notwithstanding the previous sentence, in the event one or more defendants is unable to pay its share of defense costs due to bankruptcy or dissolution of the business, Consultant shall meet and confer with other parties regarding unpaid defense costs.

(d) The review, acceptance or approval of the Consultant's work or work product by any indemnified party shall not affect, relieve or reduce the Consultant's indemnification or defense obligations. This Section survives completion of the services or the termination of this contract. The provisions of this Section are not limited by and do not affect the provisions of this contract relating to insurance.

17. **Contract Assignment.** The Contractor shall not assign, transfer, convey or otherwise dispose of the contract, or its right, title or interest, or its power to execute such a contract to any individual or business entity of any kind without the previous written consent of the City.

18. **Safe Harbor.** Contractor/Consultant's duties and services under this agreement shall not include preparing or assisting the public entity with any portion of the public entity's preparation of a request for proposals, request for qualifications, or any other solicitation regarding a subsequent or additional contract with the public entity. The public entity entering this agreement shall at all times retain responsibility for public contracting, including with respect to any subsequent phase of this project. Contractor/consultant's participation in the planning, discussions, or drawing of project plans or specifications shall be limited to conceptual, preliminary, or initial plans or specifications. Contractor/consultant shall cooperate with the public entity to ensure that all bidders for a subsequent contract on any subsequent phase of this project have access to the same information, including all conceptual, preliminary, or initial plans or specifications prepared by contractor pursuant to this agreement."

19. **Termination for Convenience.** The City may terminate all or part of this Agreement for any or no reason at any time by giving 30 days written notice to Contractor. Should the City terminate this Agreement for convenience, the City shall be liable as follows: (a) for standard or off-the-shelf products, a reasonable restocking charge not to exceed ten (10) percent of the total purchase price; (b) for custom products, the less of a reasonable price for the raw materials, components work in progress and any finished units on hand or the price per unit reflected on this Agreement. For termination of any services pursuant to this Agreement, the City's liability will be the lesser of a reasonable price for the services rendered prior to termination, or the price for the services reflected on this Agreement. Upon termination notice from the City, Contractor must, unless otherwise directed, cease work and follow the City's directions as to work in progress and finished goods.

20. **Termination.** If, during the term of the contract, the City determines that the Contractor is not faithfully abiding by any term or condition contained herein, the City may notify the Contractor in writing of such defect or failure to perform. This notice must give the Contractor a 10 (ten) calendar day notice of time thereafter in which to perform said work or cure the deficiency.

If the Contractor has not performed the work or cured the deficiency within the ten days specified in the notice, such shall constitute a breach of the contract and the City may terminate the contract immediately by written notice to the Contractor to said effect. Thereafter, neither party shall have any further duties, obligations, responsibilities, or rights under the contract except, however, any and all obligations of the Contractor's surety shall remain in full force and effect, and shall not be extinguished, reduced, or in any manner waived by the terminations thereof.

In said event, the Contractor shall be entitled to the reasonable value of its services performed from the beginning date in which the breach occurs up to the day it received the City's Notice of Termination, minus any offset from such payment representing the City's damages from such breach. "Reasonable value" includes fees or charges for goods or services as of the last milestone or task satisfactorily delivered or completed by the Contractor as may be set forth in the Agreement payment schedule; compensation for any other work, services or goods performed or provided by the Contractor shall be based solely on the City's assessment of the value of the work-in-progress in completing the overall work scope.

The City reserves the right to delay any such payment until completion or confirmed abandonment of the project, as may be determined in the City's sole discretion, so as to permit a full and complete accounting of costs. In no event, however, shall the Contractor be entitled to receive in excess of the compensation quoted in its proposal.

EXHIBIT B – INSURANCE

Contractors

Without limiting Contractor's indemnification of City, and prior to commencement of work, Contractor shall obtain, provide, and maintain at its own expense during the term of this Agreement, policies of insurance of the types and amounts described below and in a form that is satisfactory to City.

General liability insurance. Contractor shall maintain commercial general liability insurance with coverage at least as broad as Insurance Services Office form CG 00 01, in an amount not less than $1,000,000 per occurrence, $2,000,000 general aggregate, for bodily injury, personal injury, and property damage. The policy must include contractual liability that has not been amended. Any endorsement restricting standard ISO "insured contract" language will not be accepted.

Automobile liability insurance. Contractor shall maintain automobile insurance at least as broad as Insurance Services Office form CA 00 01 covering bodily injury and property damage for all activities of the Contractor arising out of or in connection with Work to be performed under this Agreement, including coverage for any owned, hired, non-owned, or rented vehicles, in an amount not less than $1,000,000 combined single limit for each accident.

Umbrella or excess liability insurance. [If required to meet higher limits]. Contractor may obtain and maintain an umbrella liability insurance policy with limits that will provide bodily injury, personal injury, and property damage liability coverage, including commercial general liability, automobile liability, and employer's liability. Such policy or policies shall include the following terms and conditions:
• A drop-down feature requiring the policy to respond if any primary insurance that would otherwise have applied proves to be uncollectible in whole or in part for any reason, other than bankruptcy or insolvency of said primary insurer;
• "Pay on behalf of" wording as opposed to "reimbursement";
• Concurrency of effective dates with primary policies.

Excess insurance. Should Contractor obtain and maintain an excess liability policy, such policy shall be excess over commercial general liability, automobile liability, and employer's liability policies. Such policy or policies shall include wording that the excess liability policy follows the terms and conditions of the underlying policies.

Workers' compensation insurance. Contractor shall maintain Workers' Compensation Insurance (Statutory Limits) and Employer's Liability Insurance (with limits of at least $1,000,000). Contractor shall submit to City, along with the certificate of insurance, a Waiver of Subrogation endorsement in favor of City, its officers, agents, employees, and volunteers

Notice of cancellation. Contractor agrees to oblige its insurance agent or broker and insurers to provide the City with a thirty (30) day notice of cancellation (except for nonpayment for which a ten (10) day notice is required) or nonrenewal of coverage for each required coverage. If any of the Contractor's insurers are unwilling to provide such notice, then Contractor shall have the responsibility of notifying the City immediately in the event of Contractor's failure to renew any of the required insurance coverages or insurer's cancellation or non-renewal.

Additional insured status. General liability, automobile liability, and umbrella/excess liability insurance policies shall provide or be endorsed to provide that City and its officers, officials, employees, agents, and volunteers shall be additional insureds under such policies. Prohibition of undisclosed coverage limitations. None of the coverages required herein shall comply with these requirements if they include any limiting endorsement of any kind that has not been first submitted to City and approved of in writing.

Separation of insureds. A severability of interests provision must apply for all additional insureds ensuring that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the insurer's limits of liability. The policy(ies) shall not contain any cross-liability exclusions.

Pass through clause. Contractor agrees to ensure that its subconsultants, subcontractors, and any other party who is brought onto or involved in the project/service by Contractor (hereinafter collectively "subcontractor"), provide the same minimum insurance coverage and endorsements required of Contractor. Contractor agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this section. However, in the event Contractor's subcontractor cannot comply with this requirement, which proof must be submitted to the City, Contractor shall be required to ensure that its subcontractor provide and maintain insurance coverage and endorsements sufficient to the specific risk of exposure involved with subcontractor's scope of work and services, with limits less than required of the Contractor, but in all other terms consistent with the Contractor's requirements under this agreement. This provision does not relieve the Contractor of its contractual obligations under the agreement and/or limit its liability to the amount of insurance coverage provided by its subcontractors. This provision is intended solely to provide Contractor with the ability to utilize a subcontractor who may be otherwise qualified to perform the work or services but may not carry the same insurance limits as required of the Contractor under this agreement given the limited scope of work or services provided by the subcontractor. Contractor agrees that upon request, all agreements with subcontractors, and others engaged in the project, will be submitted to City for review.

City's right to revise specifications. The City reserves the right at any time during the term of the contract to change the amounts and types of insurance required by giving the Contractor ninety (90) days advance written notice of such change. If such change results in substantial additional cost to the Contractor, the City and Contractor may renegotiate Contractor's compensation.

Self-insured retentions. Any self-insured retentions must be declared to and approved by City. City reserves the right to require that self-insured retentions be eliminated, lowered, or replaced by a deductible, or require proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention through confirmation from the underwriter.

Timely notice of claims. Contractor shall give City prompt and timely notice of claims made or suits instituted that arise out of or result from Contractor's performance under this Agreement, and that involve or may involve coverage under any of the required liability policies.

Additional insurance. Contractor shall also procure and maintain, at its own cost and expense, any additional kinds of insurance, which in its own judgment may be necessary for its proper

protection and prosecution of the Work.

Verification of Coverage. Contractor shall furnish the City with a certificate of insurance showing maintenance of the required insurance coverage, as well as endorsements effecting general liability coverage.. All endorsements are to be received and approved by the City before work commences.

EXHIBIT C : PRICING MATRIX

An Excel version of this can be provided upon request, or downloaded directly from BidSync.

City of San Luis Obispo Mobile Parking Payment Systems Solicitation 2024			
Proposer:			
Service	**Description**	**Cost**	**Unit of Measurement (i.e. per transaction, per hour, annually, one-time)**
Transactions & Operations			
Mobile Payment Transaction Fee			
Transaction fee for extending time (if yes, include)			
Merchant Validation			
End User Support			
Client (City) Support			
Hosting Fee			
Security			
Maintenance			
Ongoing Project Management and Calls			
Data Costs			
Reporting Features			
Signage			
Included Ongoing Marketing/Outreach			
Promotional Opportunities			
Permit Management System			
Any Other Costs, include detail			
Implementation & Set-up	**Description**	**Cost**	**Unit of Measurement (i.e. per transaction, per hour, annually, one-time)**
Setup Fee			
Project Launch – Training			
Integration with On street technology			
Integration with PARCS			
Integration with LPR technology			
Integration with Citation management system			
Integration with Permit management system			
Additional Ad Hoc Services as Needed	**Description**	**Cost**	**Unit of Measurement (i.e. per transaction, per hour, annually, one-time)**
Configuration Updates			
Additional On-Site Training (on-site/remote)			
Optional Additional Marketing			
Any Other Costs, include detail			
Other	**Description**	**Cost**	**Unit of Measurement (i.e. per transaction, per hour, annually, one-time)**

ATTACHMENT 4

Citation and Permit Management Systems Scope of Work

B. SCOPE OF WORK

1. Contractor Minimum Requirements

1.1 Contractor shall have five years' experience processing parking citations, with a total volume of more than 10,000 citations processed annually, providing management support systems, collections of delinquent citations, and coordinating activities with the California Department of Motor Vehicles.

1.2 Contactor shall have three years' experience providing call center customer service in a municipal or university parking environment, assisting customers with call-in issues (including providing information on parking permits and/or citations and providing guidance on appeal/adjudication processes).

1.3 Contractor shall have three years' experience providing mail-in processing in a municipal or university parking environment (including processing payments, establishing payment plans, and processing submitted appeals).

1.4 Contractor shall have five years' experience processing parking permits, with a total volume of more than 500 permits processed annually, providing management support systems, permit application and payment processing, and fulfillment of digital and/or physical permits.

1.5 Contractor shall have a minimum of 10 active clients located in the United States of America utilizing the proposed permit solution.

1.6 Contractor shall have legally operated in the United States of America for a minimum of five years.

1.7 Contractor's proposal and pricing will be valid for at least 180 days from submittal.

2. Citation Management System

2.1 Key Requirements:

2.1.1 Contractor shall provide a comprehensive web-based software solution that integrates citation related data, vehicle registered owner data, and complete records of all processing status and public contacts by phone or mail and is accessible to both the Contractor and the City staff.

2.1.2 CMS shall allow for full customization to the City specific Business Rules determined during the Design Review process. The City may change the Business Rules at its sole discretion which will be implemented by the Contractor within five business days.

2.1.3 CMS shall transfer citation data and photos from enforcement devices to the CMS software in real time and allow motorist to immediately pay a citation via all available payment channels.

2.1.4 CMS shall allow the creation of a temporary citation record in the situation where a motorist attempts to pay or contest a citation, but the citation has not yet been uploaded. Once the citation data from the handheld has been uploaded, the data from the temporary citation will be merged into the uploaded data and the temporary citation will be discarded.

2.1.5 Contractor and CMS shall file and store citations in an easily retrievable format for the City and State required timeframe.

2.1.6 Allow for scofflaw and/or hot-list management to be integrated into the CMS and Enforcement Issuance software.

2.1.7 Contractor shall maintain real-time access to motor vehicle registries in California.

2.1.8 Contractor shall allow for access to other states and international registries to obtain registered owner information.

2.1.9 Contractor will be responsible for all fees associated with obtaining registered owner information.

2.1.10 CMS to provide a process and reporting for the City to validate DMV vehicle makes upon return of registered owner information from DMV to ensure proper make of vehicle issued citation.

2.1.11 CMS to provide a process and reporting for the City to review DMV No Hit lists to ensure that license plate and state have been entered correctly.

2.1.12 CMS to provide a process and reporting for the City to review duplicate citations and correct dates, violation codes, and fine amounts.

2.1.13 CMS shall provide functionality to manage rental car agency and fleet programs including the following:

2.1.13.1 Store and track car rental agency and fleet vehicle reports of responsible billing parties from parking citations.

2.1.13.2 Enrollment and maintenance of existing fleet accounts, including enrollment date, contact information, date of termination, enrolled vehicles, etc.

2.1.13.3 Electronic invoicing and payment tracking.

2.1.14 CMS shall generate all notices and correspondence to be mailed based on the City's Business Rules.

2.1.15 CMS shall generate all notices and correspondence by batch or individually.

2.1.16 CMS shall allow entry of returned mail details and scanned copies of the returned items.

2.1.17 Contractor to provide an IVR service for phone payments.

2.1.18 Contractor to facilitate a robust Delinquent Collections Program.

2.1.19 Contractor shall import citation records issued prior to the execution of the contract at the City's instruction.

2.1.20 CMS shall allow for assigning permissions to access certain features based on user ID including limitations on the ability to correct dates, duplicate citations, violation codes, fine amounts, and suspension/dismissal codes.

2.1.21 CMS shall allow for customizable suspension, dismissal, and void codes/reasons. All codes shall have automation capabilities, allowing for the application and removal based on specific Business Rules dictated by the City.

2.1.22 CMS shall allow a record for citation voided in the field by an enforcement officer.

2.1.23 CMS shall allow for automation of invoicing, late fees, appeals, and collections with scheduler function.

2.1.24 CMS shall store and track previous and current owner information when a transfer of vehicle ownership has occurred by clearly notating in the account with changes, not limited to the source, old address, new address, date of owner transfer, etc.

2.1.25 CMS shall allow the maintenance and updating of a confidential vehicle database for exemptions authorized by the City linked to the parking enforcement handheld units.

2.1.26 CMS to allow for the processing and recording of refunds and reversals.

2.1.27 CMS shall provide full audit trail information for every processing transaction must be captured and retained for each citation until the related citation is purged from the system per the policies established by the City. All processing activities will be subjected to a detailed audit by the City.

2.1.28 Contractor technical support available via phone and email.

3. CMS Software Requirements

The CMS shall allow the City to perform the following functions:

3.1 Entry of manually issued citations.
3.2 Query for citation data by any input field, including, but not limited to date, citation number, license plate number, name and address of registered owner and responsible party, citation location, enforcement officer, and VIN.
3.3 Access in an online, real-time mode at a minimum, but not limited to, the following:
- 3.3.1 Summary Citation Data: citation number, state and license plate, parking meter number (if applicable), violation code with description, issue date and time, location, amount due, and current processing status.
- 3.3.2 An electronic copy of the citation issued by the wireless electronic ticket writer.
- 3.3.3 Issuing enforcing officer information.
- 3.3.4 Vehicle Data: vehicle make/model, vehicle color, vehicle type, registered owner name, address as provided by DMV, and the effective date of vehicle ownership.
- 3.3.5 Financial Data: the original fine amount plus any penalties or fees that have been added, such as a late payment penalty that includes the amount and exact date that the late payment penalty was imposed, returned check fee, or fee for obtaining a copy of a citation.
- 3.3.6 Mail Data: the mail date, description, and copy of all notices or correspondence generated for the record as well as returned mail.
- 3.3.7 Processing Data: the processing batch date and number (if appliable), digital imaging index (if applicable), the date on which the citation was updated to the CMS, the date registered owner information was requested and received from the vehicle registry, and the date that a registration hold was placed, confirmed, and released at the CA DMV. Each field must be clearly delineated and marked.
- 3.3.8 Registry Data: the vehicle make as recorded by the DMV, the date on which ownership data was recorded, and dates that indicate returned mail or registration non-renewal.
- 3.3.9 Adjudication Data: for administrative adjudication hearings, the date, time, office location, and disposition for in-person, telephone, video, and written declaration hearings for citations.
- 3.3.10 Suspend and Dismiss Data: the date and time a temporary suspension is applied that stops normal processing, the ID of the person processing the suspension, the type of suspension, and the date the suspension will be removed.
- 3.3.11 Correspondence Data: an imaged copy of all related correspondence as well as the date, time, code, and sufficiently detailed and readable description of all correspondence mailed relating to a citation along with the address used.
- 3.3.12 Returned Mail Data: the date that any notice or correspondence was returned by the United States Postal Service as undeliverable. This shall include the address or addresses used. Multiple entries should be kept and used for skip-tracing efforts.
- 3.3.13 Payment Data: payment date, payment type, payment source, amount, method of payment, payment batch number, and a copy of the check with appropriate security measures.

3.4 Pay or dismiss citations on one or multiple plates in one transaction.
3.5 Add notes to citations and plates.

3.6 Attach documents to citation records.
3.7 Place citations on hold to suspend penalty and notice activity.
3.8 Generate notice and correspondence letters.
3.9 Void citations with custom City void codes.
3.10 Support for multiple vehicle owners.
3.11 View and print a copy of a citation and images/photos taken during citation issuance.

4. CMS Payment Plans

Payment plans are available for individuals who qualify based on the California Vehicle Code (CVC). Additional payment plans may be available based on the City's defined criteria. Once approved, the payment plan shall allow the total amount due to be paid in installments over a set period. The CMS shall include the ability to support the CVC and City required payment plans. The CMS shall have the following capabilities:

4.1 Create and manage payment plans in accordance with existing and future State, CVC, and City policies.
4.2 Allow motorists to apply for payment plans online, by mail, or in person.
4.3 Allow motorists to make a payment on a plan online, by phone, by mail or in person.
4.4 Allow motorist to save a debit/credit card for automatic payment on a plan on a schedule date for a scheduled amount.
4.5 Automatically generate payment plan amounts and dates based on City Business Rules.
4.6 Generate payment plan letters based on City Business Rules.

5. CMS Adjudication

Adjudication appeals and hearings will be processed by the City. The Contactor shall provide an adjudication module with the minimum following requirements:

5.1 Contractor shall provide functionality for the entire lifecycle of the appeals and adjudication process following prescribed timelines and processes for persons contesting parking citations per State of California law, CVC, and City policy.
5.2 Provide ability to process appeals online, in person, by phone, or by mail.
5.3 Allow assigned users the ability to initiate an appeals process on behalf of a motorist.
5.4 For contested citations, the CMS must be capable of showing the registered owner's name and address alongside the contestant's name and address if the contestant is not the registered owner.
5.5 Allow an action to suspend a citation while appeals are under investigation. This action should be automated in the case of owner-initiated appeals (such as online).
5.6 Allow for the recording of an appeal reason customizable by the City and include comments provided by the contestant.
5.7 Provide an appeals queue for the City to address appeals as they are received. Queue shall include filtering and sorting functionality.
5.8 Provide scheduler module for scheduling of appeal hearings.
5.9 Allow the input of comments to be attached to a record pertaining to the adjudication actions.
5.10 Allow the attachment and review of files and supporting evidence to a record pertaining to the adjudication process.
5.11 Allow the selection of a reason for appeal using a drop-down menu. Reasons shall be customizable by the City.

5.12 Allow the adjudicator to record a case decision with suspension, dismissal, or liability codes. Codes shall be customizable by the City.

5.13 Generate and attach to the record, decision letters that can be printed, emailed or mailed to the recipient.

5.14 Generate and attach to the record a no-show (motorist did not attend appeals appointment) letter that can be printed, emailed, or mailed to the recipient.

5.15 Track all actions as part of the appeal and adjudication process, including person, time, and date for historical review.

6. CMS Department of Motor Vehicles (DMV)

Under California State law, the registered owner of a vehicle, as identified by the California DMV (or equivalent) where the vehicle is registered, is liable for all parking violations. The accurate and timely acquisition of registered owner information is critical to the success of processing citations, i.e., sending notices, collecting fines, and escalating to collections. For purpose of clarity, all references in this RFP to DMV mean any state(s) or province(s) motor vehicle registry unless the reference specifically states CA DMV to refer to the California Department of Motor Vehicles. The following is a list of requirements for DMV processing, including integration and interfacing:

6.1 DMV Data Integration

6.1.1 Contractor's CA DMV interface shall be real time, obtaining and importing registered owner's information to the CMS on a real time basis.

6.1.2 Contractor's out of state/international interfaces shall obtain and import registered owner's information to the CMS as soon as possible, but no more than 7 calendar days.

6.1.3 Contractor's DMV interfaces must be capable of inquiring through the DMV for registered owner information using either a VIN or the vehicle license plate number.

6.1.4 Contractor shall continuously attempt to retrieve registered owner information at regular intervals for all unpaid parking citations without registered owner information in the CMS at no additional cost to the City.

6.1.5 If data was not received or is incomplete, reporting must be provided to identify for follow-up of all incomplete or declined transactions.

6.1.6 In addition to the name and address of the registered owner of the vehicle cited, the vehicle identification number (VIN) must be obtained and presented in a format that permits a direct comparison with the last four digits of the VIN entered from an original parking citation.

6.1.7 CMS must store, update and maintain the following information:

6.1.7.1 License plate: effective date of vehicle registration; and vehicle identification number (VIN).

6.1.7.2 The dates on which DMV data were: (a) requested, (b) returned from DMV, and (c) confirmed or errors noted.

6.1.7.3 The date that any holds were sent to CA DMV and subsequently released, if appropriate; the number of citations charged to the license plate that are currently confirmed and on hold at the CA DMV; and data on hold that have been released.

6.1.8 Contractor must track and inform the City of all additions, changes, and deletions to existing State and local laws affecting parking issues as soon as the Contractor learns of the change, but no later than two weeks after the change is approved (such as signed by the Governor, published by the City Clerk, notice issued by the DMV, etc.).

6.1.9 Contractor must be able to make the necessary adjustments in its solution (hardware and software) to incorporate and modify all additions, changes, and deletions to the existing parking regulations and statutes.

6.1.10 CMS shall support DMV Registration Holds.

6.1.10.1 The CA DMV allows local jurisdictions to add the fine amount for unresolved parking citations to the bill for annual vehicle registration renewal. This is called placing a hold on vehicle registration and is an effective means of securing payment of delinquent parking citations. Contractor must provide an online, real-time interface with CA DMV to place these "holds" for unpaid parking citations, to release the holds within 24 hours when a citation is resolved or a hearing is scheduled, and, if permitted by DMV, to reactivate a registration hold when appropriate as determined by the City.

6.1.10.2 The information required by CA DMV must be automatically forwarded for registration hold processing, and receipt by CA DMV acknowledged.

6.1.10.3 Reports are required to verify compliance.

6.1.11 When payment is received or suspend/dismal is applied to a record, Contractor must be able to release the registration hold at CA DMV within 24 hours.

6.1.11.1 Reports are required to verify compliance.

6.1.11.2 Release date must be noted in the citation record.

6.1.12 The citation history for each citation receiving a registration hold must be updated to indicate the most recent processing step in the hold cycle and hold history.

6.1.13 CMS must process and account for payment transactions associated with money collected by CA DMV.

6.1.14 Contractor's database must be updated with all citation payment transaction details, and the payment information received from DMV must be reconciled with the parking citation database.

6.1.15 Contractor shall be able to report on DMV hold and payment activities.

7. CMS Split-Plate Logic

7.1 CMS must reliably and automatically compare the issue date of each citation with the vehicle registration date information on file at the DMV. This is especially important in states such as California, where the license plate stays with the vehicle rather than with the owner.

7.1.1 CMS must use registration date information to assign legal responsibility for each citation to a registered owner based on the effective date the license was assigned to a particular individual by a motor vehicle agency.

7.1.2 Citations issued before a change in registered owner must be assigned to the previous owner.

7.2 Registration updates shall be made as frequently as possible and immediately updated in the CMS.

7.3 CMS must accommodate manual correction of incorrect entries.

7.4 CMS must provide an online, real-time display of multiple citation records for a single plate, split by date of ownership.

8. CMS Customer Portal

Contractor shall provide a customer-friendly portal to provide access to parking citation information, adjudication and payment. The website does not have to be white labeled, however some City customization would be preferred including a logo and City contact information with a link to the City parking website. The following is a list of requirements for the portal:

8.1 Portal shall be fully hosted by the Contractor and fully integrated with the Contractor's CMS in real-time.
8.2 Portal shall be available 24 hours per day, 7 days per week.
8.3 Portal must be accessible on multiple browser platforms, including MS Edge, Google Chrome, Safari, and Firefox.
8.4 Portal shall be PCI compliant for online payment acceptance.
8.5 The City shall approve the application of any convenience fees.
8.6 Portal shall allow the email of receipts and correspondence.
8.7 Portal shall comply with all applicable ADA standards and requirements.
8.8 A motorist shall be able to complete the following actions via the portal:
- 8.8.1 Search for a citation by license plate, citation number, VIN or payment plan.
- 8.8.2 View a copy of a citation, related photos, and citation notes.
- 8.8.3 Pay a citation and all related fees.
- 8.8.4 Initiate an Initial Review of a citation.
- 8.8.5 Initiate a Hearing for a citation.
- 8.8.6 Request a payment plan and upload supporting documentation.

9. CMS Mail-In Payment Processing

The accurate processing of mail-in payments is critical and directly affects subsequent collection actions, such as the application of late penalties, delinquent noticing; and applying registration holds at the CA DMV. The following is a list of requirements for mail in payment processing:

9.1 Contractor will maintain an address in California for mail-in payments.
9.2 Contractor will process all mail-in payments within two business days of receipt.
9.3 All payment documents received and processed must be copied and archived to be promptly retrievable as required by law and CVC.
9.4 Contractor shall process payments in a secure environment with the appropriate security, surveillance, and oversight.
9.5 Any Subcontractors utilized for processing mail in process will be appropriately experienced, certified, licensed and bonded, as applicable.
9.6 Mail-in payment processing must include a broad range of control and procedures to ensure accurate and timeline processing including audit trails for processing, endorsing and depositing payments.
9.7 All payments will be accurately recorded in the CMS. Contractor will perform audits to ensure accuracy.
9.8 Funds for deposit must be prepared, documented and provided to the City in a manner that allows the City to receive, record, and audit deposits.
9.9 Records for every deposit must be maintained and stored.
9.10 Contractor shall be held completely and solely responsible for ensuring the integrity and security of City revenue throughout the entire processing procedure. Any shortages or losses will be the exclusive responsibility of the Contractor and shall be fully reimbursed to the City. Overages must be researched and resolved in every case. Appropriate refunds shall be provided to any entitled parties within timeframes established by the CVC.
9.11 Any mail or correspondence incorrectly received by the Contractor, but addressed to the City, will be forwarded to the City in a timely manner.
9.12 The Contractor shall provide reporting on mail in processing statistics such payments received, quantities, and more.

10. CMS Reporting

It is essential that the overall system properly processes and report on all activities and transactions. The Contractor must provide a robust and comprehensive reporting package as part of the CMS solution. The following is a list of requirements for the Contractor's reporting package:

10.1 Contractor must provide comprehensive, detailed, accurate, and timely management, financial, and operational on-line, real-time, and other reports for City management.
  10.1.1 Batch reporting shall be acceptable for large amounts of data only.
10.2 Contractor's reporting shall be able to query reports by multiple filters such as date, channel, citation, etc.
10.3 Contractor's reporting shall allow for the set up automated reports.
10.4 Reports shall be exportable in pdf and/or excel/csv format.
10.5 Reporting shall be available on the following topics:
  10.5.1 Revenue and payments for all channels
  10.5.2 Mail payment deposit and reconciliation
  10.5.3 Financial adjustments, refunds, etc.
  10.5.4 Payment plans
  10.5.5 Adjudication
  10.5.6 DMV processing and holds
  10.5.7 Split plate and make/match failures
  10.5.8 Citation issuance
  10.5.9 Issuing officer session activity
  10.5.10 Citation aging and delinquency
  10.5.11 Notice and correspondence activity
  10.5.12 IVR activity
  10.5.13 Delinquency collection activity
  10.5.14 Accounts receivables
  10.5.15 FTB activity
10.6 Support reporting at the end of each Fiscal Year, in accordance with CVC Section 40200.3(b) setting forth the number of cases processed, and all financial and/or citation payments received and distributed, along with any other information that may be required by the issuing agency.

11. CMS Financial Processing

It is essential that the overall system properly processes and record all financial aspects of related activities and transactions. It must provide accurate accounting of each transaction and ensure that funds are properly deposited or forwarded.

11.1 Key Requirements

The following is a list of requirements for financial processing:

11.1.1 Full data shall be captured for every payment processed by the any component of the overall system, including but not limited to:
  11.1.1.1 Payment amount
  11.1.1.2 Source (mail, walk-in, pay-by-phone, pay-by-web, DMV, FTB, etc.)
  11.1.1.3 Method of payment (cash, check, money order, credit card, etc.)

11.1.1.4 Payment processing date
11.1.1.5 Original fine amount
11.1.1.6 Late payment penalty (including exact date that late payment penalty was imposed)
11.1.1.7 Second late payment penalty
11.1.1.8 Total paid
11.1.1.9 Total reduced
11.1.1.10 Total due
11.1.1.11 Amount overpaid
11.1.1.12 Reason for overpayment including all data processing support required to meet the City's legal obligation to refund overpayments
11.1.1.13 Refund check or credit issuance date
11.1.1.14 Refund check issuance mail date

11.1.2 Lockbox Operation: The Contractor must maintain a lockbox operation sufficient to process all lockbox payments within two business days of receipt.

11.1.3 All payment and transaction data must be in an on-line, real-time environment, including on-line inquiry of payment documents.

11.1.4 CMS must provide a clear auditable record of payments received. The audit trail must include citation number, payment date and time, payment amount, payment method, and the name or ID of the staff member that accepted payment and made the entry.

11.1.5 All transactions are subject to audit by the City at any time without advance notice.

11.1.6 CMS must be able to process City-imposed fees, including bounced check or other fees.

11.1.7 CMS must allow on-line payment adjustments and error corrections with audit trails.

12. CMS Bank Cards

The following is a list of requirements related to bank card acceptance:

12.1 Motorists shall be able to use credit/debit cards for any type of payment for the services under the contract.

12.2 Contractor will provide a payment gateway for processing of bank cards which is capable of processing Visa, Mastercard, American Express and Discover.

12.3 Contractor will integrate with the City's current merchant processor, Chase Bank.

12.4 Contractor will allow the City to change the merchant processor in the future for no cost.

12.5 Contractor solution and all related components shall all be compliant with Payment Card Industry Data Security Standard (PCI Level 1 certified by a Qualified Security Assessor (QSA)) as applicable.

13. CMS Financial Adjustments

The following is a list of requirements related to financial adjustments:

13.1 CMS must permit the input of financial adjustment transactions, such as, but not limited to, returned checks, charge backs, reversals, or refunds.

13.2 Adjustments may include reversing an entire payment, modifying a payment amount, altering the amount due to close a citation, and reopening a citation.

13.3 CMS will generate appropriate notification letters which are automatically sent to the appropriate party advising of any actions.

14. CMS Citation Issuance Devices & Software

The City currently provides and uses 13 Android and iOS devices as handheld citation issuance devices supported by 10 Seiko II Bluetooth printers. To the extent possible, the City may elect to continue use of the devices. The City may also choose to replace existing equipment. Thus, the Contractor shall propose an option for both scenarios.

14.1 Enforcement Handhelds

Contractor shall propose a hardware solution that represents the current state of mobile wireless device technology and data management. Contractor may propose one or both of the following options:

- A handheld device with a separate printer.
- An all-in-one or single-piece handheld device where the printer and handheld are attached.

The following is a list of requirements for handheld issuance devices:

14.1.1 Handheld and printer must be inclusive of the protective infrastructure to ruggedize and protect equipment from working conditions and outdoor elements.
14.1.2 Handheld and printer shall be able to withstand drops, be water resistant, and have appropriate screen protection and appropriate grip control.
14.1.3 The life span of all devices shall be at least three years with proper use.
14.1.4 The cellular communications on any handheld device provided to the City during the term of the contact shall have a life span of at least 5 years.
14.1.5 Contractor shall provide support for all devices for the agreement term, including hardware, operation system software and communication plans.
14.1.6 Handheld and printer Batteries shall last for an entire shift (up to 11 hours); supplemental in-field replaced battery packs or mobile charging will be acceptable.
14.1.7 Handheld devices shall include a camera with a minimum resolution of 8 megapixels, able to take photos in all lighting conditions and be able to geotag the photos taken.
14.1.8 Handheld and printer shall have an optional carrying case.
14.1.9 Handheld devices shall include Wi-Fi, Bluetooth, and GPS capability.
14.1.10 Should advancements in cellular technology or end-of-life require new devices, the Contractor will provide at least one year's notice to the City and provide reasonably priced options for upgrades.
14.1.11 In the case of separate components, printers shall include Bluetooth capability and shall not require a physical connection to the handheld for operations.
14.1.12 Handheld devices shall include functionality that prevent usage of the device as a telephone or allow calling only to specific phone numbers, as directed by the City.
14.1.13 Handheld devices shall include functionality that prevent use of SMS/text capability unless limited to specific numbers, as directed by the City.
14.1.14 Handheld devices shall include functionality that allow the device restricted so that users in the field cannot add or remove apps/software, unless directed by the City.

14.2 Citation Issuance Software

The following is a list of requirements for handheld issuance software:

14.2.1 The following fields, at a minimum, must be captured during citation issuance by the Contractor's enforcement software:

14.2.1.1 Citation number
14.2.1.2 License plate
14.2.1.3 Where plate is not available, a field for up to 17-digit VIN shall be provided
14.2.1.4 License expiration Year/Month, Body Type (DMV specific), Vehicle Make, Vehicle Color
14.2.1.5 Meter Number field
14.2.1.6 State
14.2.1.7 Last four digits of VIN
14.2.1.8 Violation code and description (up to three)
14.2.1.9 Location of violation, including City defined zone
14.2.1.10 Issue date
14.2.1.11 Issue time
14.2.1.12 Officer ID
14.2.1.13 Officer name
14.2.1.14 Notes to print on citation (known as external notes)
14.2.1.15 Officer notes, not visible to the public (known as internal notes)
14.2.1.16 Electronic marking (tire chalking)
14.2.1.17 Photos, videos, and audio

14.3 Software shall have the ability to support pay-by-plate, pay-by-space, permit status, and mobile payments.

14.4 Software shall provide the ability to validate disabled placards with DMV look-up.

14.5 Software shall provide a user-friendly interface for ease of use and durability.

14.6 Software shall require a password/security sign-in to prevent unauthorized use

14.7 Software shall allow the user to view and void any citation written by the user in the active session.

14.8 Software shall support voiding a previously issued citation that requires a City-defined reason/code and input of explanation.

14.9 Software shall support the reprinting of an issued citation that is identical to the original.

14.10 Software shall automatically transfer and upload citations issued by the handheld to the CMS in real-time, including any audio and/or picture associated with the citation.

14.11 Software shall not allow an officer to attempt to issue a citation unless all required fields have been entered with valid information. For example, a citation with no violation code or no license plate or VIN cannot be created.

14.12 Upon entering a license plate during citation entry, software shall automatically search necessary lists (scofflaw, permit, hotlist, stolen vehicle, etc.) for a match.

14.12.1 If a match is found, the appropriate information will display on the handheld screen.

14.13 Software shall support monitoring of vehicles in a fixed time limit zone across accessible to all handhelds in use at any one time. This shall allow for multiple Officers to enforce time limits in location at the same time.

14.14 Software shall accurately time and date stamp transactions by the system's master clock.

14.15 Software shall support the issuance and tracking of warning notices as well as actual citations including issuance history by license plate.

14.16 Software shall support standard location codes or block faces and descriptions. Locations shall also be manually generated when necessary.

14.17 Software shall support multiple citation number sequences and formats.

14.18 Software shall Support CA CVC requirements for Drive-Away citations including allowing a citation to be marked as a drive-away.

14.19 At a minimum, software shall allow the selection of the previous location for a new citation, otherwise support geofencing capability to auto-populate locations.

14.20 Software shall support real-time tracking of officer location based on GPS coordinates.

14.21 Software shall support photos taken as part of the citation process shall be maintained within the citation app and uploaded to the CMS, not simply placed on the device's camera roll.

14.21.1 The City shall be able to set a minimum number of photographs that must be taken for each citation.

14.21.2 If the Contractor has a maximum number of photographs per citation, it must be greater than 10.

14.22 Provide a set of pre-fixed text lines to go in the notes (both printed and internal); when the officer is completing the notes, they can pick from city-defined pre-established text lines or use free-from text entry.

14.23 Solution shall integrate with LPR systems so that any hit on the mobile LPR can be transferred seamlessly to the handheld, including associated LPR images.

14.24 Software shall allow a user to cancel a citation or warning that has not been completed (e.g., the citation has not been printed or marked as drive-away).

14.25 Software shall support an Officer activity log with the ability for the Officer to record issues or notes in the field.

14.26 Print a complete citation or warning ticket, including the following fields on the front:

14.26.1 Citation or warning number
14.26.2 Date and time issued
14.26.3 Badge number and name of issuing officer
14.26.4 Location where citation issued
14.26.5 Violation code for which the citation is being issued
14.26.6 Violation description
14.26.7 Violation amount
14.26.8 State surcharge
14.26.9 Total amount due
14.26.10 Vehicle license plate or full VIN
14.26.11 Last 4 digits of the VIN
14.26.12 Vehicle registration expiration date
14.26.13 Vehicle make
14.26.14 Vehicle color
14.26.15 Vehicle type
14.26.16 Public notes

15. CMS Noticing, Correspondence, and Collections

The Contractor will provide mail processing and services as well as mail in payment processing for the City. The accurate processing of noticing and correspondence is critical and directly affects timely

payments, subsequent collection actions, such as the application of late penalties, delinquent noticing; and applying registration holds at the CA DMV.

15.1 Notice Mailing

The following is a list of requirements for noticing and correspondence mail:

15.1.1 All noticing and correspondence activity will follow the City Business Rules as recorded during the Design Review process.
15.1.2 All noticing will be accurately recorded in the CMS. Contractor will perform audits to ensure accuracy.
15.1.3 Contractor shall process and mail reminder notices for unpaid citations including out-of-state owners.
15.1.4 Contractor shall process and mail delinquent notification to the lessee and/or secondary owner when delinquent and following the lien process under California state law.
15.1.5 Contractor shall generate and mail citation correction notices where the issuing officer determines that there is incorrect data in the parking citation.
15.1.6 Contractor shall generate and mail notices to lessees or renters of cited vehicles, including loaner vehicles, when provided with proof of written lease or rental agreement as required by the CVC.
15.1.7 Contractor shall generate and mail Drive Away notices to registered owners of vehicles that drive away prior to the issuing officer attaching the citation to the vehicle. The notice must be mailed out to the registered owner within fifteen (15) calendar days of the citation issuance as required by the CVC.
15.1.8 Contractor shall generate and mail correspondence regarding initial review and hearing decisions as part of the adjudication process.
15.1.9 Contractor shall record when mail is returned as not deliverable. Returned envelope and correspondence and/or notice must be scanned and imaged into the CMS.
15.1.10 Contractor must provide automated noticing and mail notices to comply with all City procedures and CVC requirements for scheduling and conducting administrative hearings.
15.1.11 Contractor shall process and mail "No Show" letters for constituents who do not appear for their scheduled hearing. The design logic will also prevent a no-show letter generated if the case has been "rescheduled" or "continued" or adjudicated.
15.1.12 Contractor shall generate and mail payment plan letters initiated on the Customer Portal or by City staff.
15.1.13 All noticing or correspondence must operate with accurate and timely record keeping that includes, but is not limited to, time stamping of all communication. Time stamps must include pertinent and relevant specific information such as date, time, name, and location. Any correspondence sent to a motorist and/or returned from a motorist must be actively logged to ensure record keeping is accurate and up to date.
15.1.14 Contractor will ensure all outgoing mail is be postmarked.
15.1.15 Contractor shall provide reporting on noticing and correspondence statistics such quantities, types, return mail, and more.

15.2 Telephone Services

The Contractor will provide an IVR telephone service to allow motorists to inquire about and make payment on a citation. The following is a list of requirements for IVR telephone service:

15.2.1 Contractor shall provide a sophisticated, flexible, and responsive 24 hours a day, 7 days a week, telephone answering system and all necessary hardware components, operational software, and technical support for the Interactive Voice Response (IVR) system.
15.2.2 The related phone number must be toll free to the caller.
15.2.3 IVR solution must be PCI compliant for bank card payment processing.
15.2.4 IVR should be available in both English and Spanish service.
15.2.5 IVR should allow for some customization whereas a caller will be easily aware of which City they are calling about.
15.2.6 IVR should be easily used, customer friendly and allow for the fewest steps possible.
15.2.7 IVR solution shall be compatible with Telephone Device for the Deaf (TTD) for use by callers with a hearing impairment.
15.2.8 IVR shall allow, at minimum, the vocal listing of the City s customer service phone.
15.2.9 IVR shall be integrated with the Contractor's CMS for real-time updating of payments received over the phone.
15.2.10 Contractor shall be able to report on call statistics such calls received, calls dropped, payments received and more.

15.3 Delinquent Collections

The Contractor will provide and support a delinquent collections program to maximize the collection of past due citation payments. The City does not endeavor to create a punitive relationship with motorists, but instead encourage compliance with the law and parking program regulations. The following is a list of requirements related to delinquent collections:

15.3.1 Contractor shall provide and manage an effective special collection program, including a collections software system, and make diligent, cost- effective efforts to collect the City-assigned delinquent accounts.
15.3.2 The City shall approve Business Rules prior to activating a delinquent collections program. Business rules will include plans, notices, timelines, and activities related to delinquent collections.
15.3.3 Contractor shall follow and implement procedures to consistently abide by local, state and federal laws request collections activities.
15.3.4 Contractor must adhere to nationally accepted professional standards for collection activities and ensure the professional quality, technical quality, timely completion, and effective coordination of all secondary collection services furnished by its officers, employees, agents and subcontractors.
15.3.5 Contractor shall fully comply with the Fair Debt Collection Practices Act, Fair Credit Report Act and all other applicable federal statutes, regulations, rules, and standards, plus all applicable California fair debt collection practice and consumer protection laws and regulations, and applicable licensing and accreditation standards for collection agencies.
15.3.6 Contractor shall be capable of importing and collecting on citations issued prior to contract execution.

15.3.7 Contractor shall continuously perform the debtor identification through DMV look up, forward address monitoring, and advanced skip tracking.
15.3.8 Contractor shall mail delinquent collection notices in line with City Noticing and Correspondence Requirements.
15.3.9 Contractor shall manage DMV registration holds.
15.3.10 Contractor shall manage Franchise Tax Board (FTB) Intercept Program.
15.3.11 Contractor shall manage outbound calling efforts.
15.3.12 Contractor shall enable payment of debts through all channels required throughout this RFP.
15.3.13 Contractor shall update and maintain records in the CMS regarding all delinquent collection efforts in real-time. In the case of the use of secondary collection subcontractor, the City may approve batch updates made at reasonable timeframes.
15.3.14 Contractor shall be able to report on Delinquent Collection efforts such as mailings, calls, collection technique success and more.
15.3.15 Contractor shall be able to report on Delinquent Collections including quantities, values, dates and more.
15.3.16 In all cases, the only fees that will be paid by the City to Contractor for Delinquent Collections activities will be a subset of those amounts actually received, deposited, and paid to the City.
15.3.17 Contractor shall be responsible for any and all expenses related to delinquent collections.
15.3.18 If the expense is passed on to and paid by the violator, the Contractor shall be reimbursed with the expense.
15.3.19 At the City's discretion, the Contractor will support the City in processing of writing off citations as approved by City Management or Council.

15.4 Difficult to Collect Cases

There are several categories of citations that require additional handling and collection efforts because they have remained unresolved despite all other collection efforts. The Contractor shall make efforts for the following types of collections.

15.4.1 DMV ownership transfers - These are citations where the DMV has indicated a transfer of ownership from the individual on record, with no additional ownership data.
15.4.2 DMV Make-Match failure - These are citations which have a vehicle make that does not match the make registered with the DMV.
15.4.3 DMV Hold Reject - These are citations issued against vehicles for which registration hold requests were rejected due to some data not matching DMV files.
15.4.4 No Registry Confirm - These are citations for which no owner name and address were obtained from the DMV.
15.4.5 Aged Registration Hold - These are citations issued against vehicles that have been placed on registration hold but have passed their registration expiration date and have not responded.
15.4.6 Declaration of Non-Ownership - These are citations wherein a motorist has submitted a declaration of non-ownership stating they were not the owner of the vehicle at the time of the parking citation.
15.4.7 No Address Found - These are citations wherein the current address was identified as undeliverable.

15.4.8 Rental - These are citations issued to rental vehicles and the motorist renting the vehicle was identified by the rental company but has not paid the citation.

15.5 FTB Intercept Program

15.5.1 Contractor shall manage the interface and certification for Franchise Tax Board (FTB) Intercept payments on behalf of the City.
15.5.2 Contractor shall manage FTB submission process in a timely manner, adhering to all FTB guidelines and State of California policy and law.
15.5.3 Contractor shall properly identify and collect required data for eligible records to be submitted to FTB.
15.5.4 Contractor shall generate and send mail notifications prior to file submission as required.
15.5.5 Contractor shall receive and process FTB files, updating the CMS on a real time basis.
15.5.6 Contractor shall provide timely modification/notification to the intercept program if the amount to be intercepted has changed.
15.5.7 Contractor shall assist in processing timely refunds in the event of overpayment or misidentification.
15.5.8 Contractor shall be able to report on FTB activities.

16. Permit Management System

16.1 Key Requirements

The following is a list of key requirements for the PMS solution:

16.1.1 PMS shall be online, cloud-based, and not require any installation of software, accessible from any PC with a web browser.
16.1.2 PMS shall update in real time.
16.1.3 PMS shall allow for full customization to the City specific Business Rules determined during the Design Review process. City may change the Business Rules at its sole discretion which will be implemented by the Contractor within five business days.
16.1.4 Contractor solution and all related components shall all be compliant with Payment Card Industry Data Security Standard (PCI Level 1 certified by a Qualified Security Assessor (QSA)) as applicable.
16.1.5 PMS solution will provide a payment gateway for processing of bank cards which is capable of processing Visa, Mastercard, American Express and Discover, which will integrate with the City s current merchant processor, XXX.
16.1.5.1 Contractor will allow the City to change the merchant processor in the future for no cost.
16.1.6 PMS shall allow for assigning permissions to access certain features based on user ID.
16.1.7 PMS shall support both physical and virtual parking permits tied to a license plate.
16.1.8 PMS shall support the ability to prevent permitting processing and issuance when a motorist has citation related amounts due to the City.
16.1.9 PMS shall generate renewal and cancellation notices to be sent by mail and email.
16.1.10 PMS shall generate renewal and cancellation notices by batch or individually.
16.1.11 PMS shall generate acceptance or denial of permit applications notices to be sent by mail and email.
16.1.12 PMS shall generate a unique permit number.
16.1.13 PMS shall allow the addition and removal of any permit types.
16.1.14 PMS shall allow for multiple parking permits zones and districts.

16.1.15 PMS shall provide functionality for guest parking permits.
16.1.16 PMS shall support rolling expiration data (daily, weekly, monthly, annually, date-to-date).
16.1.17 PMS shall support exception permit processing and quantity limitations with time period parameters.
16.1.18 PMS shall restrict and allow multiple permits to be assigned to one license plate.
16.1.19 PMS shall support multiple permit pricing structures including flat, prorated, and tiered pricing.
16.1.20 PMS shall support multiple permit waitlists.
16.1.21 An authorized user shall be able to conduct the following actions in the PMS:
- 16.1.21.1 Create a new permit holder account.
- 16.1.21.2 Enter or create permits assigned to a motorist.
- 16.1.21.3 Correct, Autofill, or standardize address entries.
- 16.1.21.4 Validate permit program eligibility based upon supporting documentation.
- 16.1.21.5 Approve or deny parking permit applications based on geographical (address) location or requested permit or by other City determined factors.
- 16.1.21.6 View and manage permit request queue, listing permits requiring review for approval.
- 16.1.21.7 View and manage permit waitlists including adding or removing waitlist requests.
- 16.1.21.8 Process payments for permits.
- 16.1.21.9 Process refunds for permits
- 16.1.21.10 Process multiple permits in one transaction.
- 16.1.21.11 Query by account name, account number, permit type, permit number, license plate number, and address.
- 16.1.21.12 Add notes to permit accounts with no limitation.
- 16.121.13 Edit account information and permit information.
- 16.1.21.13 Cancel an existing permit.
- 16.1.21.14 Print temporary permits.
- 16.1.21.15 Print, mail or email correspondences to permit holds

16.1.22 PMS shall provide full audit trail information for every processing transaction must be captured and retained for each permit until the permit is purged from the system per the policies established by the City. All processing activities will be subjected to detailed audit by the City.

16.2 PMS Customer Portal

Contractor shall provide a customer-friendly portal to provide access to parking citation information, adjudication and payment. The website does not have to be white labeled, however some City customization would be preferred including a logo and City contact information with a link to the City parking website. The following is a list of requirements for the portal:

16.2.1 The portal shall be fully hosted by the Contractor and integrated with the Contractor's PMS in real-time.
16.2.2 The portal shall be available 24 hours per day, 7 days per week.
16.2.3 The portal must be accessible on multiple browser platforms, including MS Edge, Google Chrome, Safari, and Firefox.
16.2.4 The portal shall be PCI compliant for online payment acceptance.
16.2.5 The City shall approve the application of any convenience fees.

16.2.6 Contractor s website shall comply with all applicable ADA standards and requirements.
16.2.7 Provide customers with email messages regarding the approval or status of their permit.
16.2.8 A motorist shall be able to complete the following actions via the portal:
16.2.9 Purchase and/or request an annual, visitor or guest permits with qualifying documentation.
16.2.10 Request placement on a permit waitlist.
16.2.11 View status of position on a waitlist.
16.2.12 Remove placement from a waitlist.
16.2.13 Process payment for a waitlist position or permit.
16.2.14 Renew an existing permit.
16.2.15 Cancel a permit.
16.2.16 Update permit information (e.g., license plate number, make, model, color, and address) as allowable by a permit type.

16.3 PMS Reporting

The following is a list of requirements regarding reporting for the PMS:

16.3.1 Contractor shall provide comprehensive, detailed, accurate, and timely management, financial, and operational on-line, real-time, and other reports for City management.
16.3.2 Batch reporting shall be acceptable for large amounts of data only.
16.3.3 PMS reporting shall provide the ability to query reports by multiple filters including date.
16.3.4 PMS reporting shall provide reporting on permitting statistics such quantities, types, and more.
16.3.5 PMS reporting shall be exportable in pdf and/or Excel/CSV format.

17. Warranty and Support Services

The following is a list of requirements for the CMS solution Warranty and Support:

17.1 Contractor shall include a minimum of a one-year hardware warranty for any hardware delivered to the City.
17.2 Contractor shall provide extended hardware warranty options.
17.3 Contractor shall provide a warranty on all software and system solutions for the term of the contract.
17.4 Contractor shall provide ongoing support services through the term of the contract, including a toll-free phone number and online help (Help Desk). Support services shall be available from 8am to 5pm Pacific Time Zone reasonable hours, seven days per week (excluding holidays).
17.5 Any requests for support that cannot be handled immediately by the Help Desk shall be acknowledged by the Contractor within one business day and updated on a regular basis.
17.6 Contractor s support services must be provided by a staff of experienced, well-trained technicians.
17.7 Contractor shall utilize a ticket tracking system to open, track and close support requests from the City.

17.8 Contractor shall provide regular and ongoing technical bulletins that identify product notifications, technology updates, lessons learned, and/or system performance that detail issues, changes, improvements, and upgrades.

18. Project Management

The Contractor shall provide Project Management services during the design, build and implementation of the Contractor's solution. The following is a list of requirements regarding Project Management for solution delivery:

18.1 Contractor shall assign a Project Manager for the duration of the planning, implementation, delivery and installation portion of the contract who will be responsible for, including but not limited to:
- 18.1.1 Project oversight and delivery of the system.
- 18.1.2 Being a single point of contact for the City and providing for the management, implementation, and on-going trouble shooting of the System during its installation.
- 18.1.3 Coordinating efforts with the City and any subcontractors.
- 18.1.4 Being available as required for onsite work and otherwise available to the City during regular business hours via email, phone or video conference to respond to City needs, questions and or issues.
- 18.1.5 Developing and maintaining, in consultation with the City, a detailed implementation and project plan for the System.

18.2 Contractor's Project Manager shall be experienced in the Contractor's solutions, parking operations, and all related laws and codes pertaining to citation management in California. The Project Manager shall be able to provide guidance and suggestions to the City on best practices.

18.3 Contractor shall provide a Design Review process for the customizable and configurable portions of the solution. The Design Review process will result in a Business Roles document that the City shall approve. The Business Rules will be the guidelines and rules for all activities and work related to delivering the scope of the resulting agreement.

18.4 Contractor shall test all hardware, software and systems prior to delivery to the City.

18.5 Contractor shall support the City in testing all hardware, software and system prior to implementation.

18.6 Contractor shall develop a training plan for review and approval by the City.

19. Training

The Contractor will provide comprehensive training are part of the solution implementation. The City requires training for multiple teams and departments. The following is a list of requirements:

19.1 Contractor shall provide a training plan that includes but is not limited to all functionality of CMS operations, adjudication, enforcement devices, citation issuance software, web portal operations, noticing and correspondence operations, IVR operations, and reporting. The training plan shall include:
- 19.1.1 Types of training course with a target audience
- 19.1.2 Description of course
- 19.1.3 Length of course
- 19.1.4 Method of training (video conference, in person, etc.)
- 19.1.5 Prerequisites for the training course

19.2 Contractor shall provide training in person or via video conference as is the most appropriate for the topic. At a minimum, Contractor will provide at least two days of onsite/in person training.

19.3 The City may request additional training sessions at reasonable intervals and lengths via video conference for no additional cost for the term of the contract.

19.4 Contractor will provide the necessary training to the City for any new, upgraded or additional functionality provided during the term of the contract.

19.5 The City may request additional training sessions in person. Contractor will provide a quote for services within one week, and perform that training within four weeks, of the City's request.

19.6 Contactor shall supply and keep current digitals copies of all operations, training, and user manuals, which include detailed instruction for the operation of the entire solution.

20. Integration Requirements

The following is a list of requirements for the integrations to be part of Contractor s CMS solution:

20.1 Contractor shall provide real-time integration with the City's current, new, and future parking technology and data management Contractors, which currently includes:

20.1.1 LPR - Genetec/ Route 1

20.1.2 Pay by Plate pay stations – IPS

20.1.3 Mobile payment applications – Honk, PayByPhone, ParkMobile

20.2 Contractor shall be able to work with outside Contractors to perform data migration, if required by the City

20.3 Contract will review and comply with the additional data, system and security requirement in Attachment B.

21. Other Citation Related Services (Optional)

The City is interested in reviewing proposals for turn-key services. The following requirements will be considered optional; however, Contractors are encouraged to submit proposals that include one or more of these options. The Contractor shall include a full description of their services related to each option, including any City prerequisites, and complete pricing for these services. Each service shall be accompanied by a comprehensive reporting package that will allow the City to monitor the Contractor's operation. The City reserves the right to negotiate reasonable service level agreements for each service.

21.1 First line call center to respond to motorist questions or concerns regarding citations, including the scheduling of hearings. Exceptions to be forwarded to the City for handling via the CMS online platform. Call center shall be available Monday through Friday between the hours of 8am and 5pm PST, excluding City holidays.

21.2 Processing all in bound mail, including mail in appeals including the provision and management of California address. Contractor will process requests based on City approved Business Rules or forward the request to the City for handling via CMS online processing.

21.3 Entry of Manual Citations.

21.4 Provide citation paper stock to include a design and text provided by the City.

22. Other Permit Related Services (Optional)

The City is interested in reviewing proposals for turn-key permit processing and fulfillment services. The following requirements will be considered optional; however, Contractors are encouraged to submit proposals that include one or more of these options. The Contractor shall include a full description of their services related to each option, including any City prerequisites, and complete pricing for these services. Each service shall be accompanied by a comprehensive reporting package that will allow the City to monitor the Contractor s operation. The City reserves the right to negotiate reasonable service level agreements for each service.

22.1 Provisioning permit stock including hand tag, window sticker or otherwise with a unique preprinted identification number. The City shall design and approve the stock design.

22.2 Printing and mailing of renewal and cancellation notices.

22.3 Processing, fulfillment and mailing (or emailing) of online permit applications. Exceptions to be forwarded to the City for handling via the PMS online platform. Fulfillment should occur within 2 business dates of application receipt.

22.4 Processing, fulfillment and mailing of mail in permit applications and payments, including lockbox services. Exceptions to be forwarded to the City for handling, which may include use of the online platform. Fulfillment should occur within 2 business dates of application receipt.

22.5 Providing a DMV interface to perform DMV look ups for the PMS, to allow for automated confirmation of registered owner name and address associated with the vehicle registration.

22.6 First line call center to respond to motorist questions or concerns regarding permits. Exceptions to be forwarded to the City for handling via the PMS online platform. Call center shall be available Monday through Friday between the hours of 8am and 5pm, excluding City holidays.

23. Other Services (Optional)

The Contract should consider the following requirements and address them in their proposal as desired:

23.1 With the implementation of new parking technology public awareness and education is important to any successful parking management program. The Contractor shall describe any public outreach/education campaign support that will be included with your solution at no additional cost to the City. The Contractor shall provide examples of prior successful implementations, including sample images, emphasizing similar installations and education introducing a new system.

23.2 The City is interested in innovation and value-added services. Contractors should describe any enhanced services and features that are available to the City currently or in the near future and how these services and features would be integrated to ensure motorist convenience. All associated pricing for any proposed or suggested feature must be identified.

ATTACHMENT 5

Data, Security and System Requirements

Scope of Work

Author:

Dixon Resources Unlimited

Updated:

9/5/24

ATTACHMENT 5

1 Overview....3
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1 Overview

A comprehensive Parking Management Program requires a significant focus on data, integration, and system design and security. The City desires to partner with Contractors who focus on flexible and industry leading solutions while providing secure and compliant technology. This section includes additional requirements beyond what is defined in specific sections of this RFP. Proposers must take care to fully understand all related requirements as all will be part of the resulting contract awarded.

2 System and Security Requirements

2.1 Contractor shall provide secure hosting and support for all functions, ensuring availability through the Internet for all devices, including desktop and mobile computers, phones, tablets, and other wireless devices. The City shall not be required to install or maintain software on servers owned or managed by the City.

2.2 Computers that access the System shall not require special software packages or "client" software to access the System. Any computer shall be able to access the System through a standard web browser without plug-ins or other components.

2.3 Contractor shall be responsible for taking every precaution to ensure that all systems, files, data, equipment, communications, and facilities are reliable.

2.4 Contractor shall be responsible for virus detection, prevention, control, and eradication for all System servers and connected devices.

2.5 Contractor shall have security features that are designed to maintain the security of all information contained in the System database and maintain the confidentiality of information. Contractor's security for the System and all connections thereto shall conform to current industry best practices.

2.6 Contractor is expressly forbidden from selling, leasing, distributing, publishing, or otherwise sharing any personal information collected from the City, including, but not limited to, transaction history, address, email address, phone number, and credit card information. Notwithstanding the preceding restrictions, Contractor shall be permitted to use such information to enable the services provided to City as part of this agreement. At the City's sole discretion, the City may direct the Contractor to share data in a secure manner with City appointed parties.

2.7 All information security incidents shall be reported immediately to the City. Security incidents include theft, loss, damage or compromise to information systems and data, known vulnerabilities and exploits, website defacement or compromise, successful malware attacks, denial of services, and other security events as defined by the City's Information Security Officer.

2.8 Contractor shall establish and maintain data storage, retention, and archive

procedures to maintain System performance.

2.9 The System shall provide full system backup and recovery capabilities. Contractor shall be responsible for the maintenance of the database which will include back-up and recovery procedures. Contractor shall make sufficient backups to ensure that no data is lost in any circumstances.

2.10 System uptime is critical. The Contractor will maintain a 99.5% or greater uptime annually for the system as whole, including any subsystems critical to solution operation.

2.11 Uptime will be excluding scheduled maintenance. Contractor will notify City of any schedule downtime at least 7 days in advance. Scheduled maintenance shall be coordinated to have the least impact on City operations.

3 PCI Compliance

3.1 As required, the Contractor solution shall be compliant with Payment Card Industry Data Security Standard Level 1 latest version at the time of contract execution.

3.2 As the PCI Data Security Standard evolves, Contractor shall be responsible for maintaining compliance with that standard at Contractor's sole expense.

3.3 Contractor shall provide an Attestation of Compliance (AoC) as a declaration of compliance status with PCI DSS at the request of the City.

4 Data Requirements

4.1 The City shall be the exclusive owner of all data and rights to the data generated from the Systems, regardless of whether the data is direct or derived, calculated, or modeled.

4.2 Contractor shall store or archive (with the City’s approval) all transaction data generated during the term of the Agreement and retain it for at least five years after its termination.

4.3 Contractor shall deliver copies of all System data upon request of City, or its designee, and upon the termination of the Agreement in a format mutually agreed upon by both parties.

4.4 Contractor shall be responsible for providing transaction data in a format that is readable by City using commonly available commercial off-the-shelf software.

4.5 At termination of the contract, for any reason, resulting from this RFP, if the successor contract is awarded to another firm, Contractor must develop and implement a Data Conversion Plan between Contractor and the City or its designee.

5 Integration Requirements

Some required integrations are fully defined in solution specific sections of this RFP. This section includes additional or complimentary requirements. It is assumed and required by the City that the Contractor's solution, which may include one or more systems and/or third-party systems, will be integrated by the time of contract execution as would be necessary to meet the requirements for their specific service.

5.1 Contractor shall utilize open-source API's that allows for current and future integration with third parties.

5.2 Contractor shall provide real-time integration with the City's current, new, and future parking technology and data management Contractors, including, but not limited to, citation issuance/enforcement handhelds, LPR, and mobile payment. These types of integrations are considered standard in the industry.

5.3 The City recognizes that standard integrations have a certain amount of latency between systems. However, timely data exchanges are required for efficient and accurate parking operations. Latency between any two systems shall not exceed an average of 90 seconds for every 100 consecutive transactions. The latency measurement shall be defined as the moment a data request is made or data is sent to the moment the data is delivered and is viewable to any end user.

5.4 Should latency be observed in excess of 90 seconds, Contractor will work with the City to measure the latency, identify the point of default, and correct the default.

5.5 Custom integration, being nonstandard and not identified in this RFP, may be considered in the future by the City. Contractor agrees to provide the necessary development to achieve a custom integration for a mutually agreed cost and schedule to be memorialized in amendment to the resulting contract from this RFP.

5.6 Batch data transfer may be considered for certain integrations, at the sole discretion of the City.

5.7 Contractor shall provide all necessary parking-related data in a format compatible with standard industry integrations. In the event that data formats between City Contractors do not match, the City may require either Contractor to make reasonable changes to their format at no additional cost to the City.

5.8 Contractor shall operate in good faith with the City and the City's designated Contractors to implement, troubleshoot and complete necessary integration as defined by the City.

5.9 In the event that two or more Contractors cannot agree on the methodology used for any integration, the City will select the methodology most advantageous for the City.

6 Standard Integrations

ATTACHMENT 5

The following is a list of standard integrations.

6.1 Parking Meter or Pay Station Systems shall integrate with:

6.1.1 Citation Issuance, Processing and Enforcement System

6.1.2 Licenses Place Recognition System (LPR)

6.1.3 Mobile or Text to Pay Payment System

6.2 Mobile or Text to Pay Payment System shall integrate with:

6.2.1 Citation Issuance, Processing and Enforcement System

6.2.2 Licenses Place Recognition System (LPR)

6.2.3 Parking Meter or Pay Station System

6.2.4 Parking Access Revenue Control System

6.3 Parking Access Revenue Control System

6.3.1 Citation Issuance, Processing and Enforcement System

6.3.2 Licenses Place Recognition System (LPR)

6.3.3 Parking Meter or Pay Station System

6.3.4 Mobile or Text to Pay Payment System

6.3.5 Permit Management System

6.4 Citation Issuance, Processing and Enforcement Systems shall integrate with:

6.4.1 Parking Meter or Pay Station System

6.4.2 Parking Access Revenue Control System

6.4.3 Licenses Plate Recognition System

6.4.4 Mobile or Text to Pay Payment System

6.4.5 Permit Management System

6.4.6 Department of Motor Vehicles for the City's state

6.4.7 Out of State motor vehicle registries

6.4.8 Department of Justice or Police Depart for the City's state (for wanted vehicle hotlists)

6.4.9 California Franchise Tax Board (CA only)

6.4.10 Delinquent collections agency (if applicable)

6.5 Permit Management Systems shall integrate with:

6.5.1 Parking Access Revenue Control System

6.5.2 Citation Issuance, Processing and Enforcement System

6.5.3 Licenses Plate Recognition System

6.5.4 Any local databases necessary for permit processing

6.6 Licenses Plate Recognition System shall integrate with:

6.6.1 Citation Issuance, Processing and Enforcement System

6.6.2 Parking Meter or Pay Station System

6.6.3 Parking Access Revenue Control System

6.6.4 Mobile or Text to Pay Payment System

6.6.5 Permit Management System

6.6.6 Department of Justice or Police Depart for the City's state (for wanted vehicle hotlists)

7 Integration with City Systems

1. TBD
2. Integration with City systems shall be considered a standard integration.

RESOLUTION NO. _____ (2024 SERIES)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN LUIS OBISPO, CALIFORNIA, TO DESIGNATE FLASH PARKING, INC. AS THE STANDARD VENDOR FOR GATED PARKING ACCESS AND REVENUE CONTROL SYSTEM IN CITY OF SAN LUIS OBISPO OWNED AND OPERATED PARKING GARAGES

WHEREAS, on May 14, 2024, the City Council directed staff to transition to consistent pay-at-exit gated system for all parking structures; and

WHEREAS, the Downtown Parking Technology Roadmap Report prepared by Dixon Unlimited, Inc. includes a recommendation that "the City should install the same Parking Access and Revenue Control System (PARCS) technology at the other parking facilities to ensure consistency in the paid parking system;" and

WHEREAS, a standardized system will provide a cohesive and user-friendly parking experience while streamlining management and operational efficiency across all garages; and

WHEREAS, multiple, differing PARCS systems require the City to have different and more materials on hand to address emergent repair needs, additional training and management from staff, and results in communication challenges to education the public; and

WHEREAS, Flashing Parking, Inc is the approved vendor to provide a gated system for the Cultural Arts Parking District Structure; and

WHEREAS, Flash meets the City's required specifications for a PARCS system including the ability to provide:

- Gated solutions including frictionless systems, or having gates on either entry or exit only
- Pay stations, pay by app, QR code, and on foot capabilities including options to accept cash and coin.
- License Plate Recognition (LPR) integration for plate-based PARCS management to accommodate permit holders or pre-payment.
- Validations that could include special events and merchant participation throughout the City. Vendor must be able to support business-managed and/or City-managed validations.
- Reservation capabilities including identifying the operational and enforcement support demands that must be supported by the City.

- EV charging integration
- System to support a monthly e-permit system with LPR and/or Bluetooth access control.
- Pedestrian access control technology options
- Occupancy counts for garage structures
- Dashboard that allows City staff to manage and monitor equipment, as well as monitor revenue, occupancy, and validations.
- 24/7 remote customer support
- Support on any administrative, operational, or technological needs, including a single point of contact for the City.
- Integrations to support any future integrations with the City sub-systems

WHEREAS, Flash is the only vendor that meets the City required specification and provides a cloud-based system that can process transactions offline while remaining Payment Card Industry (PCI) compliant; and

WHEREAS, Flash is the only PARCS vendor that meets the City required specification and integrates with both Google and Waze.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of San Luis Obispo as follows:

SECTION 1. Flash Parking, Inc. is the standard vendor and system for gated Parking Access and Revenue Control System (PARCS) for City of San Luis Obispo owned and operated parking garages.

SECTION 2. Sole source purchases with Flash Parking, Inc. for PARCS to include, but not limited to, equipment, software, installation and ongoing services is hereby authorized pursuant to the City of San Luis Obispo Municipal Code 3.24.060(d).

Upon motion of Council Member _____, seconded by Council Member _____, and on the following roll call vote:

AYES:
NOES:
ABSENT:

The foregoing resolution was adopted this _____ day of _____ 2024.

_____
Mayor Erica A. Stewart

ATTEST:

_____
Teresa Purrington
City Clerk

APPROVED AS TO FORM:

_____
J. Christine Dietrick
City Attorney

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of San Luis Obispo, California, on _____.

_____
Teresa Purrington
City Clerk

Notice Requesting Proposals for a Parking Pay Station Solution

The City of San Luis Obispo is requesting sealed proposals for procurement of a parking pay station solution.

All firms interested in receiving further correspondence regarding this Request for Proposals (RFP) will be required to complete a free registration using BidSync (https://www.bidsync.com/bidsync-app-web/vendor/register/Login.xhtml). All proposals must be received via BidSync by the Department of Finance at or before **[DATE]** when they will be opened electronically via BidSync on the proposal end date and time.

The preferred method for bid submission is electronic via BidSync. However, if you wish to submit a paper copy, please submit it in a sealed envelope to the Department of Finance, City of San Luis Obispo, 990 Palm Street, San Luis Obispo, CA, 93401.

Project packages and additional information may be obtained at the City's BidSync website at www.BidSync.com. Please contact **Donna King, Parking Program Manager at dking@slocity.org or (805) 781-7234** with any questions.

For technical help with BidSync please contact BidSync tech support at 800-990-9339.

The City of San Luis Obispo is committed to including disabled persons in all of our services, programs and activities. Telecommunications Device for the Deaf (805) 781-7410.

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A. INTRODUCTION

This Request for Proposals (RFP) is for the procurement of a parking pay station solution to be implemented throughout the City with an emphasis on the customer service experience providing ease of use and convenience to a motorist. The selected Contractor will provide the full range of services including parking pay station equipment, a web-based pay station maintenance system, warranty and customer service support, training, reporting and maintenance tracking, and integrations with existing and future parking technology vendors.

B. SCOPE OF WORK

1. Contractor Minimum Requirements

The following is a list of minimum requirements for a Contractor:

1.1 Contractor shall have a minimum of three active and currently contracted customers located in the State of California with a minimum of 15 pay station per installation.
1.2 Contractor shall have a minimum of ten active clients located in the United States of America with a minimum of 50 pay stations.
1.3 Contractor shall have legally operated in the United States of America for a minimum of five years.
1.4 Contractor's proposal and pricing will be valid for at least 180 days from submittal.

2. Pay Station Requirements

The following is a list of key requirements for the Pay Station solution:

2.1 Pay stations must be able to store at least 10 different rate structures configurable by time of day, length of stay, and day of the week. The technology must allow for simultaneous rate structures to be deployed to different pay stations including static/fixed rates and fixed and escalating hourly rates.
2.2 Pay station shall accommodate a pre-payment option (payments made in advance of operating hours).
2.3 Pay station technology must be simple to understand and easy to use.
2.4 Motorist shall be able to complete a transaction in as few steps/screens as possible.
2.5 All technology included in the solution must be reliable, easy to maintain, and secure.
2.6 Pay station shall include a large screen to display relevant policy and parking information, rather than using signs or decals posted on the hardware. A touch screen is preferred by the City as the main interface for the motorist. Pay station shall be able to electronically display the following to the motorist with minimal effort:
    2.6.1 Rate Options
    2.6.2 Days and hours of operation
    2.6.3 Motorist instructions
2.7 Contractor must offer strong customer support 7 days a week.
2.8 All technology, equipment, and systems shall be ADA-compliant to the latest state and federal standards at the time of proposal submission, including all related specifications from Public Right-of-Way Accessibility Guidelines adopted on July 3, 2024.

2.9 All materials and components of the pay station shall be new (the most current model or version), unused, and not refurbished. The Contractor may submit the option for use of refurbished (like new) parts, in which case, the Contractor must clearly state which part(s) may optionally be selected by the City and any related cost savings.

2.10 Pay station shall have a modular design. Components shall be able to be quickly changed in the field and, to the extent possible, interchangeable between pay stations.

2.11 All Pay station electronic components, connections and wiring shall be fully weatherproofed and capable of outdoor use.

2.12 Pay station shall be weather, rust, and graffiti resistant and shall be made of stainless steel or an equivalent material.

2.13 Pay station shall have additional lighting or illumination for after dark usage and limit the effects of sun glare.

2.14 Pay station shall wirelessly communicate usage, payment status, pay station access and maintenance alert data in real-time though a vendor provided cellular plan.

2.15 Pay station shall be managed by a web-based parking management system or pay station management system (PSMS).

2.16 Pay station and PSMS shall include easy to use with customizable tariff naming and the ability to download rates onto customizable, user-defined groups of pay stations.

2.17 Pay station and all components shall be warranted to operate as proposed within a temperature range of negative 15 degrees Fahrenheit to +140 degrees Fahrenheit and under environmental conditions found in the City, including but not limited to sleet, snow, hail, grime, rain, fog, sun (including direct sunlight), and vibrations.

3. Wireless Two-Way Communications

The following is a list of requirements for Wireless Two-Way Communications:

3.1 Pay station shall be equipped with a modem, antenna, and the required software to support wireless communications.

3.2 The wireless service will be supplied by the Contractor who shall be responsible for maintaining and updating the service to ensure system uptime more than 99% during parking hours of operation.

3.3 The wireless communication service and related modem (or other equipment) shall be viable for at least six years from the date of the equipment's delivery.

3.3.1 After six years, if at no fault of the Contractor, the cellular carrier cancels the available service, Contractor will provide written notification to the City at least one year in advance of the cancellation and provide support to the City for upgrading the pay station at the lowest possible cost with a service that will be viable for at least six additional years.

3.3.2 If the communication service is cancelled prior to six years from equipment delivery, Contractor will be responsible for the upgrade of all pay stations including equipment, software, and on-site physical upgrade.

3.3.3 If at any time during the agreement communication service cancellation or degradation is determined to be the fault of the Contractor, Contractor will be responsible for the upgrade of all pay stations including equipment, software, and on-site physical upgrade.

3.4 Pay station shall have the ability to select from different cellular carriers that may be best for different locations.

3.5 Contractor will identify the likely cellular carrier(s) to be used for service and the process of determining reliability of signal coverage.
3.6 Contractor will provide options for connectivity besides cellular data; e.g., hardwired, fiber, Wi-Fi, etc.
3.7 Pay station transactions shall be communicated to the back-office system in real time to support pay-by-plate pay station enforcement queries.
3.8 In the case of communication outages (offline), the pay station shall be capable of storing transactions (as allowed by EMV standards), events and alarms for at least seven days, until communication is restored, at which point the data shall be transmitted to the back-office system.

4. Pay Station Display

The following is a list of requirements for the Pay Station Display:

4.1 Pay station shall include a touch screen display.
4.2 Display shall be easy to read under various daytime and nighttime lighting conditions, including fog, direct sunlight, and at various angles.
4.3 Display shall be backlit and will be large enough to legibly display all necessary operating status messages to users and repair personnel. The display must be energy efficient and operate in a solar-charging (or equivalent, as applicable) configuration and not cause excessive battery drain.
4.4 Display shall be scratch and impact resistant.
4.5 Current rates and hours must be able to be displayed on the graphic display and be remotely programmed.
4.6 Display shall allow for the option to inform motorist of expiration of their paid parking session.
4.7 Motorists shall be able to select their rate option prior to submitting payment for the pay station to translate the amount due and inform the motorist of the payment value.
4.8 Display shall support dynamic messaging functionality to reflect changes in pricing, regulations, display messages, format, or configurations made in the PSMS and communicate wirelessly to the pay station at least once per day. The City shall have the ability to change or adjust the graphic display independent of Contractor support and there shall be no additional costs for these types of adjustments.
4.9 Display shall have the ability to display special messaging.
4.10 Display shall clearly communicate instructions and error messages to the motorist. Where possible, alphanumeric and graphical representation is preferred. At a minimum, the display shall be capable of providing the following information:
  4.10.1 Rates
  4.10.2 Days and hours of pay station operation
  4.10.3 Related parking regulations
  4.10.4 Card Read Error - Communicating if a motorist s card was not appropriately read by the pay station.
  4.10.5 Coin Payment Unavailable - Communicating that coin payment is unavailable as a payment method.
  4.10.6 Bill Payment Unavailable - If applicable, communicating that bill payment is unavailable as a payment method.
  4.10.7 Card Payment Unavailable - Communicating that bank card payment is unavailable as a payment method.

4.10.8 Card Payment Declined - Communicating that the provided bank card was declined and to use another payment method.
4.10.9 Out of Order - Communicating that the pay station is fully out of order.
4.10.10 Receipt Unavailable - If applicable, communicating that a printed receipt is unavailable.
4.10.11 Customizable messages as dictated by the City on one or more screens.
4.10.12 Customizable messages notifying the motorist of other payment options (example text-to-pay or mobile payment) on one or more screens.

5. Pay Station User Interface

The following is a list of requirements for the Pay Station User Interface:

5.1 Any pay station buttons, touch screens or physical touch points must be vandal resistant, weatherproof, and corrosion resistant.
5.2 Any pay station buttons shall include a lighting feature so that a motorist can easily find the button in low light scenarios.
5.3 Any pay station buttons, touch screens or physical touch points shall be easily maintained and replaced as needed.

6. Payments

The following is a list of requirements regarding payments at the Pay Station:

6.1 Pay station must allow payment through multiple channels, including coin, cash, and bank card. Near Field Communication (NFC) payment (including contactless bank cards, Apple Pay and Google Pay) shall be supported. The City shall have the option to order any number of pay stations in any payment configuration.
6.2 Pay station shall accept monies through a jam-resistant coin, bill and bank card interface.
6.3 Pay station shall accept all $0.05, $0.10, $0.25 and $1 coins in active circulation.
6.4 If applicable, pay station shall accept all $1, $5, $10, and $20 bills in active circulation.
6.5 Monies must be deposited directly into, and stored in, secured containers in the pay station's vault area.
6.6 Monies must be easy to collect, being able to be completed in two minutes or less.
6.7 All collection activities should include events reported to the PSMS.
6.8 Pay station collection receipt printing shall be optional, allowing for removal of specific revenue information from the printed receipt or on-screen details.
6.9 Maintenance personnel must be able to easily clear coin or bills jams without special tools and accessing the coin or bill vault.
6.10 Pay station must allow the motorist to pay for a parking transaction at any pay station within a City defined zone.
6.11 Pay station will have the ability to allow the addition of time to existing transactions, however, the add time feature must disallow the ability to purchase time past the maximum time allowed by license plate for the parking location.
6.12 Pay stations shall be programmed to accept extended payment within applicable City policy requirements.
6.13 Pay Station shall allow for multiple motorist payment receipt options, including, but not limited to, print options, receipt by text, or no receipt.

6.14 Contractor, the pay station, the associated communications system, the backend server and gateway services shall all be compliant with Payment Card Industry Data Security Standard (PCI Level 1 certified by a Qualified Security Assessor (QSA)) as applicable.

6.15 Pay station bank acceptance system will be compliant with EMV payments.

6.16 Contractor will provide a payment gateway for processing of bank cards which is capable of processing Visa, Mastercard, American Express and Discover.

6.17 Contractor will integrate the City's current merchant processor, Chase.

7. Clock

The following is a list of requirements for the Pay Station Clock:

7.1 Pay station must have a 365-day calendar real-time clock that completes a time-sync with the server at least once every 24 hours.

7.2 Pay station will either retain the time settings during battery replacements or servicing or will accurately reset the time settings without losing prior programming within one minute of restart.

7.3 Pay station clock shall be programmable at least one year in advance for automatic daylight savings time changes and shall support any State/Federal changes to Daylight Savings Time.

7.4 Pay station clock shall be accurate to within plus or minus two seconds per day (where a day is defined as any given 24-hour period).

7.5 Time of day and date shall be available to be viewed in the maintenance screens.

8. Pay Station Power

The following is a list of requirements for the powering of the Pay Station:

8.1 Pay stations must have the capacity for power by a rechargeable (or equivalent) battery.

8.2 Pay station must include solar recharging capability.

8.3 Batteries shall be located in an easily accessible storage area inside the unit that can be changed out in less than 2 minutes and without the use of any specialized tools.

8.4 Batteries shall be able to be recharged outside of the pay station.

8.5 For environmental reasons, Nickel-Cadmium batteries shall not be used to power the pay stations.

8.6 When battery voltage falls below a minimum threshold, the pay station will generate an alert prior to the pay station going out of service.

8.7 Battery connections will be designed to resist corrosion and sustain a minimum of five years of service.

8.8 Current battery voltage for both rechargeable (solar or equivalent) and non-rechargeable batteries will be available on the display and through the PSMS.

8.9 All locally stored pay station data will be retained during battery replacement and battery failures for at least seven days.

8.10 Contractor shall guarantee a life of at least five years for a battery under normal use. Contractor shall provide training on proper battery care and maintenance to maximize the life of a battery.

8.11 Upon end of life of a battery, after 5 years, Contractor shall support the City in the replacement of the battery.

9. Pay Station Security

The following is a list of requirements for the Pay Station Security:

9.1 Pay stations shall have high security locks for all housing and cabinet doors.
9.2 Cash vault areas of the pay station shall not be accessible from the maintenance compartment and access shall require separate keys.
9.3 Vault area will be resistant to vandalism, theft, and other attacks to remove or disable the vault.
9.4 Exterior locks shall be internally or flush mounted to reduce visibility to the public.
9.5 Exterior locks shall be weather resistant to prevent rust and access of liquid inside the pay station.
9.6 Exterior locks shall be uniquely keyed for the City, whereas no other client will have the same combination.
9.7 Pay stations shall be resistant to vandalism, theft and other attacks.

10. Maintenance

The following is a list of requirements for the Pay Station Maintenance:

10.1 Pay station shall be able to be fully maintained by City staff or its designee.
10.2 The following major components shall be able to be replaced by a trained technician within 10 minutes of arrival at the pay station:
  10.2.1 Coin acceptor
  10.2.2 Bill acceptor (if applicable)
  10.2.3 Bank card reader
  10.2.4 Main board (CPU)
  10.2.5 Printer
  10.2.6 Battery
10.3 Any other pay station component shall be replaceable by a training technician within a reasonable time.
10.4 Any special tools required for maintenance that are not easily available at a standard hardware store will be provided by the Contractor.
10.5 Pay station display shall include a maintenance menu, accessible only by credentials available to a maintenance technician.
10.6 Pay station maintenance menu shall include the following capabilities:
  10.6.1 View status of the pay station
  10.6.2 View current events, alerts and/or alarm
  10.6.3 View current battery voltage
  10.6.4 Test all available components
  10.6.5 Print test receipt, if applicable
  10.6.6 Test communication to the PSMS

11. Pay Station Management System

The following is a list of requirements for the Pay Station Management System:

11.1 The Proposer shall provide and maintain a Pay Station Management System (PSMS) for the term of the contract.

11.2 PSMS shall be hosted by the Contractor, or their subcontractor. Contractor shall maintain full responsibility, contractually or otherwise, for any third-party systems or hosting provided as part of this Proposal.

11.3 PSMS must provide secure, web-based back-office system including modules for the following

11.3.1 Real time status of all pay stations

11.3.2 Real time and historical events, alert, alarm, and outage data

11.3.3 Real time and historical payment transaction data including search and look up capabilities

11.3.4 Pay station management features including rate policies, display updates and more

11.3.5 Detailed collection reporting to allow for accurate reconciliation of collected cash

11.3.6 Detail bank card processing report to allow for accurate reconciliation of bank card transactions

11.3.7 Standard and customized reporting capabilities including the ability to create custom templates for future use.

11.4 PSMS shall allow the City to track events, alerts and alerts from initiation at the pay station to the closing of such items once repaired in the field.

11.5 PSMS shall provide the ability to identify pay stations by descriptions, address, and zones. Mapping functionality is a desirable feature.

11.6 PSMS shall easily indicate pay station status and send configuration events, alerts and alarms to designated personnel via email and text.

11.7 PSMS shall provide real-time verification of parking spaces payment status for enforcement purposes.

11.8 PSMS shall allow the remote download of all rate changes, display changes, receipt layout changes, other user interface changes and operating system changes and upgrades with no upcharge for wireless data usage.

11.9 PSMS and pay station shall include the ability to program and display different rate schedules by time of day, length of stay, and day of the week, including dynamic and progressive rate structures for peak occupancy periods.

11.10 Contractor rate schedules shall be integrated or replicated with other City parking payment systems, such as mobile payment, if applicable, to ensure consistent and accurate rate schedules.

11.11 City staff shall have the ability to program rates independent of Contractor support with no additional costs associated with these changes.

11.12 PSMS shall include a customizable dashboard that allows the City to display relevant analytics associated with the paid parking program including occupancy data, revenue, and equipment performance.

11.13 Contract shall offer the ability to integrate data from third-party systems into the PSMS allowing for a centralized reporting system and inclusion of the data in the dashboard display. Integrations will include, at a minimum, other paid parking technologies for both on and off-street operations.

11.14 PSMS shall allow for reports to be exported as Excel, CSVs and/or PDF files.

11.15 PSMS shall schedule any batch style reporting to occur on demand or by 5am daily, if applicable.

12. Warrant and Contract Support

The following is a list of requirements for the Pay Station Solution Warranty and Support:

12.1 Contractor shall include a minimum of a one-year hardware warranty.

12.2 Contractor shall provide a warranty on all software and system solutions for the contract term.

12.3 Hardware warranty shall be effective on the same day for all pay stations included in the initial order, becoming effective on the last day of installation of the pay station implementation or 90 days from delivery of all pay stations, whichever comes first.

12.4 For any subsequent orders, the hardware warranty shall be effective on the date of delivery.

12.5 Contractor shall provide ongoing technical support services through the term of the contract for regular operations and maintenance services, including a toll-free phone number and online help (Help Desk). Support services shall be available from 8am to 5pm Pacific Time Zone, seven days per week (excluding holidays).

12.6 Contractor's Help Desk and related staff shall be located in the United States of America.

12.7 Contractor shall provide 24 hours per day, 7 days per week monitoring and services for outages or issues that impact the entire system.

12.8 Any requests for support that cannot be handled immediately by the Help Desk shall be acknowledged by the Contractor within one business day and updated on a regular basis.

12.9 Contractor shall utilize a ticket tracking system to open, track and close support requests from the City.

12.10 The system must be capable of providing remote off-site diagnosis and support via wireless access. The system must be capable of remote software upgrades via wireless access.

12.11 Contractor shall provide regular and ongoing technical bulletins that identify product notifications, technology updates, lessons learned, and/or system performance that details issues, changes, improvements and upgrades.

12.12 Requests for Quotations for parts, equipment or service from the City must be fulfilled within three business days.

12.13 Return Merchandise Authorization (RMA) requests from the City must be addressed within three calendar days. Upon return of equipment to the Contractor, the RMA must be processed and return equipment shipped within 14 days and/or a status update as to the expected time of arrival (ETA).

12.14 Shipment of the RMA to the Contractor will be at the cost of the City. Shipment of the return equipment will be at the cost of the Contractor.

12.15 RMA shipments to the City must include advance email delivery notification, delivery date/time and the associated tracking number to the designated City point of contact. Deliveries to the City shall only occur within regular business hours.

13. Project Management

The following is a list of requirements regarding Project Management for solution delivery:

13.1 Contractor shall assign a Project Manager for the duration of the planning, implementation, delivery and installation portion of the contract who will be responsible for, including but not limited to:

13.1.1 Project oversight and delivery of the system.

13.1.2 Being a single point of contact for the City and providing for the management, implementation, and on-going trouble shooting of the System during its installation.

13.1.3 Coordinating efforts with the City and any subcontractors.

13.1.4 Being available as required for onsite work and otherwise available to the City during regular business hours via email, phone or video conference to respond to City needs, questions and or issues.

13.1.5 Developing and maintaining, in consultation with the City, a detailed implementation and project plan for the System.

13.2 Contractor's Project Manager shall be experienced in the Contractor's products and parking operations, able to provide guidance and suggestions to the City on best practices.

13.3 Contractor shall provide a design review process for customizable and configurable portions of the solution. The City shall sign off on the design review documentation before production of these items.

13.4 Contractor shall test all hardware, software and systems prior to delivery to the City.

13.5 Contractor shall develop a training plan for review and approval by the City.

14. Training

The following is a list of requirements for Training:

14.1 Contractor shall provide a training plan that includes, but is not limited to, installation, troubleshooting, repairs, preventative maintenance, revenue reconciliation, and reporting. The training plan shall include:

14.1.1 Types of training course with a target audience

14.1.2 Description of course

14.1.3 Length of course

14.1.4 Method of training (video conference, in person, etc.)

14.1.5 Prerequisites for the training course

14.2 Contractor training must include, at a minimum, the following City personnel: operations, maintenance, customer support, administration, and finance.

14.3 Training will occur in person or via video conference as is most appropriate for the topic. At a minimum, Contractor will provide at least two days of onsite/in person training for operations and maintenance.

14.4 Training will be provided by qualified experts from the Contractor.

14.5 The City may request additional training sessions at reasonable intervals and lengths via video conference for no extra cost for the contract term.

14.6 The City may request additional training sessions in person. The Contractor will provide a quote for services within one week, and perform that training within four weeks, of the City's request.

14.7 Contractor will provide necessary training to the City for any new, upgraded or additional functionality provided during the term of the contract.

14.8 Contractor shall supply, and keep current, digital copies of all operating, training, maintenance, repair and user's manuals, which include detailed instructions for pay station and system usage.

15. Integrations

The following is a list of requirements for Pay Station Solution Integration:

15.1 Contractor shall provide real-time integration with the City's current, new, and future parking technology and data management Contractors, including, but not limited to, citation issuance/enforcement handhelds, LPR, and mobile payment.

15.2 The current required integrations include:

15.2.1 Enforcement - TBD

15.2.2 LPR - Genetec/Route 1

15.2.3 Mobile payment - TBD

15.3 Contractor shall be able to work with outside Contractors to perform data migration, if required by the City.

15.4 Contractor will review and comply with the additional data, system and security requirement in Attachment A.

16. Installation

The following is a list of requirements for installation of the Pay Station:

16.1 Contractor will be responsible for pay station installation at specific locations identified by the City. The Contractor's price will include all costs associated with the activity.

16.2 The City will be responsible for a storage location within the City limits for pay station delivery and provide reasonable access to the facility Monday through Friday during business hours.

16.3 The City will be responsible for removing an existing pay station or meter infrastructure prior the installation by the Contractor.

16.4 Contractor will provide one in-person, onsite walk-through where the Contractor's Project Manager and a City representative will review each installation site. The Contractor will issue a report listing the details (address, GPS coordinates, etc.) and status of each location with two weeks of the site visit for City review and approval.

16.5 Contractor will provide all personnel, tools, equipment, unpacking, assembly, programming, or otherwise as required for installation.

16.6 Contractor will provide pay station transportation between the storage facility and the installation locations.

16.7 The City will be responsible for preparing each site for installation prior to Contractor kicking off installation, including any concrete remediation.

16.8 The Contractor will provide no less than two technicians working together to complete the installations at a rate of no less than 5 to 10 pay stations per day.

16.9 Upon completion, Contractor staff will thoroughly test each pay station and provide documentation of the successful installation and confirmation that each pay station is operating to specification. Review and confirmation of each report by the City will result in acceptance of said pay station.

17. Other Services (Optional)

The Contractors should consider the following requirements and address them in their proposal as desired:

17.1 With the implementation of new paid parking technology public awareness and education is important to any successful parking management program. Contractor shall describe any public outreach/education campaign support that will be included with your solution at no additional cost to the City. Contractor shall provide examples of prior successful implementations, including sample images, emphasizing similar installations and education introducing pay by plate pay stations and new paid parking policies.

17.2 The City may consider an option for a merchant validation program to enhance the motorist experience. Contractor shall describe how the proposed parking technology solution would support a merchant validation program and identify any equipment required and additional costs or fees.

17.3 The City is interested in innovation and value-added services. Contractors should describe any enhanced services and features that are available to the City currently or in the near future and how these services and features would be integrated to ensure motorist convenience. All associated pricing for any proposed or suggested feature must be identified.

C. PROJECT SCHEDULE

Preliminary Schedule	Tasks
TBD	• Proposals Due
TBD	• Vendor Selected
TBD	• Contract Commences
TBD	• Installation

D. GENERAL TERMS AND CONDITIONS

PROPOSAL REQUIREMENTS

1. **Requirement to Meet All Provisions.** Each individual or firm submitting a proposal (bidder) shall meet all the terms, and conditions of the Request for Proposals (RFP) project package. By virtue of its proposal submittal, the bidder acknowledges agreement with and acceptance of all provisions of the RFP specifications.

2. **Proposal Submittal**. Each proposal must be submitted on the form(s) provided in the specifications and accompanied by any other required submittals or supplemental materials. Proposal documents shall be submitted electronically via BidSync. However, if you can't submit electronically in BidSync., please email a copy to the contacts listed in the RFP package, if you can't email it, please send a copy in a sealed envelope to the Department of Finance, City of San Luis Obispo, 990 Palm Street, San Luis Obispo, CA, 93401. To guard against premature opening, the proposal should be clearly labeled with the proposal title, project number, name of bidder, and date and time of proposal opening. No FAX submittals will be accepted.

3. **Insurance Certificate**. Each proposal must include a certificate of insurance showing:

   a. The insurance carrier and its A.M. Best rating.
   b. Scope of coverage and limits.
   c. Deductibles and self-insured retention.

The purpose of this submittal is to generally assess the adequacy of the bidder's insurance coverage during proposal evaluation; as discussed under paragraph 12 below, endorsements are not required until contract award. The City's insurance requirements are detailed in Exhibit C to the Agreement (Exhibit A to the RFP)

4. **Proposal Quotes and Unit Price Extension**. The extension of unit prices for the quantities indicated and the lump sum prices quoted by the bidder must be entered in figures in the spaces provided on the Proposal Submittal Form(s). Any lump sum bid shall be stated in figures. The Proposal Submittal Form(s) must be totally completed. If the unit price and the total amount stated by any bidder for any item are not in agreement, the unit price alone will be considered as representing the bidder's intention and the proposal total will be corrected to conform to the specified unit price.

5. **Proposal Withdrawal and Opening**. A bidder may withdraw its proposal, without prejudice prior to the time specified for the proposal opening, by submitting a written request to the Director of Finance for its withdrawal, in which event the proposal will be returned to the bidder unopened. No proposal received after the time specified or at any place other than that stated in the "Notice Inviting Bids/Requesting Proposals" will be considered. All proposals will be opened and declared publicly. Bidders or their representatives are invited to be present at the opening of the proposals.

6. **Submittal of One Proposal Only**. No individual or business entity of any kind shall be allowed to make or file, or to be interested as the primary submitter in more than one proposal, except an alternative proposal when specifically requested; however, an individual or business entity that has submitted a sub-proposal to a bidder submitting a proposal, or who has quoted prices on materials to such bidder, is not thereby disqualified from submitting a sub-proposal or from quoting prices to other bidders submitting proposals.

7. **Communications.** All timely requests for information submitted in writing will receive a written response from the City. Telephone communications with City staff are not encouraged but will be permitted. However, any such oral communication shall not be binding on the City.

CONTRACT AWARD AND EXECUTION

8. **Proposal Retention and Award**. The City reserves the right to retain all proposals for a period of 60 days for examination and comparison. The City also reserves the right to waive non-substantial irregularities in any proposal, to reject any or all proposals, to reject or delete one part of a proposal and accept the other, except to the extent that proposals are qualified by specific limitations. See the "special terms and conditions" in Section C of these specifications for proposal evaluation and contract award criteria.

9. **Competency and Responsibility of Bidder.** The City reserves full discretion to determine the competence and responsibility, professionally and/or financially, of bidders. Bidders will provide, in a timely manner, all information that the City deems necessary to make such a decision.

10. **Contract Requirement.** The bidder to whom award is made (Contractor) shall execute a written contract with the City within ten (10) calendar days after notice of the award. The contract shall be made in the form adopted by the City and incorporated in these specifications.

CONTRACT PERFORMANCE

11. The City's contract terms and conditions that Contractor will be expected to execute and be bound by are attached hereto as Exhibit A.

E. SPECIAL TERMS AND CONDITIONS

1. **Contract Award.** The contract will be awarded to the most qualified bidder that, in the City's sole discretion in accordance with the Proposal Evaluation and Selection criteria set forth herein (if applicable), provides the best proposal.

2. **Sales Tax Reimbursement.**
For sales occurring within the City of San Luis Obispo, the City receives sales tax revenues. Therefore, for bids from retail firms located in the City at the time of proposal closing for which sales tax is allocated to the City, 1% of the taxable amount of the bid will be deducted from the proposal by the City in calculating and determining the most qualified lowest cost bidder.

3. **Labor Actions.**
In the event that the successful proposer is experiencing a labor action at the time of contract award (or if its suppliers or subcontractors are experiencing such a labor action), the City reserves the right to declare said proposer is no longer the most qualified, responsive proposer and to accept the next acceptable proposal from a proposer that is not experiencing a labor action, and to declare it to be the most qualified, responsive proposer.

4. **Failure to Accept Contract.**
The following will occur if the proposer to whom the award is made (Contractor) fails to enter into the contract: the award will be annulled; any bid security will be forfeited in accordance with the special terms and conditions if a proposer's bond or security is required; and an award may be made to the next lowest responsible, responsive proposer who shall fulfill every stipulation as if it were the party to whom the first award was made.

5. **Contract Term.**
The supplies or services identified in this specification will be used by the City for five years. The prices quoted for these items must be valid for the entire period indicated above unless otherwise conditioned by the proposer in its proposal.

6. **Contract Extension.**
The term of the contract may be extended by mutual consent for an additional one-year, and annually thereafter, for a total of eight years.

7. **Supplemental Purchases**

Supplemental purchases may be made from the successful proposer during the contract term in addition to the items listed in the Detail Proposal Submittal Form. For these supplemental purchases, the proposer shall not offer prices to the City in excess of the amounts offered to other similar customers for the same item. If the proposer is willing to offer the City a standard discount on all supplemental purchases from its generally prevailing or published price structure during the contract term, this offer and the amount of discount on a percentage basis should be provided with the proposal submittal.

8. **Contractor Invoices.**
The Contractor may deliver either a monthly invoice to the City with attached copies of detail invoices as supporting detail, or in one lump-sum upon completion.

9 **Non-Exclusive Contract.** The City reserves the right to purchase the items listed in the Detail Proposal Submittal Form, as well as any supplemental items, from other vendors during the contract term.

10. **Unrestrictive Brand Names**. Any manufacturer's names, trade names, brand names or catalog numbers used in the specifications are for the purpose of describing and establishing general quality levels. Such references are not intended to be restrictive. Proposals will be considered for any brand that meets or exceeds the quality of the specifications given for any item. In the event an alternate brand name is proposed, supplemental documentation shall be provided demonstrating that the alternate brand name meets or exceeds the requirements specified herein. The burden of proof as to the suitability of any proposed alternatives is upon the proposer, and the City shall be the sole judge in making this determination.

11. **Delivery.** Prices quoted for all supplies or equipment to be provided under the terms and conditions of this RFP package shall include delivery charges, to be delivered F.O.B. San Luis Obispo by the successful proposer and received by the City within 90 days after authorization to proceed by the City.

12. **Start and Completion of Work.** Work on this project shall begin immediately after contract execution and shall be completed within 90 calendar days thereafter, unless otherwise negotiated with City by mutual agreement.

13. **Change in Work.** The City reserves the right to change quantities of any item after contract award. If the total quantity of any changed item varies by 25% or less, there shall be no change in the agreed upon unit price for that item. Unit pricing for any quantity changes per item in excess of 25% shall be subject to negotiation with the Contractor.

14. **Submittal of References.** Each proposer shall submit a statement of qualifications and references on the form provided in the RFP package.

15. **Statement of Contract Disqualifications.** Each proposer shall submit a statement regarding any past governmental agency bidding or contract disqualifications on the form provided in the RFP package.

16. **Liquidated Damages**

The following are the proposed liquidated damages that would be incorporated into any final agreement and should be considered in Contractor's proposal. While it is not the intention of the City to seek a punitive relationship, we are seeking an integrated solution that performs to the standards described throughout the Contractor's proposal and in line with the City's requirements.

Both parties will agree that the annual liquidated damages shall be limited to the amount paid or due to Contractor by the City during a one-year period except in the initial 12-month period of this Agreement, where liquidated damages shall be limited to 30% of the amount paid or due to Contractor by the City during the initial 12-month period of this Agreement. The Contractor agrees to pay (or provide invoice credit) these amounts to the City as set forth:

a. PSMS or Bank Card Processing Failure: Any failure of the PSMS or bank card processing solution provided by the Contractor that prevents the processing of bank cards and the collection of related revenue shall result in damages of $500 per 24-hour period. City shall provide Contractor with 12-hour notice to respond and repair the failure prior to being entitled to this liquidated damage.
b. Systemic Hardware Issue: Any hardware failure that affects 25% (or 40% if less than 10 pay station are installed) or more of the City's pay station fleet at one time which causes in the inability to collect any one type of monies shall result in damages of $25 per 24-hour period per pay station. Upon City notice to the Contractor, Contractor will have 10 calendar days to correct the hardware failure, up to and including specific component replacement, prior to the City being entitled to this liquidated damage. City will provide reasonable access and support to the Contractor in correcting the failure.
c. Systemic Software Issue: Any software failure that affects 25% (or 40% if less than 10 pay station are installed) or more of the City's pay station fleet at one time which causes in the inability to collect any one type of monies or charge motorists the correct amount shall result in damages of $25 per 24-hour period per pay station. Upon City notice to the Contractor, Contractor will have one business day (24 hours) to correct the failure prior to City being entitled to this liquidated damage. City will provide reasonable access and support to the Contractor in correcting the failure.
d. PCI Data Security Failure: Failure of Contractor to maintain Payment Card Industry (PCI) Data Security Standard Certification, shall result in damages of $10,000 on the twenty-eight (28th) calendar day following non-compliance (first assessment). The twenty-eighth (28th) calendar day following the first assessment and every twenty-eight (28) calendar day thereafter shall constitute a subsequent assessment. On each additional twenty-eighth (28th) calendar day following the first assessment and any subsequent assessments, the City shall be entitled to liquidated damages of $25,000 until the failure is cured. Damages during subsequent assessments shall be prorated by day.
e. Cash Reconciliation Accuracy: Any failure of the Contractor's solution that results in a 3% or greater variation between the actual collected funds versus the pay station/PSMS reported funds shall result in damages of $25 per 24-hour period per pay station. Upon City notice to the Contractor, Contractor will have seven business days to correct the failure, if determined that Contractor is at fault, prior to City being entitled to this liquidated damage. City will provide reasonable access and support to the Contractor in identifying and correcting the failure.
f. RMA Fulfillment: Any failure to process and ship an RMA or provide notification to the City with reasonable explanation for delay, within 14 days of the receipt of the shipment from the City shall results in damages of $100 per day until the return RMA shipment is received by the

City. The first occurrence of this failure will result in a written warning by the City with no damages applied. Any subsequent failures will incur this liquated damage without notice being required by the City.

D. PROPOSAL CONTENT

1. **Proposal Content**. Your proposal must include the following information:

Submittal Forms

a. Proposal submittal summary.
b. Certificate of insurance.
c. References from at least three firms for whom you have provided similar services in the United States of America.

Qualifications

d. Experience of your firm and those of sub-consultants in performing work and projects relevant to the Scope of Services outlined and described in the request.
e. Resumes of the individuals who would be assigned to this project, including any sub-consultants, with their corollary experience highlighted and specific roles in this project clearly described.
f. Standard hourly billing rates for the assigned staff, including any sub-consultants.
g. Statement and explanation of any instances where your firm or sub-consultant has been removed from a project or disqualified from proposing on a project.
h. List of three active customers located in the State of California listing the client, services provided, and quantity of hardware (minimum 15).
i. Describe contractor's experience and methodology regarding integrations with parking and mobility related third parties.

Work Program

j. Description of your approach to completing the work listed in the scope of work.
k. Detailed schedule by task and sub-task for completing the work.
l. Estimated hours for your staff in performing each phase and task of the work, including sub-consultants, so we can clearly see who will be doing what work, and how much time it will take.
m. Detailed budget by task and sub-task for completing the work.
n. Services or data to be provided by the City.
o. Services and deliverables provided by the Consultant(s).
p. Any other information that would assist us in making this contract award decision.
q. Description of assumptions critical to development of the response which may impact cost or scope.
r. Technical Compliance Matrix (TCM) (Attachment B)
s. Pricing Workbook (Attachment C)

Requested Changes to Terms and Conditions

t. ***The City desires to begin work soon after selecting the preferred Contractor and expects the Contractor to execute the City's contract and all the terms therein, as set forth in Exhibit A.*** To expedite the contracting process, each submittal shall include requested redlined changes to terms and conditions, if necessary. Please be advised that Contractor's requested changes to the City's terms and conditions will be considered by City staff when scoring and determining the competency and responsibility of the proposer.

Proposal Length

u. Proposal length should only be as long as required to be responsive to the RFP, including attachments and supplemental materials.

v. Proposals should not exceed 30 pages, including attachments and supplemental materials. City required forms, pricing forms and the Technical Compliance Matrix will be considered outside this maximum.

2. **Proposal Evaluation and Selection**. Proposals will be evaluated by a review committee and evaluated on the following criteria:

a. Understanding of the work required by the City.
b. Quality, clarity and responsiveness of the proposal.
c. Demonstrated competence and professional qualifications necessary for successfully performing the work required by the City.
d. Recent team experience in successfully performing similar services.
e. Creativity of the proposed approach in completing the work.
f. Value
g. Writing skills.
h. References.
i. Background and experience of the specific individuals managing and assigned to this project.
j. Information about how your company mitigates the environmental impact of its services, such as greenhouse gas emissions, amount of waste generated, water and energy use, or other areas related to your products and services.

As reflected above, contract award will not be based solely on price, but on a combination of factors as determined to be in the best interest of the City. After evaluating the proposals and discussing them further with the finalists or the tentatively selected contractor, the City reserves the right to further negotiate the proposed work and/or method and amount of compensation.

3. **Proposal Review and Award Schedule.** The following is an outline of the anticipated schedule for proposal review and contract award:

a.	Issue RFP	[date]
b.	Receive proposals	[date]
c.	Complete proposal evaluations	[date]
d.	Conduct finalist interviews and finalize recommendation	[date]

e.	Execute contract	[date]
f.	Start work	[date]

4. **Ownership of Materials.** All original drawings, plan documents and other materials prepared by or in possession of the Contractor as part of the work or services under these specifications shall become the permanent property of the City and shall be delivered to the City upon demand.

5. **Release of Reports and Information.** Any reports, information, data, or other material given to, prepared by or assembled by the Contractor as part of the work or services under these specifications shall be the property of the City and shall not be made available to any individual or organization by the Contractor without the prior written approval of the City.

6. **Copies of Reports and Information.** If the City requests additional copies of reports, drawings, specifications, or any other material in addition to what the Contractor is required to furnish in limited quantities as part of the work or services under these specifications, the Contractor shall provide such additional copies as are requested, and City shall compensate the Contractor for the costs of duplicating of such copies at the Contractor's direct expense.

7. **Required Deliverable Products.** The Contractor will be required to provide:

   a. One electronic submission - digital-ready original .pdf of all final documents. If you wish to file a paper copy, please submit in sealed envelope to the address provided in the RFP.

   b. Corresponding computer files compatible with the following programs whenever possible unless otherwise directed by the project manager:

Word Processing:	MS Word
Spreadsheets:	MS Excel
Desktop Publishing:	InDesign
Virtual Models:	Sketch Up
Digital Maps:	Geodatabase shape files in State Plan Coordinate System as specified by City GIS staff

   c. City staff will review any documents or materials provided by the Contractor and, where necessary, the Contractor will be required to respond to staff comments and make such changes as deemed appropriate.

ALTERNATIVE PROPOSALS

8. **Alternative Proposals**. The proposer may submit an alternative proposal (or proposals) that it believes will also meet the City's project objectives but in a different way. In this case, the proposer must provide an analysis of the advantages and disadvantages of each of the alternative and discuss under what circumstances the City would prefer one alternative to the other(s).

9. **Attendance at Meetings and Hearings**. As part of the workscope and included in the contract price is attendance by the Contractor at up to [number] public meetings to present and discuss its findings and recommendations. Contractor shall attend as many "working" meetings with staff

as necessary in performing work-scope tasks.

10. **Accuracy of Specifications**. The specifications for this project are believed by the City to be accurate and to contain no affirmative misrepresentation or any concealment of fact. Bidders are cautioned to undertake an independent analysis of any test results in the specifications, as City does not guaranty the accuracy of its interpretation of test results contained in the specifications package. In preparing its proposal, the bidder and all subcontractors named in its proposal shall bear sole responsibility for proposal preparation errors resulting from any misstatements or omissions in the plans and specifications that could easily have been ascertained by examining either the project site or accurate test data in the City's possession. Although the effect of ambiguities or defects in the plans and specifications will be as determined by law, any patent ambiguity or defect shall give rise to a duty of bidder to inquire prior to proposal submittal. Failure to so inquire shall cause any such ambiguity or defect to be construed against the bidder. An ambiguity or defect shall be considered patent if it is of such a nature that the bidder, assuming reasonable skill, ability and diligence on its part, knew or should have known of the existence of the ambiguity or defect. Furthermore, failure of the bidder or subcontractors to notify City in writing of specification or plan defects or ambiguities prior to proposal submittal shall waive any right to assert said defects or ambiguities subsequent to submittal of the proposal.

    To the extent that these specifications constitute performance specifications, the City shall not be liable for costs incurred by the successful bidder to achieve the project's objective or standard beyond the amounts provided there for in the proposal.

    In the event that, after awarding the contract, any dispute arises as a result of any actual or alleged ambiguity or defect in the plans and/or specifications, or any other matter whatsoever, Contractor shall immediately notify the City in writing, and the Contractor and all subcontractors shall continue to perform, irrespective of whether or not the ambiguity or defect is major, material, minor or trivial, and irrespective of whether or not a change order, time extension, or additional compensation has been granted by City. Failure to provide the hereinbefore described written notice within one (1) working day of contractor's becoming aware of the facts giving rise to the dispute shall constitute a waiver of the right to assert the causative role of the defect or ambiguity in the plans or specifications concerning the dispute.

SECTION I: PROPOSAL SUBMITTAL FORM - *SAMPLE*

The undersigned declares that she or he:

- Has carefully examined [_____], which is hereby made a part of this proposal.
- Is thoroughly familiar with its contents.
- Is authorized to represent the proposing firm.
- Agrees to perform the work as set forth in this proposal.

q Certificate of insurance attached; insurance company's A.M. Best rating: _____.

Firm Name and Address

Contact	*Phone*

Signature of Authorized Representative

	Date

REFERENCES

Number of years engaged in providing the services included within the scope of the specifications under the present business name:_____.

Describe fully the last three contracts performed by your firm that demonstrate your ability to provide the services included with the scope of the specifications. Attach additional pages if required. The City reserves the right to contact each of the references listed for additional information regarding your firm's qualifications.

Reference No. 1:

Agency Name	
Contact Name	
Telephone & Email	
Street Address	
City, State, Zip Code	
Description of services provided including contract amount, when provided and project outcome	

Reference No. 2:

Agency Name	
Contact Name	
Telephone & Email	
Street Address	
City, State, Zip Code	
Description of services provided including contract amount, when provided and project outcome	

Reference No. 3

Agency Name	
Contact Name	
Telephone & Email	
Street Address	
City, State, Zip Code	
Description of services provided including contract amount, when provided and project outcome	

STATEMENT OF PAST CONTRACT DISQUALIFICATIONS

The proposer shall state whether it or any of its officers or employees who have a proprietary interest in it, has ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of the violation of law, a safety regulation, or for any other reason, including but not limited to financial difficulties, project delays, or disputes regarding work or product quality, and if so to explain the circumstances.

- ***Do you have any disqualification as described in the above paragraph to declare?***

  Yes q No q

- ***If yes, explain the circumstances.***

Executed on _____ at _____ under penalty of perjury of the laws of the State of California, that the foregoing is true and correct.

_____
Signature of Authorized Proposer Representative

CITY OF SAN LUIS OBISPO
PROFESSIONAL SERVICES AGREEMENT

This agreement (Agreement) is made and entered into in the City of San Luis Obispo on [DATE], by and between the City of San Luis Obispo, a municipal corporation and charter city (City) and [FILL] hereinafter referred to as Contractor (collectively referred to as the "Parties").

WITNESSETH:

WHEREAS, on [date], City requested proposals for Parking Pay Stations (the "Project"); and

WHEREAS, the City wants to procure a parking pay station solution to be implemented throughout the City with an emphasis on the customer service experience providing ease of use and convenience to a motorist. (the "Services"); and

WHEREAS, Contractor is qualified to perform this type of Services and has submitted a written proposal to do so, which has been accepted by City; and

NOW, THEREFORE, in consideration of their mutual promises, obligations, and covenants hereinafter contained, the Parties hereto agree as follows:

1. **TERM.** The term of this Agreement shall be five (5) years from the date this Agreement is made and entered, as first written above. Unless notice of termination is made in writing by either party to the other no less than sixty (60) days prior to the end of contract term, this Agreement shall automatically renew for additional one (1) year terms for a maximum of ten (10) years from the date of this Agreement.
2. **INCORPORATION BY REFERENCE.** Notice Requesting Proposals for a Parking Pay Station Solution and Contractor's proposal dated [date] are hereby incorporated in and made a part of this Agreement, attached as Exhibit A. The City's insurance requirements are hereby incorporated in and made part of this Agreement, attached as Exhibit B. To the extent that there are any conflicts between the Contractor's fees and scope of work and the City's terms and conditions as stated herein, the City's terms and conditions shall prevail unless specifically agreed otherwise in writing signed by both Parties.
3. **CITY'S OBLIGATIONS.** For providing services as specified in this Agreement, and upon receipt of an invoice, City will pay and Contractor shall receive compensation as set forth in Consultant's proposal and pursuant to the Payment Terms set forth in Exhibit B.

4. **CONTRACTOR'S OBLIGATIONS.** For and in consideration of the payments and agreements herein before mentioned to be made and performed by City, Contractor agrees with City to do everything required by this Agreement including that work as set forth in Exhibit A.
5. **PAYMENT OF TAXES.** The contract prices shall include full compensation for all taxes that Contractor is required to pay.
6. **LICENSES AND PERMITS**. At all times during the term of this Agreement, Contractor shall have in full force and effect, all licenses required of it by law for the performance of the Services described in this Agreement. The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary under this Agreement.
7. **COMPLIANCE WITH LAW.** The Contractor shall keep itself informed of and shall observe and comply with all applicable State and Federal laws and regulations, and county and City of San Luis Obispo ordinances, regulations and adopted codes, which in any manner affect those employed by Contractor or in any way affect the performance of the Services pursuant to this Agreement. The City, and its officers and employees, shall not be liable at law or in equity occasioned by failure of the Contractor to comply with this Section. Failure to comply with local ordinances may result in monetary fines and cancellation of this Agreement.
8. **COMPLIANCE WITH INDUSTRY STANDARD.** Contractor shall provide services acceptable to City in strict conformance with the Agreement. Contractor shall also provide in accordance with the standards customarily called for under this Agreement using the degree of care and skill ordinarily exercised by reputable providers of such services. Where approval by the City, the City Manager, the Mayor, or other representative of City is required, it is understood to be general approval only and does not relieve Contractor of responsibility for complying with all applicable laws, codes, policies, regulations, and good business practices.
9. **INDEPENDENT CONTRACTOR**.
    a. Contractor is and shall at all times remain as to the City a wholly independent contractor. The personnel performing the Services under this Agreement on behalf of Contractor shall at all times be under Contractor's exclusive direction and control. Neither City nor any of its officers, employees, or agents shall have control over the conduct of Contractor or any of Contractor's officers, employees, or agents, except as set forth in this Agreement. Contractor shall not at any time or in any manner represent that it or any of its officers, employees, or agents are in any manner officers, employees, or agents of the City. Contractor shall not incur or have the power to incur any debt, obligation, or liability whatsoever against City, or bind City in any manner.
    b. No employee benefits shall be available to Contractor in connection with the performance of this Agreement. Except for the fees paid to Contractor as provided in the Agreement, City shall not pay salaries, wages, or other compensation to Contractor for performing the Services hereunder for City. City shall not be liable for compensation or indemnification to Contractor for injury or sickness arising out of performing services hereunder.
    c. Contractor/Contractor's duties and services under this agreement shall not include preparing or assisting the public entity with any portion of the public entity's

preparation of a request for proposals, request for qualifications, or any other solicitation regarding a subsequent or additional contract with the public entity. The public entity entering this agreement shall at all times retain responsibility for public contracting, including with respect to any subsequent phase of this project. Contractor/Contractor's participation in the planning, discussions, or drawing of project plans or specifications shall be limited to conceptual, preliminary, or initial plans or specifications. Contractor/Contractor shall cooperate with the public entity to ensure that all bidders for a subsequent contract on any subsequent phase of this project have access to the same information, including all conceptual, preliminary, or initial plans or specifications prepared by contractor pursuant to this agreement."

10. **PRESERVATION OF CITY PROPERTY**. The Contractor shall provide and install suitable safeguards, approved by the City, to protect City property from injury or damage. If City property is injured or damaged resulting from Contractor's operations, it shall be replaced or restored at Contractor's expense. The City's facilities shall be replaced or restored to a condition as good as when the Contractor began the work.
11. **IMMIGRATION ACT OF 1986**. The Contractor warrants on behalf of itself and all subcontractors engaged for the performance of the Services that only persons authorized to work in the United States pursuant to the Immigration Reform and Control Act of 1986 and other applicable laws shall be employed in the performance of the Services hereunder.
12. **NON-DISCRIMINATION.** In the performance of the Services, the Contractor agrees that it will not engage in, nor permit such sub-Contractors as it may employ, to engage in discrimination in employment of persons because of age, race, color, sex, national origin or ancestry, sexual orientation, or religion of such persons.
13. **WORK SCHEDULED/TIME OF COMPLETION.**
    City and Contractor agree that time is of the essence in this Agreement. City and Contractor further agree that Contractor's failure to perform on or at the times set forth in this Agreement will damage and injure City, but the extent of such damage and injury is difficult or speculative to ascertain. Consequently, City and Contractor agree that any failure to perform by Contractor at or within the times set forth herein shall result in liquidated damages for each and every day such performance is late or delayed. City and Contractor agree that such sum is reasonable and fair. Furthermore, City and Contractor agree that this Agreement is subject to Government Code Section 53069.85 and that each party hereto is familiar with and understands the obligations of said Section of the Government Code.
14. **PAYMENT TERMS**. The City's payment terms are 30 days from the receipt of an original invoice and acceptance by the City of the materials, supplies, equipment, or services provided by the Contractor (Net 30). Contractor will submit invoices monthly for actual services performed. Invoices shall be submitted on or about the first business day of each month, or as soon thereafter as practical, for services provided in the previous month. Final June invoices shall be received no later than the 5th business day of July to meet City fiscal year-end deadlines. Payment shall be made within thirty (30) days of receipt of each invoice as to all non-disputed fees. If the City disputes any of Contractor's fees it shall give written notice to Contractor within thirty (30) days of receipt of an invoice of any disputed fees set

forth on the invoice. Any final payment under this Agreement shall be made within forty-five (45) days of receipt of an invoice, therefore.

15. **INSPECTION.** City shall at all times have the right to inspect the work being done under this Agreement and Contractor shall furnish City with every reasonable opportunity and assistance required for City to ascertain that the Services of the Contractor are being performed in accordance with the requirements and intentions of this Agreement. All work done, and all materials furnished, if any, shall be subject to the City's inspection and approval. The inspection of such work shall not relieve Contractor of any of its obligations under the Agreement.
16. **RELEASE OF INFORMATION.**
    a. All information gained by Contractor in performance of this Agreement shall be considered confidential and shall not be released by Contractor without City's prior written authorization. Contractor, its officers, employees, agents, or sub-Contractors, shall not, without written authorization from the City Manager or unless requested by the City Attorney, voluntarily provide declarations, letters of support, testimony at depositions, response to interrogatories, or other information concerning the work performed under this Agreement. Response to a subpoena or court order shall not be considered "voluntary" provided Contractor gives City notice of such court order or subpoena.
    b. Contractor shall promptly notify City should Contractor, its officers, employees, agents, or sub-Contractors be served with any summons, complaint, subpoena, notice of deposition, request for documents, interrogatories, request for admissions, or other discovery request ("Discovery"), court order, or subpoena from any person or party regarding this Agreement, unless the City is a party to any lawsuit, arbitration, or administrative proceeding connected to such Discovery, or unless Contractor is prohibited by law from informing the City of such Discovery. City retains the right, but has no obligation, to represent Contractor and/or be present at any deposition, hearing, or similar proceeding as allowed by law. Unless City is a party to the lawsuit, arbitration, or administrative proceeding and is averse to Contractor in such proceeding, Contractor agrees to cooperate fully with City and to provide the opportunity to review any response to Discovery requests provided by Contractor. However, City's right to review any such response does not imply or mean the right by City to control, direct, or rewrite said response.
17. **OWNERSHIP OF DOCUMENTS.**
    a. Contractor shall maintain complete and accurate records with respect to sales, costs, expenses, receipts, and other such information required by City that relate to the performance of the Services under this Agreement. Contractor shall maintain adequate records of services provided in sufficient detail to permit an evaluation of services. All such records shall be maintained in accordance with generally accepted accounting principles and shall be clearly identified and readily accessible. Contractor shall provide free access to the representatives of City or its designees at reasonable times to such books and records; shall give City the right to examine and audit said books and records; shall permit City to make transcripts or copies therefrom as necessary; and shall allow inspection of all work, data, documents, proceedings, and activities related to this Agreement. Such records, together with supporting documents, shall be maintained for a period of three (3) years after receipt of final payment.

b. Upon completion of, or in the event of termination or suspension of this Agreement, all original documents, designs, drawings, maps, models, computer files, surveys, notes, and other documents prepared in the course of providing the Services under this Agreement shall become the sole property of the City and may be used, reused, or otherwise disposed of by the City without the permission of the Contractor. With respect to computer files, Contractor shall make available to the City, at the Contractor's office and upon reasonable written request by the City, the necessary computer software and hardware for purposes of accessing, compiling, transferring, copying and/or printing computer files. Contractor hereby grants to City all right, title, and interest, including any copyright, in and to the documents, designs, drawings, maps, models, computer files, surveys, notes, and other documents prepared by Contractor in the course of providing the Services under this Agreement.

18. **INDEMNIFICATION AND DEFENSE.** To the fullest extent permitted by law (including, but not limited to California Civil Code Sections 2782 and 2782.8), Contractor shall indemnify, defend, and hold harmless the City, and its elected officials, officers, employees, volunteers, and agents ("City Indemnitees"), from and against any and all causes of action, claims, liabilities, obligations, judgments, or damages, including reasonable legal counsels' fees and costs of litigation ("claims"), arising out of the Contractor's performance or Contractor's failure to perform its obligations under this Agreement or out of the operations conducted by Contractor, including the City's passive negligence, except for such loss or damage arising from the sole or active negligence or willful misconduct of the City. In the event the City Indemnitees are made a party to any action, lawsuit, or other adversarial proceeding arising from Contractor's performance of this Agreement, the Contractor shall provide a defense to the City Indemnitees or at the City's option, reimburse the City Indemnitees the ir costs of defense, including reasonable legal fees, incurred in defense of such claims. The review, acceptance or approval of the Consultant's work or work product by any indemnified party shall not affect, relieve or reduce the Consultant's indemnification or defense obligations. This Section survives the completion of the services or the termination of this contract. The provisions of this section are not limited by and do not affect the provisions of this contract relating to insurance. Consultant's indemnification obligations under this section extend to any claims arising out of or related to the negligence, recklessness, or willful misconduct of any sub-consultants/ subcontractors.

19. **SUSPENSION OR TERMINATION OF AGREEMENT WITHOUT CAUSE.**
    a. The City may at any time, for any reason, with or without cause, suspend or terminate this Agreement, or any portion hereof, by serving upon the Contractor at least thirty (30) days prior written notice. Upon receipt of said notice, the Contractor shall immediately cease all work under this Agreement, unless the notice provides otherwise. If the City suspends or terminates a portion of this Agreement such suspension or termination shall not make void or invalidate the remainder of this Agreement.
    b. In the event this Agreement is terminated pursuant to this Section, the City shall pay to Contractor the actual value of the work performed up to the time of termination, provided that the work performed is of value to the City. Upon termination of the

Agreement pursuant to this Section, the Contractor will submit an invoice to the City pursuant to Section 14.

20. **TERMINATION FOR CAUSE.** If, during the term of the Agreement, the City determines the Contractor is not faithfully abiding by any term or condition contained herein, the City may notify the Contractor in writing of such defect or failure to perform. This notice must give the Contractor a ten (10) calendar day notice of time thereafter in which to perform said work or cure the deficiency.
    a. If the Contractor has not performed the work or cured the deficiency within the ten (10) days specified in the notice, such shall constitute a breach of the Agreement and the City may terminate the Agreement immediately by written notice to the Contractor to said effect ("Notice of Termination"). Thereafter, neither party shall have any further duties, obligations, responsibilities, or rights under the Agreement except to comply with the obligations upon termination.
    b. In said event, the Contractor shall be entitled to the reasonable value of its services performed from the beginning date in which the breach occurs up to the day it received the City's Notice of Termination, minus any offset from such payment representing the City's damages from such breach. "Reasonable value" includes fees or charges for goods or services as of the last milestone or task satisfactorily delivered or completed by the Contractor as may be set forth in the Agreement payment schedule; compensation for any other work or services performed or provided by the Contractor shall be based solely on the City's assessment of the value of the work-in-progress in completing the overall scope.
    c. The City reserves the right to delay such payment until completion or confirmed abandonment of the project, as may be determined in the City's sole discretion, so as to permit a full and complete accounting of costs. In no event, however, shall the Contractor be entitled to receive in excess of the not to exceed amount shown in this Agreement.
21. **INSURANCE.** Contractor shall maintain prior to the beginning of and for the duration of this Agreement insurance coverage as specified in Exhibit B attached to and made part of this Agreement.
22. **BUSINESS LICENSE & TAX.** The Contractor must have a valid City of San Luis Obispo business license & tax certificate before execution of the contract. Additional information regarding the City's business tax program may be obtained by calling (805) 781-7134.
23. **SAFETY PROVISIONS.** The Contractor shall conform to the rules and regulations pertaining to safety established by OSHA and the California Division of Industrial Safety.
24. **PUBLIC AND EMPLOYEE SAFETY.** Whenever the Contractor operations create a condition hazardous to the public or City employees, it shall, at its expense and without cost to the City, furnish, erect and maintain such fences, temporary railings, barricades, lights, signs and other devices and take such other protective measures as are necessary to prevent accidents or damage or injury to the public and employees.

25. **UNDUE INFLUENCE.** Contractor declares and warrants that no undue influence or pressure was used against or in concert with any officer or employee of the City in connection with the award, terms or implementation of this Agreement, including any method of coercion, confidential financial arrangement, or financial inducement. No officer or employee of the City has or will receive compensation, directly or indirectly, from Contractor, or from any officer, employee or agent of Contractor, in connection with the award of this Agreement or any work to be conducted as a result of this Agreement. Violation of this Section shall be a material breach of this Agreement entitling the City to any and all remedies at law or in equity.
26. **ASSIGNMENT.** The Contractor shall not assign, transfer, convey or otherwise dispose of the contract, or its right, title or interest, or its power to execute such a contract to any individual or business entity of any kind without the previous written consent of the City.
27. **AMENDMENT**. Any amendment, modification, or variation from the terms of this Agreement shall be in writing and shall be effective only upon approval by the appropriate review authority according to the City's Financial Management Manual. Contractor shall not be compensated for any services rendered in connection with its performance of this Agreement which are in addition to those set forth herein, unless such additional services are authorized by the City in advance and in writing.
28. **COMPLETE AGREEMENT.** This written Agreement, including all writings specifically incorporated herein by reference, shall constitute the complete Agreement between the Parties hereto. No oral agreement, understanding, or representation not reduced to writing and specifically incorporated herein shall be of any force or effect, nor shall any such oral Agreement, understanding, or representation be binding upon the Parties hereto. Each party is entering into this Agreement based solely upon the representations set forth herein and upon each party's own independent investigation of any and all facts such party deems material.
29. **NOTICE.** All notices to the Parties hereto under this Agreement shall be in writing and shall be sent either by (i) personal service, (ii) delivery by a reputable document delivery service, such as, but not limited to, Federal Express, which provides a receipt showing date and time of delivery, or (iii) United States Mail, certified, postage prepaid, return receipt requested. All such notices shall be delivered to the addressee or addressed as set forth below:

To City:	Mobility Services City of San Luis Obispo 1260 Chorro St, Ste B San Luis Obispo, CA 93401 Attention: Donna King
To Contractor:	Name Mailing Address

30. **GOVERNING LAW.** Any action arising out of this Agreement shall be brought in the Superior Court of San Luis Obispo County, California, regardless of where else venue may lie. The

validity, interpretation, construction and performance of this Agreement, and all acts and transactions pursuant hereto and the rights and obligations of the Parties hereto shall be governed, construed and interpreted in accordance with the laws of the State of California, without giving effect to principles of conflicts of law.

31. **AUTHORITY TO EXECUTE AGREEMENT**. Both City and Contractor do covenant that each individual executing this Agreement on behalf of each party is a person duly authorized and empowered to execute Agreements for such party.

IN WITNESS WHEREOF, the Parties hereto have caused this instrument to be executed the day and year first above written.

CITY	CONTRACTOR
_____ By: [Name] Its: [Title of City Manager or Department Head]	_____ By: [Name] Its: [Title]
APPROVED AS TO FORM:	
_____ By: J. Christine Dietrick, City Attorney	

EXHIBIT A

Page intentionally left blank pending attachment of RFP and contractor's proposal

EXHIBIT B: INSURANCE REQUIREMENTS

Insurance Requirements – Standard Professional Services

The Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, employees or subcontractors.

Minimum Scope of Insurance. Coverage shall be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage (occurrence form CG 0001).
2. Insurance Services Office form number CA 0001 (Ed. 1/87) covering Automobile Liability, code 1 (any auto).
3. Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.

Minimum Limits of Insurance. Contractor shall maintain limits no less than:

1. General Liability: $1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit of $2,000,000.
2. Automobile Liability: $1,000,000 per accident for bodily injury and property damage.
3. Employer's Liability: $1,000,000 per accident for bodily injury or disease.

Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, officials, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

Other Insurance Provisions. The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. The City, its officers, officials, employees, agents and volunteers are to be covered as insureds as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officers, official, employees, agents or volunteers.
2. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the City, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, agents or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

3. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

4. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty

(30) days' prior written notice by certified mail, return receipt requested, has been given to the City.

Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII.

Verification of Coverage. Contractor shall furnish the City with a certificate of insurance showing maintenance of the required insurance coverage. Original endorsements effecting general liability and automobile liability coverage required by this clause must also be provided. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. All endorsements are to be received and approved by the City before work commences.

1. Overview

A comprehensive Parking Management Program requires a significant focus on data, integration, and system design and security. The City desires to partner with Contractors who focus on flexible and industry leading solutions while providing secure and compliant technology. This section includes additional requirements beyond what is defined in specific sections of this RFP. Proposers must take care to fully understand all related requirements as all will be part of the resulting contract awarded.

2. System and Security Requirements

2.1 Contractor shall provide secure hosting and support for all functions, ensuring availability through the Internet for all devices, including desktop and mobile computers, phones, tablets, and other wireless devices. The City shall not be required to install or maintain software on servers owned or managed by the City.

2.2 Computers that access the System shall not require special software packages or client software to access the System. Any computer shall be able to access the System through a standard web browser without plug-ins or other components.

2.3 Contractor shall be responsible for taking every precaution to ensure that all systems, files, data, equipment, communications, and facilities are reliable.

2.4 Contractor shall be responsible for virus detection, prevention, control, and eradication for all System servers and connected devices.

2.5 Contractor shall have security features that are designed to maintain the security of all information contained in the System database and maintain the confidentiality of information. Contractor s security for the System and all connections thereto shall conform to current industry best practices.

2.6 Contractor is expressly forbidden from selling, leasing, distributing, publishing, or otherwise sharing any personal information collected from the City, including, but not limited to, transaction history, address, email address, phone number, and credit card information. Notwithstanding the preceding restrictions, Contractor shall be permitted to use such information to enable the services provided to City as part of this agreement. At the City s sole discretion, the City may direct the Contractor to share data in a secure manner with City appointed parties.

2.7 All information security incidents shall be reported immediately to the City. Security incidents include theft, loss, damage or compromise to information systems and data, known vulnerabilities and exploits, website defacement or compromise, successful malware attacks, denial of services, and other security events as defined by the City s Information Security Officer.

2.8 Contractor shall establish and maintain data storage, retention, and archive procedures to maintain System performance.

2.9 The System shall provide full system backup and recovery capabilities. Contractor shall be responsible for the maintenance of the database which will include back-up and recovery procedures. Contractor shall make sufficient backups to ensure that no data is lost in any circumstances.

2.10 System uptime is critical. The Contractor will maintain a 99.5% or greater uptime annually for the system as whole, including any subsystems critical to solution operation.

2.11 Uptime will be excluding scheduled maintenance. Contractor will notify City of any schedule downtime at least 7 days in advance. Scheduled maintenance shall be coordinated to have the least impact on City operations.

3. PCI Compliance

3.1 As required, the Contractor solution shall be compliant with Payment Card Industry Data Security Standard Level 1 latest version at the time of contract execution.

3.2 As the PCI Data Security Standard evolves, Contractor shall be responsible for maintaining compliance with that standard at Contractor's sole expense.

3.3 Contractor shall provide an Attestation of Compliance (AoC) as a declaration of compliance status with PCI DSS at the request of the City.

4. Data Requirements

4.1 The City shall be the exclusive owner of all data and rights to the data generated from the Systems, regardless of whether the data is direct or derived, calculated, or modeled.

4.2 Contractor shall store or archive (with the City s approval) all transaction data generated during the term of the Agreement and retain it for at least five years after its termination.

4.3 Contractor shall deliver copies of all System data upon request of City, or its designee, and upon the termination of the Agreement in a format mutually agreed upon by both parties.

4.4 Contractor shall be responsible for providing transaction data in a format that is readable by City using commonly available commercial off-the-shelf software.

4.5 At termination of the contract, for any reason, resulting from this RFP, if the successor contract is awarded to another firm, Contractor must develop and implement a Data Conversion Plan between Contractor and the City or its designee.

5. Integration Requirements

Some required integrations are fully defined in solution specific sections of this RFP. This section includes additional or complimentary requirements. It is assumed and required by the City that the Contractor s solution, which may include one or more systems and/or third-party systems, will be integrated by the time of contract execution as would be necessary to meet the requirements for their specific service.

5.1 Contractor shall utilize open-source API s that allows for current and future integration with third parties.

5.2 Contractor shall provide real-time integration with the City s current, new, and future parking technology and data management Contractors, including, but not limited to, citation issuance/enforcement handhelds, LPR, and mobile payment. These types of integrations are considered standard in the industry.

5.3 The City recognizes that standard integrations have a certain amount of latency between systems. However, timely data exchanges are required for efficient and accurate parking operations. Latency between any two systems shall not exceed an average of 90 seconds for every 100 consecutive transactions. The latency measurement shall be defined as the moment a data request is made or data is sent to the moment the data is delivered and is viewable to any end user.

5.4 Should latency be observed in excess of 90 seconds, Contractor will work with the City to measure the latency, identify the point of default, and correct the default.

5.5 Custom integration, being nonstandard and not identified in this RFP, may be considered in the future by the City. Contractor agrees to provide the necessary development to achieve a custom integration for a mutually agreed cost and schedule to be memorialized in amendment to the resulting contract from this RFP.

5.6 Batch data transfer may be considered for certain integrations, at the sole discretion of the City.

5.7 Contractor shall provide all necessary parking-related data in a format compatible with standard industry integrations. In the event that data formats between City Contractors do not match, the City may require either Contractor to make reasonable changes to their format at no additional cost to the City.

5.8 Contractor shall operate in good faith with the City and the City s designated Contractors to implement, troubleshoot and complete necessary integration as defined by the City.

5.9 In the event that two or more Contractors cannot agree on the methodology used for any integration, the City will select the methodology most advantageous for the City.

6. Standard Integrations

The following is a list of standard integrations.

6.1 Parking Meter or Pay Station Systems shall integrate with:

- 6.1.1 Citation Issuance, Processing and Enforcement System
- 6.1.2 Licenses Place Recognition System (LPR)
- 6.1.3 Mobile or Text to Pay Payment System

6.2 Mobile or Text to Pay Payment System shall integrate with:

- 6.2.1 Citation Issuance, Processing and Enforcement System
- 6.2.2 Licenses Place Recognition System (LPR)
- 6.2.3 Parking Meter or Pay Station System
- 6.2.4 Parking Access Revenue Control System

6.3 Parking Access Revenue Control System

- 6.3.1 Citation Issuance, Processing and Enforcement System
- 6.3.2 Licenses Place Recognition System (LPR)
- 6.3.3 Parking Meter or Pay Station System
- 6.3.4 Mobile or Text to Pay Payment System
- 6.3.5 Permit Management System

6.4 Citation Issuance, Processing and Enforcement Systems shall integrate with:

- 6.4.1 Parking Meter or Pay Station System
- 6.4.2 Parking Access Revenue Control System

6.4.3 Licenses Plate Recognition System
6.4.4 Mobile or Text to Pay Payment System
6.4.5 Permit Management System
6.4.6 Department of Motor Vehicles for the City s state
6.4.7 Out of State motor vehicle registries
6.4.8 Department of Justice or Police Depart for the City s state (for wanted vehicle hotlists)
6.4.9 California Franchise Tax Board (CA only)
6.4.10 Delinquent collections agency (if applicable)

6.5 Permit Management Systems shall integrate with:
6.5.1 Parking Access Revenue Control System
6.5.2 Citation Issuance, Processing and Enforcement System
6.5.3 Licenses Plate Recognition System
6.5.4 Any local databases necessary for permit processing

6.6 Licenses Plate Recognition System shall integrate with:
6.6.1 Citation Issuance, Processing and Enforcement System
6.6.2 Parking Meter or Pay Station System
6.6.3 Parking Access Revenue Control System
6.6.4 Mobile or Text to Pay Payment System
6.6.5 Permit Management System
6.6.6 Department of Justice or Police Depart for the City s state (for wanted vehicle hotlists)

7. Integration with City Systems

7.1 Integration with City systems shall be considered a standard integration.

Page intentionally left blank. Attachment C is an MS Excel file to be completed by contractor with RFP submittal

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Council Agenda Report

Department: Public Works
Cost Center: 9501
For Agenda of: 11/12/2024
Placement: Business
Estimated Time: 60 Minutes

FROM: Matt Horn, Public Works Director
Prepared By: Sandra Golonka, Capital Projects Manager III

SUBJECT: RECEIVE THE MISSION PLAZA ENHANCEMENT PROJECT, SPECIFICATION NO. 91439-01, CONSTRUCTION BID AND PROJECT BUDGET UPDATE

RECOMMENDATION

1. Receive a presentation on the "Mission Plaza Enhancements Project – Construction Bids and Budget Update," Specification No. 91439-01; and
2. Provide input and direct staff to proceed with Alternative One, Two, or Three, or some combination thereof, as discussed in this staff report.

REPORT IN BRIEF

The Mission Plaza Enhancement Project, initiated from the 2017 Mission Plaza Concept Plan, has undergone several reviews and approvals over the years. In June 2023, the City Council authorized the project to be advertised for bids. Since then, the project has been advertised three separate times for bids. The first two attempts resulted in non-responsive bids due to contractor discrepancies, while the third and most recent advertisement produced two responsive bids that significantly exceeded the engineer's estimate. The lowest responsive bid submitted by a responsible contractor was nearly double the estimated cost, resulting in a substantial funding shortfall. Staff has developed alternatives for Council's consideration.

POLICY CONTEXT

With the adoption of the Fiscal Year 2023-25 Financial Plan, Council established a Major City Goal of Economic Resiliency, Cultural Vitality, and Fiscal Sustainability. Within that Major City Goal is the strategic approach for Downtown Vitality with efforts to focus on supporting infrastructure investments. The Mission Plaza improvements are included in the infrastructure investments the City is pursuing to meet the Major City Goal by activating a public space and increasing safety of the plaza.

The recommended actions for the award and fund appropriation are supported by the City Council's adopted Capital Improvement Plan as well as its Fund Balance and Reserve Policy. The City's Fund Balance and Reserve Policy was adopted in June 2021 and includes guidelines related to the Capital Projects Reserve Fund, as follows:

> *The City will maintain a committed reserve of 20% of the Capital Improvement Plan budget from the Local Revenue Measure for the purposes of offsetting unanticipated cost increases, unforeseen conditions, and urgent unanticipated projects to provide continued investment in infrastructure maintenance and enhancement. Use and allocations of funds from the Capital Projects Reserve Fund will be made to Capital Projects including Major Facility Replacement upon Council approval as necessary during any fiscal year.*

At this time, there are no other projects anticipated to draw from this account. Staff will keep the Council updated as additional funding needs arise for future projects. The recommended use of the Reserve to supplement the Mission Plaza Enhancement project is consistent with this policy.

DISCUSSION

Background

In 2017, the City Council reviewed and adopted the Mission Plaza Concept Plan. A major component of the Concept Plan is to replace the existing restroom and install a new Kiosk Café to encourage longer stays and better activate the plaza. The Concept Plan was developed during a 24-month process involving numerous stakeholder meetings, community workshops, and input from the Parks and Recreation Commission, Cultural Heritage Commission, Architectural Review Commission, and Planning Commission.

In October of 2018, Staff delivered a presentation to the Cultural Heritage Committee (CHC) to convey the intent and scope of the project and receive feedback regarding the City's project development plan. The result was the formation of a CHC sub-committee which included interested community members.

On August 7, 2019, Staff presented the Preliminary Site Plan to the Parks and Recreation Commission. The commission showed support for the proposed plan with recommendations to move forward with the option to provide accommodations for food truck operation and not a standalone café. Additional recommendations include providing bike racks for visitors to the plaza as well as for further activation including small concerts, art shows, children's workshops, and public readings.

In 2020, after several advisory body meetings, a Council Study Session was conducted to get direction on the final scope of the project.

On April 25, 2022, the conceptual design was presented to the Cultural Heritage Committee. The project was reviewed by the Community Development Director through the Architectural Review application and the conceptual project plans were approved on June 1, 2022, based on findings and subject to project conditions that have been incorporated into the final construction documents.

On June 20, 2023, the City Council authorized staff to advertise for construction bids for the Mission Plaza Enhancement Project and authorized the City Manager to award the contract if the lowest responsible bid was below the publicly disclosed funding amount of $2,400,000.

Mission Plaza Enhancements – Construction Plans (Attachment A) and Special Provisions (Attachment B) developed by RRM and staff include many features identified in the previously adopted Mission Plaza Concept Plan.

These features include:

1. Increased Americans with Disabilities Act (ADA) accessibility around the Mission Plaza restrooms and Murray Adobe patio area
2. Activate the Mission Plaza by creating a space for the public to purchase food and drinks and occupy the space
3. Remove the trellis over the adobe and replace it with open seating for dining activities
4. Add drainage inlets around the Murray Adobe and a protective plaster wall with a viewing window
5. Installation of Public Art and Art Kiosk to provide a point of interest and promote community events and engagement
6. Increased restroom capacity
7. Improved security with the addition of cameras and lighting
8. Provide opportunities for vendors to lease and operate a Café Kiosk
9. Improved signage
10. Better lines of sight; to open the area up resulting in better lighting and unobstructed sight paths

The project is subject to conditions of approval including but not limited to protection of the Murray Adobe by hiring a qualified Architectural Historian to monitor construction work and Archeological Monitoring in compliance with the Archaeological Resource Preservation Program Guidelines due to the historic and culturally significant nature of the site.

Construction Bids
The project was advertised with an estimated construction cost of $2,250,000 and a contract duration of 180 working days. The total project bid publicly disclosed a funding amount of $2,400,000.

1st Bid Opening
On April 18, 2024, one bid was received and opened. Quincon Incorporated (Quincon) was the apparent lowest bidder with a listed bid total of $3,434,423.19. Staff reviewed the bid submittal and discovered multiple pricing errors, creating a discrepancy between the listed bid total and the correct bid total per unit price in the submitted documents. When re-calculating the bid total based on the unit price listed, the total bid amount increased to $7,223,406.99. The bid was deemed non-responsive due to pricing errors.

On May 8, 2024, the City Manager authorized staff to reject the bid received and readvertise the project.

2nd Bid Opening

On June 13, 2024, two bids were received from Quincon and Edwards Construction Group (Edwards) for the project. Both bids were above the original Engineer's Estimate, and Quincon was the apparent low bidder with a listed bid total of $3,833,510.68. Staff reviewed the bid submittals and determined that both bidders, including the apparent low bidder, provided insufficient information to determine responsiveness.

Table: Bid Results from the second bid opening 06/13/2024

Engineer's Estimate	*Quincon*	*Edwards*
$2,250,000	*$3,833,511*	*$7,888,068*

Quincon's bid proposal did not acknowledge Addendums #1 and #2 released for this project during the advertisement period. Additionally, Quincon did not include an item price for Item No. 7 (tree removal) listed in the bid item list.

Edwards' bid proposal did not include item prices listed in the bid item list. Furthermore, Edwards did not sufficiently itemize subcontractor percentages of work on the bid forms.

Following the bid opening on June 13, 2024, the second apparent low bidder, Edwards, submitted a formal bid protest to the City. The protest contended that the apparent low bidder, Quincon, did not list all qualified subcontractors, did not list any addendums issued to the project, and that the date and time-stamped bid forms were from a previous project. The protest further contended that for those reasons, Edwards should be named as the lowest, responsive bidder.

As a result of these responsiveness issues, staff recommended rejecting all bids and readvertising to the City Manager. On July 17, 2024, the City Manager authorized staff to reject the bids received and readvertise.

3rd Bid Opening

On October 3, 2024, two bids were received and opened from Quincon Inc. (Quincon) and Edwards Construction Group (Edwards). Quincon was the apparent low bidder with a bid total amount of $4,230,551.77. The apparent low bid amount exceeds the publicly disclosed funding amount of $2,400,000. Both bids were above the original Engineer's Estimate of $2,250,000 and the project is experiencing a budget shortfall in the amount of $1,106,613.

Table: Bid Results from the third bid opening 10/3/24

Engineer's Estimate	*Quincon*	*Edwards*
$2,250,000	*$4,230,552*	*$5,205,517*

To provide a clearer analysis of the project costs, the table below highlights the top 10 items from the bid list, which together account for over 65% of the total project cost. The increase in costs beyond the Engineer's Estimate can be attributed to recent economic

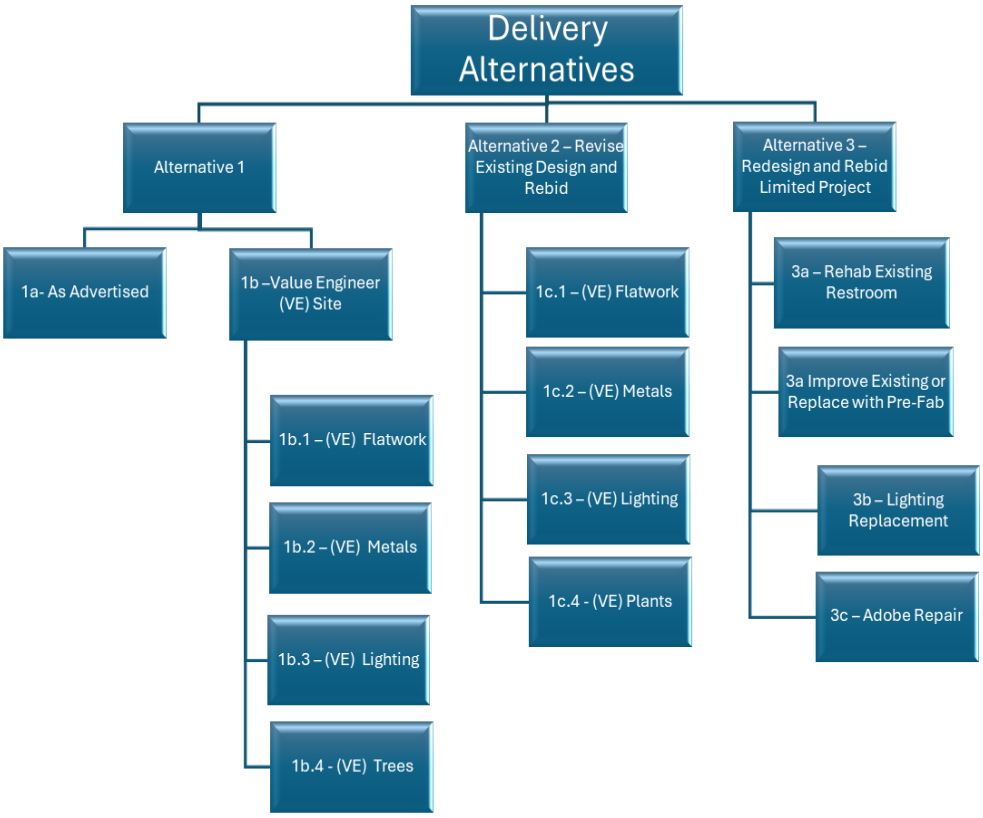
trends, including high demand and a limited pool of contractors qualified to complete the project. Additionally, the specialized nature of metal fabrication, custom pole lighting, custom pavers, and the detailed handwork required for Adobe repair have contributed to the cost escalation.

Item Description	Total	% of Cost
Restroom Building	$953,794.09	22.55%
Kiosk Building	$498,449.97	11.78%
Electrical And Communication Improvements	$398,395.81	9.42%
Decorative Light Pole, Foundation And Luminare	$316,268.44	7.48%
Demolition Of Existing Improvements	$159,720.56	3.78%
Brick Unit Paving	$136,530.00	3.23%
Tree – 96" Box	$121,612.00	2.87%
Privacy Screens And Trash Encloure	$100,988.56	2.39%
Decorative Picket Fence	$90,400.00	2.14%
	$2,776,159.43	***65.62%***

Project Delivery Alternatives

Due to the ongoing cost escalation of the advertised project and three bid results over the available project budget, Council may desire to reduce the project cost and alter the scope of work. Therefore, staff have prepared options for Council's consideration of whether to award the project as advertised, award with cost reducing modifications, or defer the project and readvertise with a redesigned scope. These alternatives are intended to achieve cost reduction while still providing improvements to the plaza.

The alternative pathways below offer different approaches, each influencing project delivery timeframe, costs, long-term maintenance, and funding strategies.



Alternative 1 – Award the Project

1a. - Award as advertised to Quincon Incorporated
If Council chooses to award the construction contract now, the project will move forward as planned. This would fulfill the goals identified in the Mission Plaza Concept Plan by reactivating the space and creating a more usable area for the public. The Café Kiosk would provide dining opportunities, and the open design would enhance visibility and improve security in the area. Improving and protecting the Murray Adobe from further deterioration and vandalism. The project would also enhance accessibility around Mission Plaza and Murray Adobe, making the space more inclusive for everyone.

Awarding the project would require an additional $1,106,613, to be sourced from the CIP Reserve balance. This could place a strain on resources for future CIP projects due to rising construction costs. Moreover, the use of custom products in the design could lead to higher long-term maintenance and replacement costs.

The renderings created by RRM Design Group below provide conceptual visuals of the advertised project's scope and potential appearance. The project includes replacing the restroom building, constructing a kiosk building, creating an uncovered outdoor seating area, and making associated site improvements, such as adding site furniture and upgrading signage.

1a. - Fiscal Impact

Awarding the project as advertised to Quincon in the amount of $4,230,552 would require an additional budget appropriation of $1,106,613 from the CIP Reserve. After accounting for all pending Budget Adjustment Requests (BARs), the current CIP Reserve balance stands at $3,010,000. With the proposed appropriation, the remaining balance in the CIP Reserve would be $1,903,387. Construction would be expected to start in February 2025.

1b. – Award, Value Engineer Project Specialty Components

Council may choose to award the contract and authorize staff to Value Engineer (VE) specialty products with standard alternatives while ensuring the project's aesthetics are preserved. Under this alternative, staff, in collaboration with the RRM design consultant, will evaluate custom products to identify opportunities for substitution with stock or city standard products. This value engineering process involves assessing each custom item for potential replacement with readily available alternatives that maintain the desired aesthetic and functionality. The City Engineer, with the approval from the Director of

Public Works and the Director of Community Development, would approve alternative products which would be issued through a change order. Options within the specialty products are:

- **1b.1.** (VE) Flatwork – Remove decorative pavers, brick, granite, and install Mission Style Concrete
- **1b.2.** (VE) Metals – Remove the decorative planter fencing, seating area fencing, decorative utility covers, decorative pickets, and bar counter. Replace these with standard railing, utility covers, and a stock counter, and remove pickets from locations where they are not needed
- **1b.3.** (VE) Lighting – Remove custom lighting poles and fixtures and replace with City Standard Downtown Pedestrian Lighting Posts
- **1b.4.** (VE) Trees - Reduce the size of the tree boxes to accommodate more readily available tree sizes. The original bid item had significantly higher costs due to the limited availability and delivery of the specified tree size.

Replacement of one or multiple specialty options may result in nominal immediate savings due to the nature of construction and material costs. Additionally, value engineering by choosing standard products will reduce future maintenance and replacement costs, preventing long-term financial impacts. Custom materials may be harder to source or replace if they become damaged or deteriorate over time, increasing both costs and the potential for delays or issues.

The table below compares the specialty product cost to the standard product cost. After consultation with the consultant design team, staff assume a uniform 30% cost reduction when switching from specialty products to standard products. Applying this reduction equally to both bidders maintained that Quincon remained the low bidder for the project. The 30% cost reduction was discussed with the design consultants as a conservative estimate of potential cost savings achievable through material substitution.

Specialty Products	**Estimated Cost Reduction**
Flatwork	$76,930
Metals	$73,570
Lighting	$94,880
Trees	$69,470
Value Engineer Cost	***$80,000***
Total Potential Construction Savings	**$234,850**

Awarding Alternative 1b would require the same level of funding from the CIP Reserve balance as Alternative 1a to ensure the total project cost is covered. The actual cost savings from the redesign process to replace specialty products with standard alternatives are estimates, so it is recommended that the total budget and funding request would be the same under Alternative 1b as under Alternative 1a. It is estimated that the total project cost could result in savings of approximately $235,000, which would be returned to the CIP Reserve Fund balance after completion of construction. Construction would be expected to start in February 2025.

Alternatives 1 - Award Project		
	Alternative 1: Award as Advertised	***Alternative 1b: Award, VE Project Specialty Components***
Construction Project Cost	**$4,230,552**	**$4,230,552**
Savings Specialty Products (Flatwork)		$76,930
Savings Specialty Products (Metals)		$73,570
Savings Specialty Products (Lighting)		$94,880
Savings Specialty Products (Trees)		$69,470
Re-Design Cost		***-$80,000***
Total Potential Saving in Specialty Products		***$234,850***
Contingency (20%)	$846,110	$846,110
Const. Support Cost	*$733,822*	*$733,822*
Project Total	***$5,810,485***	***$5,810,485***
Available Project Balance:	$4,703,872	$4,703,872
Funding Request	**$1,106,613**	**$1,106,613**

Alternative 2 – Revise Existing Design and Rebid

Council may choose to authorize staff to redesign the project to remove the Café Kiosk and all associated costs, as well as to replace specialty products with standard alternatives *(as noted in Alternative 1b)* while ensuring the project's aesthetics are preserved.

Removing the Café Kiosk could reduce costs, but accurately estimating total savings is difficult due to increasing construction costs. The current bid includes $498,450 for the Kiosk Building. The table below outlines the cost reduction of removing the kiosk. With the removal of the café, the space would not be activated as originally intended, but it would offer flexibility for other uses, such as testing the food truck concept identified in the 2020 staff report, and could still support existing and future special events. The City would no longer need to manage a kiosk vendor and risks of vandalism and theft would decrease, particularly during periods when the café is not occupied. Additionally, replacing specialty products with standard products would lower future maintenance costs.

The absence of a café could lead to a less vibrant and potentially underused space, which raises concerns about the area becoming stagnant or prone to undesirable activities. To address this, staff, in collaboration with RRM, would need to develop solutions to ensure the space remains active and safe after construction. RRM has been involved in the project since its inception, providing insights during advisory body presentations and

understanding the project's objectives and previous community feedback. RRM will work alongside staff to propose and assess solutions that foster engagement in the area. One potential solution could be to have Parks and Recreation manage tables and seating, as successfully implemented in other areas of the plaza.

Authorizing Alternative 2 would require additional costs for design, and future bids would be impacted by cost escalation which could be mitigated using CIP Reserve funding or funding from the 2025-27 Financial Plan as construction would be expected to start in Summer 2025 after the Concerts in the Plaza.

Alternative 2 -Revise Existing Design, and Rebid	
Construction Project Cost	**$3,449,829**
Savings Specialty Products (Flatwork)	$76,930
Savings Specialty Products (Metals)	$73,570
Savings Specialty Products (Lighting)	$94,880
Savings Specialty Products (Trees)	$69,470
Total Saving in Specialty Products	***$314,850***
Contingency (20%)	$626,996
Re-Design Cost	*$114,000*
Const. Support Cost	*$733,822*
Escalation Cost 15%	*$691,470*
Project Total	***$5,301,266***
Available Project Balance:	$4,703,872
Funding Request	**$597,394**

Alternative 3 – Redesign and Rebid Limited Project

Alternative 3 focuses on providing two different options for the restroom component of the project and provides other component costs for Mission Plaza Improvements that could be added to the project. This alternative will require that the project design be revised and a new bid package created. It is important to note with Alternative 3 that the component cost for flat work and landscaping (i.e. concrete or paver walkways, trees, and planters) are not included in this option.

In recognition of the double-digit cost escalation seen on this project, the current estimate to redesign and rebid a limited project includes a conservative 15% cost escalation due to additional time needed for redesign and issuance of a new building permit, as well as the limited scoping information available. Staff expects construction under this alternative could begin in mid-2025. However, construction costs are subject to ongoing uncertainty and fluctuation, so the estimate for any part of this alternative may change.

3a. Restroom or Rehabilitate existing Restroom

Council could direct staff to return with a project that rehabilitates the existing restroom structure and this would provide the lowest cost project for the City. Rehabilitation would include cleaning, repainting and replacement of all fixtures and associated plumbing.

Council could also direct staff to return to Council with a project that demolishes the old restroom and replaces it with a prefabricated restroom. The City does not have much experience with these types of projects as historically large cost savings are not expected and local labor is not used to manufacture these structures. The anticipated benefit of using a prefabricated restroom for the Mission Plaza is the duration of site impact. Staff anticipates that the duration of work that impacts the Mission Plaza site will be much less with a prefabricated structure versus a site-built structure.

If the Council decides to proceed with a prefabricated structure, the project will likely require the project's existing entitlement to be updated. This entitlement process would involve a site review by an environmental consultant, who would develop an environmental and historical monitoring plan. RRM would prepare a conceptual design which would require a review by the Cultural Heritage Committee and the Architecture Review Committee to ensure that any modifications align with the site's aesthetic and historic character. Once these steps are completed, the approved project scope would advance to the preparation of construction bid documents. Prefabricated structures have an estimated design lead time of 16-18 months. Staff would then return to Council to seek authorization to advertise the project.

The combination of design and public advisory board reviews, along with necessary approvals, could extend the project timeline by approximately 28-30 months, potentially pushing the start of construction for this option to 2027.

3b. Lighting Replacements

Council may choose to authorize staff to redesign the project to replace all pole lighting in the plaza and along the creek walk to remove dark spaces and improve safety with city standard dark forest green pedestrian pole lighting.

3c. Adobe Repair and Protection

Council may choose to authorize staff to redesign the project to make exterior drainage improvements, remove the trellis, and build a viewing wall for protection.

Alternatives 3 - Redesign and Rebid Limited Project					
	Est. Const. Cost	Contingency (20%)	*Design Cost*	Escalation Cost 15%	*Project Total*
Alternative 3: Demo and Replace Restroom with Pre-Fab Structure	$950,000	$190,000	$125,000	$189,750	$1,454,750
Alternative 3b: Lighting Improvements	$417,200	$83,440	$11,000	$76,746	$588,386
Alternative 3c: Adobe Repair	$128,000	$25,600	$20,000	$26,040	$199,640
New PreFab Restroom including Alternates 3b and 3c Project Total:					***$2,242,776***
Alternative 3: Rehabilitate Existing Restroom	$325,000	$65,000	$55,000	$66,750	$511,750
Alternative 3b: Lighting Improvements	$417,200	$83,440	$11,000	$76,746	$588,386
Alternative 3c: Adobe Repair	$128,000	$25,600	$20,000	$26,040	$199,640
Rehabilitate Existing Restroom including Alternate 3b and 3c Project Total:					***$1,299,776***

Alternatives 3a – 3c: *The scope of work is limited exclusively to the elements outlined in each alternative. No additional improvements or modifications outside of these specific designs will be included within the project site. Alternative 3 will incur Construction Support Costs, which vary depending on the selected components. These costs are estimated to range from $200,000 to $600,000, influenced by the specific area of work and the requirements outlined by City advisory bodies.*

Previous Council or Advisory Body Action

On September 5, 2017, the Mission Plaza Concept Plan was adopted by City Council. After the Mission Plaza Concept Plan was adopted, staff proceeded with the Mission Plaza Restroom and Kiosk project. As discussed in the Background section, the project was presented to many advisory bodies and then presented to City Council for a study session on February 18, 2020. Next, the conceptual design was presented to the Cultural Heritage Committee on April 25, 2022. The project was reviewed by the Community Development Director through the Architectural Review application and the conceptual project plans were approved on June 1, 2022, based on findings and subject to project conditions that have been incorporated into the final construction documents.

On June 20, 2023, City Council authorized staff to advertise for construction bids for the Mission Plaza Enhancement Project.

Public Engagement

This project received public input throughout the process due to the many advisory body meetings listed above. Additionally, this project has received funding in each financial plan since the 2015-17 Financial Plan. The City engages the public during each financial plan process.

CONCURRENCE

There is concurrence from the Community Development Department through the architecture review process and building permit process. This project also has concurrence from the Administration Department as they have reviewed the project throughout the design process. The recommendations of this staff report have the concurrence of Public Works and Parks and Recreation Departments.

ENVIRONMENTAL REVIEW

Alternative 1 & 2

On June 1, 2022, the Community Development Director approved the Architectural Review application for the proposed project and found the project categorically exempt from the California Environmental Quality Act (CEQA) under CEQA Guidelines Section 15301 (Class 1, Existing Facilities), Section 15302 (Class 2, Replacement or Reconstruction), and Section 15303 (Class 3, New Construction of Small Structures). Upon detailed review and analysis by the City's environmental consultant, Rincon, the City concluded that the proposed project conforms with the Secretary of Interior's Standards, and as such, would result in less than significant impacts to historical resources (Mission Plaza) under CEQA. (CEQA Section 10564.5(b)(3).) Thus, an exception to the categorical exemptions referenced above are not triggered.

The project remains consistent with the previous discretionary approval, and identified categorical exemptions, as it includes replacement of the restroom building on the same site, for the same purpose and capacity, an existing structure as described in CEQA Guidelines Section 15302 (Replacement or Reconstruction); construction of a small kiosk building to be put to uses which are allowed in the Public Facilities (PF) Zone, with all necessary services and facilities available, as described in CEQA Guidelines Section 15303 (New Construction of Small Structures); and creation of an outdoor seating area through minor alteration of an existing public facility, as described in CEQA Guidelines Section 15301. The project is consistent with the applicable general plan policies as well as with applicable City Regulations.

Alternative 3

Options under Alterative 3 are conceptual and have not undergone environmental review. If Council chooses to proceed with work described under Alternative 3, staff will incorporate environmental review and CEQA determination into the project schedule, with applicable CEQA determinations incorporated into the project approvals.

FISCAL IMPACT

Budgeted: Yes Budget Year: 2024-25
Funding Identified: No

The Mission Plaza Enhancement Project has been receiving funding since 2016. The table below shows the funding received to date.

Prior Funding for Mission Plaza Enhancement									
2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**24/25 Budget Supplement**	**Total**
$80,000	$0	$25,000	$45,000	$150,000	$149,825	$1,035,000	$2,429,972	$1,398,162	$5,312,959

Fiscal Analysis:

The Mission Plaza Enhancement account (2091439) has a current available budget of $4,703,872 to support project expenses. This budget includes $623,822.42 in encumbered purchase orders (POs), which could be reallocated towards additional cost for design work if Council directs staff to pursue Alternatives 2 or 3. The project account balance excluding encumbered POs (i.e., the remaining balance if all POs were spent), is $4,080,050.

The table below summarizes these balances pertaining to funding source and the additional funding needed based on the alternatives in this report. Currently, staff is anticipating Alternative 1a and 1b to exceed available budget by $1,106,613. To address this funding gap, staff recommends appropriating $1,106,613 from the CIP Capital Reserve (LRM) account to fully cover the shortfall and ensure the project's completion. Any remaining funds will be returned to the CIP Capital Reserve upon project completion. If Council directs staff to proceed with either Alternative 2 or 3, any additional funding needs would be addressed in a future report to Council or the 2025-27 Financial Plan.

Alternative Overview			
Project Information			
Alternative	***Project Cost***	***Funding Request***	***Project Start***
Alternative 1a: Award as Advertised	$5,810,485	$1,106,613	January 2025
Alternative 1b: Award & VE Specialty Products	$5,512,665	$1,106,613	January 2025
Alternative 2: Revise Existing, Design, and Rebid	$5,301,266	$597,394	September 2025
Alternative 3a: Rehabilitate existing Restroom, including 3b (Lighting), and 3c (Adobe)	$1,299,776	$0	May 2025
Alternative 3a: Pre-Fab Restroom, including 3b (Lighting), and Alt. 3c (Adobe)	$2,242,776	$0	May 2027

Funding Sources	Total Budget Available	Current Funding Request	Remaining Balance	Annual Ongoing Cost
Capital Outlay Fund	$2,526,812	$2,526,812	$0	$0
Capital Outlay Fund (LRM)	$1,553,238	$2,659,850	$0	$0
CIP Capital Reserve Fund	$3,010,000	$1,106,613	$1,903,387	$0
Total	**$4,080,050**	**$5,186,662**	**$1,903,387**	**$N/A**

ALTERNATIVES

1a. Award the total bid. Council may choose to award the full project as advertised to Quincon Incorporated and authorize the $City Engineer to issue contract change orders for the Mission Plaza Enhancement Project if within the available budget and appropriate $1,106,613 of CIP Capital Reserve Balance. Authorize the Finance Director to transfer any remaining balance from the Mission Plaza Enhancement Project Account (2091439) to the CIP Capital Reserve Account upon project completion.

1b. Award the total bid and value engineer specialty products. Council may choose to award the full project as advertised to Quincon Incorporated and authorize the City Engineer to issue contract change orders for the Mission Plaza Enhancement Project if within the available budget and appropriate $1,106,613 of CIP Capital Reserve Balance. Authorize the City Engineer to amend RRM Design Group's contract to perform value engineering and authorize the Finance Director to transfer any remaining balance from the Mission Plaza Enhancement Project Account (2091439) to the CIP Capital Reserve Account upon project completion.

2. Deny the award and redesign. Council may choose not to award the contract at this time, reject all bids, and instead authorize staff to redesign the project to remove the Café Kiosk. This redesign could then be brought back to Council for authorization to advertise. This option would delay the project construction and risk further increases in construction and design costs.

3*. Defer the award and direct staff to return to Council with a new bid package*. Should Council choose this alternative, staff recommends selecting one or more of the following options:

3a. Restroom Design:

Council may choose not to award the construction contract and instead pay for a new design to improve the existing restroom which could include tiling, replacing fixtures, paint, and associated plumbing.

OR

Council may choose not to award the construction contract and instead pay for a new design of a prefabricated restroom. This option would likely need to be reviewed by the Cultural Heritage Committee and the Architecture Review Committee, which would delay the project construction and risk further increases in construction and design costs.

3b. Pole Lighting: Council may choose not to award the construction contract and instead choose from the options in 3a, plus option 3b, or choose option 3b alone. If selecting to move forward with option 3b, Council should authorize staff to redesign the project to replace all pole lighting in the plaza and along the creek walk.

3c. Adobe Repairs: Council may choose not to award the construction contract and instead choose from the options in 3a, plus options 3b and 3c, and/or choose option 3c alone. If selecting to move forward with option 3c, Council should authorize staff to redesign to make exterior drainage improvements, remove the trellis, and build a viewing wall for protection.

ATTACHMENTS

A - Project Plans (Spec. 91439-01)
B - Special Provisions (Spec. 91439-01)

ARCHITECT OF RECORD | STRUCTURAL ENGINEER OF RECORD | LANDSCAPE ARCHITECT OF RECORD

CIVIL ENGINEER OF RECORD | MECHANICAL ENGINEER OF RECORD | EXPIRES: 06/30/26 THOMA #20-8170 ELECTRICAL ENGINEER OF RECORD

index to plans

Reference Documents:
City Standard Specifications - August 2020 Edition
City Engineering Standards - August 2020 Edition

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G002	GENERAL NOTES
G003	CONDITIONS OF APPROVAL
CIVIL	
CD101	DEMOLITION PLAN
CG101	HORIZONTAL CONTROL PLAN
CG102	GRADING, DRAINAGE & UTILITY PLAN
CG103	EROSION CONTROL PLAN
ARCHITECTURAL	
G-101	GENERAL NOTES & FINISH SCHEDULE
G-103	ACCESSIBILITY DETAILS
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G-105	CAL GREEN REQUIREMENTS
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AK101	FLOOR PLAN & DOOR SCHEDULE
AK102	ROOF PLAN
AK103	REFLECTED CEILING PLAN
AK301	EXTERIOR ELEVATIONS & SECTION
AK501	INTERIOR ELEVATIONS
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AR101	FLOOR PLAN & DOOR SCHEDULE
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AR301	EXTERIOR ELEVATIONS
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A-901	DETAILS
A-902	DETAILS
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LANDSCAPE ARCHITECTURAL	
TP001	TREE PROTECTION PLAN
TP501	TREE PROTECTION DETAILS & NOTES
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LC504	CONSTRUCTION DETAILS
LC505	CONSTRUCTION DETAILS
LI101	IRRIGATION PLAN
LI201	IRRIGATION HYDROZONE PLAN
LI501	IRRIGATION DETAILS
LI502	IRRIGATION DETAILS
LP101	PLANTING PLAN
LP501	PLANTING DETAILS

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S-201	RESTROOM FOUNDATION & ROOF FRAMING PLAN
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ED-101	ELECTRICAL DEMOLITION SITE PLAN
ED-102	EXISTING ELECTRICAL SITE PLAN
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ET24101	ENERGY COMPLIANCE DOC. - INTERIOR LIGHTING (RESTROOM)
ET24102	ENERGY COMPLIANCE DOC.-INTERIOR LIGHTING (KIOSK)
PLUMBING	
P1.0	PLUMBING NOTES, SCHEDULES, LEGEND & ABBREVIATIONS
P2.0	PLUMBING DETAILS
P3.0	PLUMBING FLOOR PLANS (RESTROOMS) WASTE AND WATER
P3.1	PLUMBING FLOOR PLANS (KIOSK) WASTE AND WATER

SCOPE OF WORK

PROJECT GENERALLY INCLUDES, BUT IS NOT LIMITED TO:

- DEMOLITION OF EXISTING SITE IMPROVEMENTS, INCLUDING RESTROOM BUILDING, TRELLIS STRUCTURE, STONE WALLS, CURBS, GUTTERS, SIDEWALKS, EXISTING UTILITIES, AND SELECT TREES AND LANDSCAPING.
- CONSTRUCTION OF 504 SF SITE BUILT RESTROOM BUILDING AND 165 SF SITE BUILT KIOSK AND ASSOCIATED FOUNDATIONS AND UTILITIES.
- CONSTRUCTION OF SURROUNDING PLAZA AND PATIO SPACE, INCLUDING BRICK PAVEMENT, SEATWALLS, STAIRS, GRANITECRETE PATIO, METAL RAILINGS, BAR SEATING AREA AND DIGITAL ART KIOSK.
- SITE UTILITES, INCLUDING NEW DOMESTIC WATER SERVICE, SEWER, AND ELECTRICAL.
- SITE FURNISHINGS, INCLUDING BENCHES, TABLES, PLANTER POTS, DRINKING FOUNTAIN, LIGHT POLES, AND STRING LIGHTS.
- NEW IRRIGATION TO TIE INTO EXISTING SYSTEM.
- NEW LANDSCAPE BOULDERS AND TREE, SHRUB, AND TURF-GRASS PLANTING, INCLUDING LARGE BOX SPECIMEN OLIVE TREES AT GRANTECRETE PATIO.

PROJECT DIRECTORY

OWNER
City of San Luis Obispo Public Works
990 Palm Street — Phone: 805-783-7735
San Luis Obispo, CA 93401 — Fax:
Shelsie Moore, Supervising Civil Engineer

ARCHITECT / LANDSCAPE ARCHITECT / CIVIL / STRUCTURAL
RRM Design Group
3765 S. Higuera St. Ste 102 — Phone: (805) 543-1794
San Luis Obispo, CA 93401 — Fax: (805) 543-4609
Kathryn Hicks, Project Manager

ELECTRICAL ENGINEER
Thoma Electric
3562 Empleo St., Ste. C — Phone: (805) 543-3850
San Luis Obispo, CA 93401 — Fax:
Christopher Jose

SAN LUIS OBISPO COUNTY, CALIFORNIA

MISSION PLAZA ENHANCEMENTS

APPROVED BY

Brian A. Nelson, City Engineer *R.C.E. C79870* *Approved Date*

SPECIFICATION NO.	DATE	SHEET
91439-01	05.14.2024	G001
	FILE NO./LOCATION 0256-03-CU20	

TOPOGRAPHIC SURVEY

PREPARED BY: WALLACE GROUP
DATE: JANUARY, 2016
PROJECT No.: 0061-0084

DATUM:

CORDINATES SHOWN ARE BASED ON HORIZONTAL CONTROL POINTS 8044 & 8046 AS PUBLISHED IN THE CITY OF SAN LUIS OBISPO 2007 HORIZONTAL CONTROL NETWORK (NORTH AMERICAN DATUM OF 1983 (NAD83) EPOCH DATE 1991.35, ZONE 5 CALIFORNIA). THE BEARING BETWEEN CONTROL POINTS BEARS NORTH 88°16'09.74" EAST 1240.47'

ELEVATIONS SHOWN ARE BASED ON THE CITY OF SAN LUIS OBISPO BENCHMARK SYSTEM 2007 REFERENCED TO BENCHMARK NO. 373 WITH AN ELEVATION OF 193.02'. CITY BENCHMARK SYSTEM IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). NOTE: THE CITY OF SAN LUIS OBISPO BENCHMARK SYSTEM 2020 REFERENCES BENCHMARK NO. 373 WITH AN ELEVATION OF 192.86' (NAVD88).

SURVEY NOTES

1. ALL MEASUREMENTS LISTED, SHOWN AND REPRESENTED HEREON ARE BASED ON GROUND DISTANCES.
2. THE CONTOUR INTERVAL IS 1 FOOT.
3. THIS SURVEY WAS DONE FOR THE PURPOSE OF MASTER PLAN DESIGN FOR THE MISSION PLAZA AND SURROUNDING STREETS.
4. UNDERGROUND UTILITY LOCATIONS ARE PLOTTED BASED ON ABOVE GROUND PAINT MARKS BY OTHERS, ABOVE GROUND SURFACE STRUCTURES. ACTUAL LOCATION MAY DIFFER. ADDITIONAL UNDERGROUND UTILITY LINES MAY EXIST. FOR MORE INFORMATION REGARDING UTILITY LOCATION, SIZE, DEPTH, CONDITION, AND CAPACITY CONTACT UTILITY OR MUNICIPAL/PUBLIC SERVICE FACILITY.
5. UNDERGROUND PIPE SIZES ARE BASED ON VISUAL OBSERVATIONS MADE FROM THE SURFACE AND ARE APPROXIMATE.
6. EASEMENTS AFFECTING THE PROPERTY SHOWN HEREON MAY EXIST. NO TITLE INFORMATION WAS PROVIDED. NO ATTEMPT HAS BEEN MADE TO PLOT EASEMENTS.

811 Know what's below. Call 811 before you dig.

PROJECT SOILS REPORT

PREPARED BY:	EARTH SYSTEMS PACIFIC 4378 OLD SANTA FE ROAD SAN LUIS OBISPO, CA 93401
DATE:	OCTOBER 21, 2022
UPDATED:	N/A
REPORT NAME:	GEOTECHNICAL ENGINEERING REPORT MISSION PLAZA RESTROOM AND CAFE SAN LUIS OBISPO, CALIFORNIA
PREPARER:	Robert Down, PE
LICENSE:	PE 70206

EARTHWORK QUANTITIES

AREA OF DISTURBANCE:	6,700 SQUARE FEET
MAXIMUM CUT HEIGHT:	1 FOOT
MAXIMUM FILL HEIGHT:	2 FEET
RAW CUT:	80 CUBIC YARDS
RAW FILL:	70 CUBIC YARDS
ADJUSTED FILL: (ASSUME 0% SHRINK/SWELL)	70 CUBIC YARDS
NET QUANTITY:	10 CUBIC YARDS EXPORT

THE APPROXIMATE RAW EARTHWORK QUANTITIES SHOWN HEREON REPRESENT THE ESTIMATED VOLUMETRIC DIFFERENCE CALCULATED BETWEEN THE PROPOSED SUBGRADE AND ESTIMATED EXISTING SUBGRADE SURFACE, AND ARE SUBJECT TO CHANGE. THESE ESTIMATES DO NOT INCLUDE CONSIDERATIONS FOR LOSSES OR BULKING DUE TO: SOIL AMENDMENTS, STABILIZATION, CONSTRUCTION TECHNIQUE, FOOTING & TRENCHING SPOILS, ETC. THESE CONSIDERATIONS, IN ADDITION TO ACTUAL FIELD CONDITIONS AND THE FINAL RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER, MAY SIGNIFICANTLY EFFECT THE FINAL IMPORT/EXPORT QUANTITIES. APPROXIMATE QUANTITIES SHOWN ON THESE PLANS ARE FOR PERMITTING PURPOSES ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALCULATE ACTUAL QUANTITIES FOR THE PURPOSE OF CONSTRUCTION AND COST ESTIMATES. CONTRACTOR IS ALSO RESPONSIBLE FOR ADJUSTMENTS TO SLOPE HINGE POINTS IN ORDER TO PROVIDE GRADED PAD AREA ADJACENT TO PATHS, WALKWAYS, AND ROADS FOR UTILITY BOXES, TRANSFORMERS, AND ABOVE GROUND UTILITY INFRASTRUCTURE.

APPROXIMATE RAW EARTHWORK QUANTITIES SHOWN ABOVE FOR BIKE PATH AREA BETWEEN FOOTHILL BLVD AND RAMONA DRIVE ONLY. APPROXIMATE RAW EARTHWORK QUANTITIES FOR REMAINING PROJECT AREAS ARE NOT PROVIDED. CONTRACTOR IS RESPONSIBLE FOR ANY/ALL MATERIALS QUANTITIES, EARTHWORK QUANTITIES ASSOCIATED WITH WORK SHOWN HEREIN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALCULATE ACTUAL QUANTITIES FOR THE PURPOSE OF BIDDING, COST ESTIMATES AND CONSTRUCTION.

LEGEND

PROPERTY/RIGHT-OF-WAY LINE (ROW)
CENTER LINE
SAWCUT AND CONFORM LINE
LIMIT OF WORK (LIMIT OF WORK)
FENCE LINE
FLOW LINE
GRADE BREAK (GB)
TREE PROTECTION ZONE
STRIPING
TYPE II SLURRY SEAL
EXISTING POLE LIGHT
PROPOSED POLE LIGHT
PROPOSED DRINKING FOUNTAIN/BOTTLE FILLER
STORM DRAIN LINE (SD)
WATER LINE (W)
SEWER LINE (SS)
EXISTING MANHOLE (S)
EXISTING SIGN
EXISTING WATER VALVE
EXISTING CLEANOUT (CO)
EXISTING WATER (W)
EXISTING SEWER (SS)
EXISTING STORM DRAIN (SD)
EXISTING OVERHEAD LINES (OH)
EXISTING MAJOR CONTOUR (315)
EXISTING MINOR CONTOUR (315)
PROPOSED MAJOR CONTOUR (315)
PROPOSED MINOR CONTOUR (315)

FLOODPLAIN AND DRAINAGE COMPLIANCE

THE PROJECT PROPERTY IS LOCATED WITHIN A FLOOD ZONE AS MAPPED BY FEMA MAP NUMBER 06079C1068G DATED NOVEMBER 16, 2012. THE LIMITS OF FLOOD ZONE AE ARE DEPICTED ON THE GRADING AND DRAINAGE PLAN SHEET. ALL PROPOSED STRUCTURES AND UTILITIES SHOWN ON THESE PLANS COMPLY WITH THE CITY OF SAN LUIS OBISPO DRAINAGE DESIGN MANUAL AND FLOODPLAIN MANAGEMENT REGULATIONS.

STORMWATER COMPLIANCE

THE PROJECT CONSISTS OF:

- SIDEWALK AND PLAZA RECONSTRUCTION
- BUILDING DEMOLITION
- BUILDING CONSTRUCTION
- LANDSCAPING & IRRIGATION
- NET IMPERVIOUS AREA OF LESS THAN 5,000 SQUARE FEET

THE PROJECT IS A REGULATED PROJECT SUBJECT TO CENTRAL COAST POST-CONSTRUCTION STORMWATER REQUIREMENT 1 PER RESOLUTION R3-2013-0032. REFER TO PROJECT STORMWATER CONTROL PLAN APPLICATION FOR FURTHER DETAILS.

ABBREVIATIONS

AB	AGGREGATE BASE	PL	PROPERTY LINE
AC	ASPHALT CONCRETE	PCL	PARCEL
AP	ANGLE POINT	PCC	PORTLAND CEMENT CONCRETE
ARV	AIR RELEASE VALVE		
BCR	BEGIN CURVE	POC	POINT OF CURVE/POINT OF CONNECTION
BW	BACK OF WALK		
CB	CATCH BASIN	POT	POINT OF TANGENT
CL/CL.	CENTERLINE/CLASS	PRC	POINT OF REVERSE CURVE
CMP	CORRUGATED METAL PIPE	ROW	RIGHT OF WAY
CONC.	CONCRETE	RET. WALL	RETAINING WALL
DBH [OF A TREE]	DIAMETER AT BREAST HEIGHT	RP	REDUCED PRESSURE
		RW	RECYCLED WATER
DI	DRAIN INLET	SD	STORM DRAIN
DIP	DUCTILE IRON PIPE	SFM	SEWER FORCE MAIN
EG	EXISTING GRADE	SL	STREET LIGHT/SERVICE LATERAL
EX.	EXISTING		
ELEV	ELEVATION	SS	SANITARY SEWER
FDC	FIRE DEPARTMENT CONNECTION	STA	STATION
		STD.	STANDARD
FG	FINISHED GRADE	TBD	TO BE DETERMINED
FL	FLOWLINE	TBM	TEMPORARY BENCHMARK
FS	FINISHED SURFACE	TC	TOP OF CURB
FFE	FINISHED FLOOR ELEVATION	TF	TOP OF FOOTING
FW	FIRE WATER	TP	TOP OF PAVEMENT
HP	HIGH POINT	TG	TOP OF GRATE
IPS	IRON PIPE SIZE	TYP.	TYPICAL
JT	JOINT TRENCH	TW	TOP OF WALL
LP	LOW POINT	UON	UNLESS OTHERWISE NOTED
MAX.	MAXIMUM	W	WATER
EL.	MINIMUM	WSE	WATER SURFACE ELEVATION
NTS	NOT TO SCALE		

GENERAL CONSTRUCTION NOTES

1. ALL WORK SHALL BE PERFORMED IN CONFORMANCE WITH THESE PLANS, SPECIAL PROVISIONS PREPARED FOR THIS PROJECT AND THE 2020 CITY OF SAN LUIS OBISPO STANDARD SPECIFICATIONS AND ENGINEERING STANDARDS, IN CONJUNCTION WITH THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND STANDARD PLANS, 2015 EDITION (UNREVISED), AND LATEST EDITION OF CALIFORNIA MUTCD.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR PERMITTEE TO CONTACT "UNDERGROUND SERVICE ALERT OF NORTHERN/CENTRAL CALIFORNIA" BY PHONE AT 8-1-1 FORTY-EIGHT (48) HOURS PRIOR TO START OF CONSTRUCTION FOR LOCATION OF POWER, TELEPHONE, OIL AND NATURAL GAS UNDERGROUND FACILITIES. CONTRACTOR OR PERMITTEE SHALL ALSO CONTACT THE APPROPRIATE AGENCY FOR THE LOCATION OF CABLE T.V., WATER, SEWER, DRAINAGE OR UNDERGROUND FACILITIES.
3. THESE PLANS DO NOT INDICATE ALL EXISTING FACILITIES IN THE VICINITY OF THE PROPOSED WORK SUCH AS EXISTING IRRIGATION HEADS AND LINES, SHRUBBERY AND VEGETATION, ETC. THE CONTRACTOR MUST USE CARE TO AVOID DAMAGE TO ANY EXISTING IMPROVEMENTS OR VEGETATION IN THE VICINITY OF THE WORK, AND MUST REPAIR ANY FACILITIES DAMAGE DURING CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER.
4. WHERE TRIMMING OF EXISTING VEGETATION IS REQUIRED DURING CONSTRUCTION IT MUST BE DONE IN A MANNER TO REMOVE THE MINIMUM POSSIBLE AMOUNT OF VEGETATION AND LEAVE THE REMAINING IN AN ATTRACTIVE CONDITION. CONTRACTOR MUST COORDINATE WITH CITY ARBORIST PRIOR TO TRIMMING OF ANY VEGETATION.
5. PROTECT TREE BRANCHES, TRUNK, ROOTS AND FOLIAGE THROUGH PROPER TRIMMING AND CONSTRUCTION TECHNIQUES WHENEVER POSSIBLE PER CITY STD SECTION 20.
6. CONSULT WITH WITH THE CITY'S ARBORIST PRIOR TO PRUNING OR WORKING WITHIN THE DRIPLINE OF ANY TREE. ALL PRUNING OF TREES SHALL BE KEPT TO A MINIMUM AND MUST FOLLOW CITY OF SAN LUIS OBISPO STANDARDS.
7. NO TREES, OTHER THAN THOSE INDICATED ON THE DRAWINGS, SHALL BE REMOVED WITHOUT PRIOR APPROVAL OF THE CITY.
8. NO MATERIALS OR EQUIPMENT SHALL BE STORED WITHIN THE DRIPLINE OF ANY TREE.
9. THESE PLANS DO NOT INDICATE ALL OVERHEAD LINES. CONTRACTOR SHALL TAKE CARE DURING CONSTRUCTION TO AVOID CONTACT WITH OR DAMAGE TO EXISTING OVERHEAD LINES.
10. ANY EXISTING UTILITIES AND IMPROVEMENTS THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S SOLE EXPENSE.
11. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND AGENCIES WITH SERVICES IN THE AREA PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES AND COORDINATE WITH THE UTILITY COMPANIES AFFECTED BY CONSTRUCTION.
12. PROTECT SURVEY MONUMENTS IN PLACE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE REPLACEMENT OF DAMAGED OR DISPLACED SURVEY MONUMENTS AND SHALL NOTIFY THE CITY FIVE (5) WORKING DAYS PRIOR TO RESTORING MONUMENTS. MONUMENTS SHALL BE RESET BY A CALIFORNIA LICENSED LAND SURVEYOR AND SHALL INCLUDE PREPARING AND FILING A CORNER RECORD WITH SAN LUIS OBISPO COUNTY.
13. ALL STRIPING AND MARKINGS SHALL BE PER CALTRANS REVISED STANDARD PLANS 2015 -A20A, A20B, A20C, A20D, A24A, A24B, A24C, A24D, AND A24E. ANY STRIPING NOT MARKED FOR REMOVAL SHALL BE PROTECTED IN PLACE. SEE SPECIAL PROVISIONS SECTION 84.
14. ALL CURB, GUTTER, AND SIDEWALK IMPROVEMENTS SHALL BE COMPLETED PRIOR TO THE START OF PAVING WORK.
15. CONCRETE SIDEWALKS MUST CONFORM TO ENGINEERING STANDARDS 4110 & 4220.
16. REMOVAL AND REPLACEMENT OF EXISTING CONCRETE SHALL CONFORM TO ENGINEERING STANDARD 4910.
17. ALL EQUIPMENT SUBMITTALS, INCLUDING PATH/STREET LIGHTING, SIGNS, ETC. SHALL BE APPROVED BY CITY PRIOR TO INSTALLATION.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING UTILITY COVERS IN FIELD.
19. PROTECT UTILITY COVERS IN PLACE. ENSURE EXCESSIVE LIP BETWEEN COVER AND SLURRY DOES NOT FORM. THERMOPLASTIC STRIPING PLACED ON CONCRETE REQUIRES A PRIMER COAT PRIOR TO APPLICATION.
20. CONTRACTOR SHALL USE PRECAUTION TO PREVENT DISRUPTION OF PROJECT SITE IN AREAS OUTSIDE CONSTRUCTION ZONE. DAMAGES SHALL BE REPLACED OR REPAIRED BY CONTRACTOR. CONTRACTOR SHALL SUBMIT VIDEO LOG OF CONSTRUCTION SITE THROUGHOUT DURATION OF PROJECT.
21. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 48 HOURS BEFORE COMMENCING WORK.
22. PROPOSED DEVIATIONS FROM THE PLANS MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL, INCLUDING FIELD REVISIONS REQUESTED BY THE CITY INSPECTOR.
23. THE CONTRACTOR SHALL EMPLOY ALL LABOR, EQUIPMENT, AND METHODS REQUIRED TO PREVENT THEIR OPERATIONS FROM PRODUCING DUST IN AMOUNTS DAMAGING TO PROPERTY, CULTIVATED OR NATIVE VEGETATION, AND DOMESTIC AND NON-DOMESTIC ANIMALS OR CAUSING A NUISANCE TO PERSONS OCCUPYING BUILDINGS IN THE VICINITY OF THE JOB SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY DUST RESULTING FROM THEIR OPERATIONS.
24. CONSTRUCTION LINE AND GRADE STAKES SHALL BE SET BY A CIVIL ENGINEER OR SURVEYOR LICENSED IN THE STATE OF CALIFORNIA.
25. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OR PROPER RESETTING OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS. ANY SURVEY MONUMENTS DESTROYED BY THE CONTRACTOR SHALL BE REPLACED IN ACCORDANCE WITH THE STATE LAND SURVEYORS ACT AT THE CONTRACTOR'S EXPENSE.
26. ALL PROTECTIVE DEVICES TO BE INSTALLED BY THE CONTRACTOR, SHALL BE IN PLACE AT THE END OF EACH WORK DAY. A SAFE PEDESTRIAN PATH OF TRAVEL SHALL BE PROVIDED AT ALL TIMES TO AND FROM BUILDING ENTRANCES TO PARKING FACILITIES. COORDINATE PEDESTRIAN WALK CLOSURES WITH OWNER PRIOR TO CONSTRUCTION.
27. CONTRACTOR SHALL REFER TO MATERIALS SPECIFICATIONS THROUGHOUT THE APPROVED PLAN SET AND SPECIFICATIONS. ANY SUBSTITUTIONS OF THE MATERIALS SPECIFIED IN THESE DOCUMENTS SHALL REQUIRE WRITTEN APPROVAL FROM THE CITY.
28. DURING THE COURSE OF WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING THE CITY OF SAN LUIS OBISPO FOR TESTING AND INSPECTION 48 HOURS IN ADVANCE. WORK NOT PROPERLY TESTED AND INSPECTED WILL BE SUBJECT TO REJECTION.
29. WORK IN AND ALONG PUBLIC STREETS AND PARKING LOTS, ONCE BEGUN, SHALL PROCEED TO COMPLETION WITHOUT DELAY SO AS TO PROVIDE MINIMUM INCONVENIENCE TO THE PUBLIC.
30. SUBSURFACE UTILITY DATA IS DEPICTED TO LEVEL C OF CI/ASCE 38-02 AS DEFINED IN THE GUIDANCE OF THE EXISTING UTILITY DATA. CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF LOCATION OF ALL EXISTING UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION. ALL UTILITIES SHALL BE PROTECTED AND REPAIRED BY THE CONTRACTOR IF DAMAGED. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF ALL UTILITY COMPANIES 48 HOURS PRIOR TO THE BEGINNING OF WORK. BRING ANY CONFLICTS WITH NEW IMPROVEMENTS IMMEDIATELY TO THE ATTENTION OF THE CITY.
31. ENTRANCE TO THE SITE AND LAY DOWN AREA DURING CONSTRUCTION SHALL BE SPECIFIED BY THE CITY.
32. CONTRACTOR SHALL PROVIDE A LEGIBLE AND COMPLETE SET OF PLANS IDENTIFYING ALL MODIFICATIONS MADE DURING CONSTRUCTION TO THE CITY FOR THE PREPARATION OF RECORD DRAWINGS.
33. ALL CONSTRUCTION SHALL CONFORM TO LATEST EDITION OF CALIFORNIA BUILDING CODE TITLE 24.
34. CONTRACTOR SHALL NOTIFY BUSINESSES OF WORK PRIOR TO COMMENCEMENT OF CONSTRUCTION. COORDINATE NOTIFICATION EFFORTS WITH CITY OF SAN LUIS OBISPO.
35. THIS PROJECT SHALL COMPLY WITH THE 2019 EDITIONS OF THE CALIFORNIA BUILDING CODE (CBC), CALIFORNIA MECHANICAL CODE (CMC), CALIFORNIA PLUMBING CODE (CPC), CALIFORNIA ELECTRICAL CODE (CEC), CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBS), AND THE CALIFORNIA ENERGY CODE (CENC), ALL AMENDMENTS TO THE CA CODES ADOPTED BY THE CITY OF SAN LUIS OBISPO, AND ALL OTHER CODES, REGULATIONS, AND APPROVALS ESTABLISHED BY THE CITY OF SAN LUIS OBISPO.

ADDITIONAL NOTES

1. ALL WORK LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY OR WITHIN THE JURISDICTION OF THE UTILITIES AND PUBLIC WORKS DEPARTMENTS SHALL COMPLY WITH THE MOST CURRENT EDITION OF THE ENGINEERING STANDARDS AND SPECIFICATIONS.
2. A SEPARATE ENCROACHMENT PERMIT IS REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY, WITHIN CITY EASEMENTS, OR FOR CONNECTIONS FOR PUBLIC UTILITIES. WORK REQUIRING AN ENCROACHMENT PERMIT INCLUDES BUT IS NOT LIMITED TO DEMOLITIONS, UTILITIES, WATER, SEWER, AND FIRE SERVICE LATERALS, CURB, STREET TREE PLANTING OR PRUNING, CURB RAMPS, STREET PAVING, AND PEDESTRIAN PROTECTION OR CONSTRUCTION STAGING IN THE RIGHT-OF-WAY.
3. CURB, GUTTER, SIDEWALK, OR DRIVEWAY APPROACH DAMAGED BY THE CONTRACTOR IN THE COURSE OF THEIR WORK SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE PUBLIC WORKS ENGINEER.
4. THE ADJOINING STREET SHALL BE CLEANED BY SWEEPING TO REMOVE DIRT, DUST, MUD AND CONSTRUCTION DEBRIS AT THE END OF EACH DAY.
5. A TRAFFIC AND PEDESTRIAN CONTROL PLAN SHALL BE SUBMITTED TO THE PUBLIC WORKS DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO ENCROACHMENT PERMIT ISSUANCE.
6. ANY EXISTING SURVEY MONUMENTS SHALL BE PROTECTED IN PLACE OR SHALL BE TIED OUT BY A LICENSED LAND SURVEYOR PRIOR TO DISTURBANCE AND THEN REPLACED PRIOR TO OCCUPANCY IN ACCORDANCE WITH SECTION 8771 OF THE CALIFORNIA BUSINESS AND PROFESSIONS CODE.
7. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AND MAINTAINED TO THE SATISFACTION OF THE BUILDING OFFICIAL AND PUBLIC WORKS ENGINEER DURING ALL DEMOLITIONS, CONSTRUCTION AND GROUND DISTURBING ACTIVITIES.

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

GENERAL NOTES

PROJECT TITLE:

SHEET TITLE:

100% CONSTRUCTION DOCUMENTS

ENGINEER OF RECORD:

REGISTERED PROFESSIONAL ENGINEER ROBERT A. CALCAGNO No. 76587 CIVIL STATE OF CALIFORNIA

DATE:

DESIGNED BY:	NLS
DRAWN BY:	NLS
CHECKED BY:	RC
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	G002

FINDINGS

1. As conditioned, the project is consistent with the goals and policies of the City's General Plan for development in the Downtown Area and for Public and Cultural Facilities (Land Use Element (LUE) §§ 4 & 5) and with policies and programs for the treatment of Cultural Resources (Conservation and Open Space Element (COSE) § 3). The project improves and enhances Mission Plaza's function as a space to accommodate public socialization in a setting which is festive and comfortable for public gatherings, walking, and sitting (LUE §§ 4.4 & 4.5). The reconstructed restroom facilities are sited and designed such that the space is observable from the Plaza walkway and adjacent streets, and the multi-use kiosk building "activates" the space, to enhance public safety (LUE §§ 4.8 & 4.9). The style and character of the new buildings have been carefully considered for compatibility with architecturally and historically significant buildings adjacent to the Plaza and in the Downtown Historic District, and the project involves no changes to the historic Murray Adobe (COSE §§ 3.3.1, 3.3.5, & 3.6.3). Condition of approval #3 requires an archeological monitoring plan to be prepared and implemented, for the protection of, and avoidance of adverse effects on, potential archaeological resources, consistent with the City's Archaeological Resource Preservation Program Guidelines (COSE §§ 3.5.1 & 3.5.4).

2. The project conforms to the standards set forth in the City's Zoning Regulations. The proposed replacement restrooms, new kiosk, and new outdoor seating area will provide amenities for continued public use of the property within a Public Facility (PF) Zone and are designed and sited in a manner consistent with applicable Property Development Standards (Zoning Regulations § 17.10.020 & Ch. 17.48).

3. On April 25, 2022, the Cultural Heritage Committee found the project, as conditioned, to be consistent with the City's Historic Preservation Ordinance (SLOMC Ch. 14.01) and with the supporting Historical Preservation Program Guidelines (HPPG). The property is located within the Downtown Historic District. Consistent with guidelines for construction in historic districts (HPPG §§ 3.1 & 3.2), proposed new buildings are of limited size and scale, their materials, colors, and detailing have been carefully considered for architectural compatibility with the style and details exhibited by important historic buildings in the Downtown Historic District, without seeking to directly copy or mimic these buildings, and they have been sited in a manner that enhances views through to the Murray Adobe from the street (HPPG §§ 3.2.1 & 3.2.2). Condition of approval #2 requires implementation of monitoring during construction activities to provide protection guidance for work adjacent to the Murray Adobe, and attention to appropriate surface treatment adjacent to the building to protect it from further moisture damage.

4. The project is consistent with Community Design Guidelines, including Downtown Design Guidelines (CDG Ch. 4). The proposed buildings are designed with consideration of the site context, incorporating local themes inspired by nearby historic buildings within the Downtown Historic District, and employ authentic building styles, design elements, and materials (§§ 1.4 (A), 2.1, & 4.2 (D)).

5. The work proposed under the project is categorically exempt from further environmental review, described in the Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines). It involves: replacement of the restroom building on the same site, for the same purpose and capacity, an existing structure as described in Guidelines
§ 15302 (Replacement or Reconstruction); construction of a small kiosk building to be put to uses which are allowed in the Public Facilities (PF) Zone, with all necessary services and facilities available, as described in Guidelines § 15303 (New Construction of Small Structures); and creation of an outdoor seating area through minor alteration of an existing public facility, as described in Guidelines § 15301.

CONDITIONS

REFERENCE

Please note the project conditions of approval do not include mandatory code requirements. Code compliance will be verified during the plan check process, which may include additional requirements applicable to the project.

CONDITIONS	REFERENCE
Planning 1. Conformance to approved plans. Final project design and construction drawings submitted for building permits shall be in substantial compliance with the plans approved by this application, and with all conditions of approval. A separate full-size sheet shall be included in plans submitted for permits, listing all conditions of project approval. Reference shall be made in the margin of the listed conditions as to where in plans requirements are addressed. Any change to approved design, colors, materials, landscaping or other conditions of approval must be reviewed and approved by the Community Development Director.	See the current sheet.
2. Adobe Protection. A qualified Historic Architect or Architectural Historian with demonstrated experience working with Adobe structures shall be retained to monitor and provide protection guidance for any work in the immediate vicinity of the perimeter of the Murray Adobe. Final plans for construction permits to complete this project shall note this requirement and construction permits shall not be issued until a monitoring plan has been approved by the Community Development Director. Improvements adjacent to the base and perimeter of the Adobe shall be limited to decomposed granite, pea gravel, or similar surface, appropriately sloped to promote drainage away from the building and protect the building from damage by moisture, runoff, or new vegetation.	See Note 6 on LC101. See details on CG101 and LC101 for paving conditions adjacent to the Adobe. Sheet A-911 added to plan set to document required Adobe preservation work. Historian report added to Special Provisions as Appendix C.
3. Archaeological Monitoring. The applicant shall provide an archeological monitoring plan prepared by a City-qualified archeologist to be implemented during construction. The plan shall identify the qualified professional who will conduct the monitoring and circumstances where a Native American tribal representative or qualified site monitor is required. The plan shall recommend specific procedures for responding to the discovery of archeological resources during the construction of the project consistent with § 4.60 of the Archaeological Resource Preservation Program Guidelines. The plan shall be submitted as a part of the building permit.	Monitoring report provided as part of Special Provisions as Appendix D.
Engineering 4. Plans submitted for construction permits to complete the project shall include an overall site plan depicting the existing structures, demolitions, new structures, site improvements, and all trees and their disposition.	See sheet LC101 for Construction Plan. See sheet CD101 for Demolition Plan. See sheet TP001 for Tree Protection Plan.
5. Plans submitted for construction permits to complete the project shall include a utility plan showing existing and proposed utility services for reference. The plan shall show the limits of existing, new, replaced, abandoned, and relocated services where applicable.	See sheet CG102 for Utility Plan.
6. Plans submitted for construction permits to complete the project shall include a grading and drainage plan to show the limit and extent of grading and drainage modifications to the plaza. Improved and re-directed drainage shall be conveyed in a non-erosive manner to an approved outlet.	See sheet CG102 for Grading and Drainage Plan.
7. Plans and materials submitted for construction permits to complete the project shall show and note compliance with the City's Floodplain Management Regulations, Drainage Design Manual (DDM), and Post Construction Stormwater Regulations (PCR). The plans and supporting documents shall show that the new structures are located above or outside the mapped Special Flood Hazard Area. The submittal shall include a summary drainage report in accordance with § 2.3.1 of the Drainage Design Manual. DDM compliance may be documented as a minor project in a format provided by the city. Post Construction Stormwater Regulations compliance documentation should clearly describe the relationship of this first phase of the Mission Plaza Concept Plan to the overall Concept Plan project. The phased development approach and PCR compliance strategy shall be resolved with the first phase of permitting to the satisfaction of the Community Development and Public Works departments.	See sheet CG102 for Grading and Drainage Plan, Stormwater Control Plan application, and summary drainage memorandum.
8. The City supports the proposed tree removals and relocations with compensatory planting as established by the City Arborist. The building permit plan submittal shall include a tree preservation plan per City Standards and Specifications, to the satisfaction and approval of the City Arborist.	See sheet TP001 for Tree Preservation Plan and TP501 for Tree Protection Details.
Utilities 9. Plans and materials submitted for construction permits to complete the project shall indicate the provision of separate water meters for domestic (for bathroom and café) and landscape service. It is noted that the site has one existing two-inch water meter that can be modified to provide two meters (3/4" or 1"), as needed.	New domestic water service has been provided. See sheet CG102.
10. Plans and materials submitted for construction permits to complete the project shall identify, depict, and describe existing and proposed storage for three waste streams (trash, recycling, and organics) and proposed methods of collection (i.e., Parks Maintenance, San Luis Garbage service, etc.).	Sheet LC101 includes (2) permanent triple waste stream receptacles placed in the plaza. It also includes a trash enclosure adjacent to the building which will hold rolling receptacles. See note 5 on sheet.

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

CONDITIONS OF APPROVAL

SHEET TITLE:

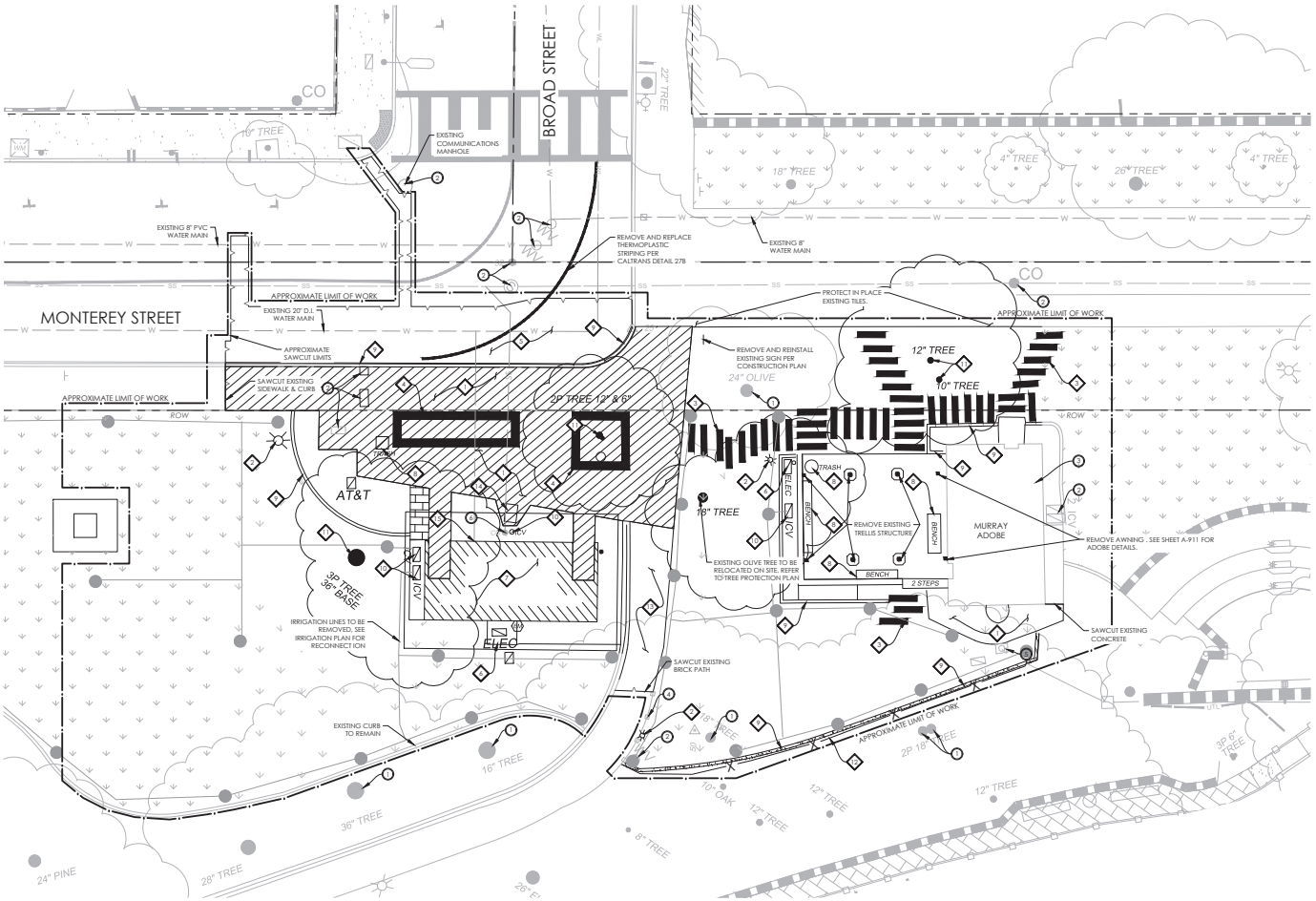
100% CONSTRUCTION DOCUMENTS

ENGINEER OF RECORD:

REGISTERED PROFESSIONAL ENGINEER
ROBERT A. CALCAGNO
No. 76597
CIVIL
STATE OF CALIFORNIA

DATE:

DESIGNED BY:	NLS
DRAWN BY:	NLS
CHECKED BY:	RC
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	**G003**



NOTES

1. THE EXISTING SITE CONDITIONS SHOWN HEREIN HAVE BEEN COMPILED BASED ON TOPOGRAPHIC FIELD SURVEYS AND AS-BUILT DRAWINGS OF THE EXISTING IMPROVEMENTS. IT IS THE RESPONSIBILITY OF THE PROJECT CONTRACTOR TO VERIFY FIELD CONDITIONS, ESPECIALLY AT CRITICAL JOIN LOCATIONS AND REPORT ANY/ALL DISCREPANCIES IMMEDIATELY TO THE ENGINEER OF RECORD AND THE GOVERNING AGENT FOR THEIR REVIEW PRIOR TO CONSTRUCTION.
2. SUBSURFACE UTILITY DATA IS DEPICTED TO LEVEL "C" OF CI/ASCE 38-02 AS DEFINED IN THE GUIDELINE FOR DEPICTION OF EXISTING SUBSURFACE UTILITY DATA. REFER TO "UTILITY NOTES" ON THE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
3. IT IS THE RESPONSIBILITY OF THE PROJECT CONTRACTOR TO CONTACT USA NORTH AT 1-800-642-2444 BEFORE ANY TRENCHING OR EXCAVATION WORK.
4. SEE ELECTRICAL DEMO PLANS FOR NOTES AND DETAILS.
5. UTILITIES SHOWN ARE ACCURATE TO THE EXTENT OF THE AVAILABLE RECORDS AND KNOWLEDGE. THE CONTRACTOR HAS THE RESPONSIBILITY TO VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND TO NOTIFY UTILITY COMPANIES WHEN WORKING IN THEIR PROXIMITY. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL POTHOLE TO VERIFY ALL EXISTING UTILITY POINTS OF CONNECTION AND ELEVATIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IF ANY DISCREPANCIES EXIST BETWEEN THE PLANS AND FIELD WORK CONDITIONS PERTAINING TO MATERIALS, ELEVATIONS, LOCATIONS,ETC., PRIOR TO CONTINUING WORK

PROTECTION KEY NOTES

1. PROTECT AND PRESERVE EXISTING TREE IN PLACE; SIZE PER PLAN. SEE TREE PROTECTION PLAN FOR NOTES AND DETAILS.
2. PROTECT AND PRESERVE EXISTING WET UTILITY VAULTS, MANHOLES, AND OTHER SURFACE APPURTENANCES IN PLACE. ADJUST TO FINISHED GRADE WHERE NECESSARY PER CITY OF SAN LUIS OBISPO STANDARD 6040. REFER TO ELECTRICAL PLANS FOR LID REPLACEMENT/REMOVAL AND OTHER ELECTRICAL APPURTENANCES TO BE PROTECTED.
3. PROTECT AND PRESERVE EXISTING HISTORIC BUILDING IN PLACE. WORK SURROUNDING THE ADOBE TO BE MONITORED BY A HISTORIAN. ALL WORK ADJACENT TO EXISTING ADOBE TO BE BY HAND TOOL ONLY. REFER TO ARCHITECTURE PLANS & HISTORIAN REPORT.
4. PROTECT EXISTING RAILING IN PLACE.
5. PROTECT EXISTING CAMERA, POLE, AND FOOTING IN PLACE.
6. PROTECT EXISTING SEWER CLEANOUT. ADJUST TO GRADE PER CITY OF SAN LUIS OBISPO STANDARD 6040.

DEMOLITION KEY NOTES

1. REMOVE EXISTING CONCRETE.
2. REMOVE EXISTING POLE FOUNDATION AND SALVAGE EXISTING LIGHT FIXTURE AND DELIVER TO CITY CORP YARD. REFER TO ELECTRICAL PLANS FOR REUSE OF CONDUITS.
3. REMOVE EXISTING CONCRETE PAVERS AND SALVAGE TO THE CITY CORPORATION YARD.
4. REMOVE AND SALVAGE EXISTING STONE AND STOCKPILE ON SITE FOR USE IN PROPOSED WALL. CAREFULLY REMOVE STONE SO AS TO PRESERVE LARGEST PIECES POSSIBLE.
5. SAWCUT AND REMOVE EXISTING ASPHALT OVERLAY OVER PCC PAVEMENT.
6. REMOVE EXISTING ELECTRICAL BOX. RELOCATE UTILITIES FOR USE WITH NEW RESTROOM. SEE ELECTRICAL PLANS FOR TEMPORARY POWER PLANS AND CONNECTION TO POLE MOUNTED CAMERA.
7. REMOVE AND PROPERLY DISPOSE OF EXISTING RESTROOM BUILDING, INTERIOR FIXTURES, AND FOOTING. PROTECT EXISTING UTILITY CONNECTIONS FOR USE WITH NEW RESTROOM AND SITE WORK AS REQUIRED.
8. REMOVE AND SALVAGE EXISTING SITE FURNISHINGS AND DELIVER TO CITY CORP YARD.
9. REMOVE EXISTING CONCRETE CURB.
10. REMOVE EXISTING IRRIGATION CONTROL VALVE AND BACKFLOW PREVENTOR. DOCUMENT AND SAVE EXISTING STATIONS AND WATERING TIMES FOR FUTURE USE.
11. REMOVE EXISTING TREE, INCLUDING STUMPS AND ROOTS.
12. REMOVE AND DISPOSE OF EXISTING RAILING.
13. REMOVE AND SALVAGE EXISTING BRICK AND STOCKPILE ONSITE FOR REUSE.
14. REMOVE EXISTING DRINKING FOUNTAIN AND PRESERVE EXISTING SEWER CONNECTIONS FOR FUTURE USE.
15. EXISTING WATER SERVICE LINE TO BE CUT AND CAPPED PER CITY OF SAN LUIS OBISPO STANDARD 6050.

811 Know what's below. Call 811 before you dig.

0 10 20 30 feet
1"=10'

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

DEMOLITION PLAN

100% CONSTRUCTION DOCUMENTS

PROJECT TITLE:

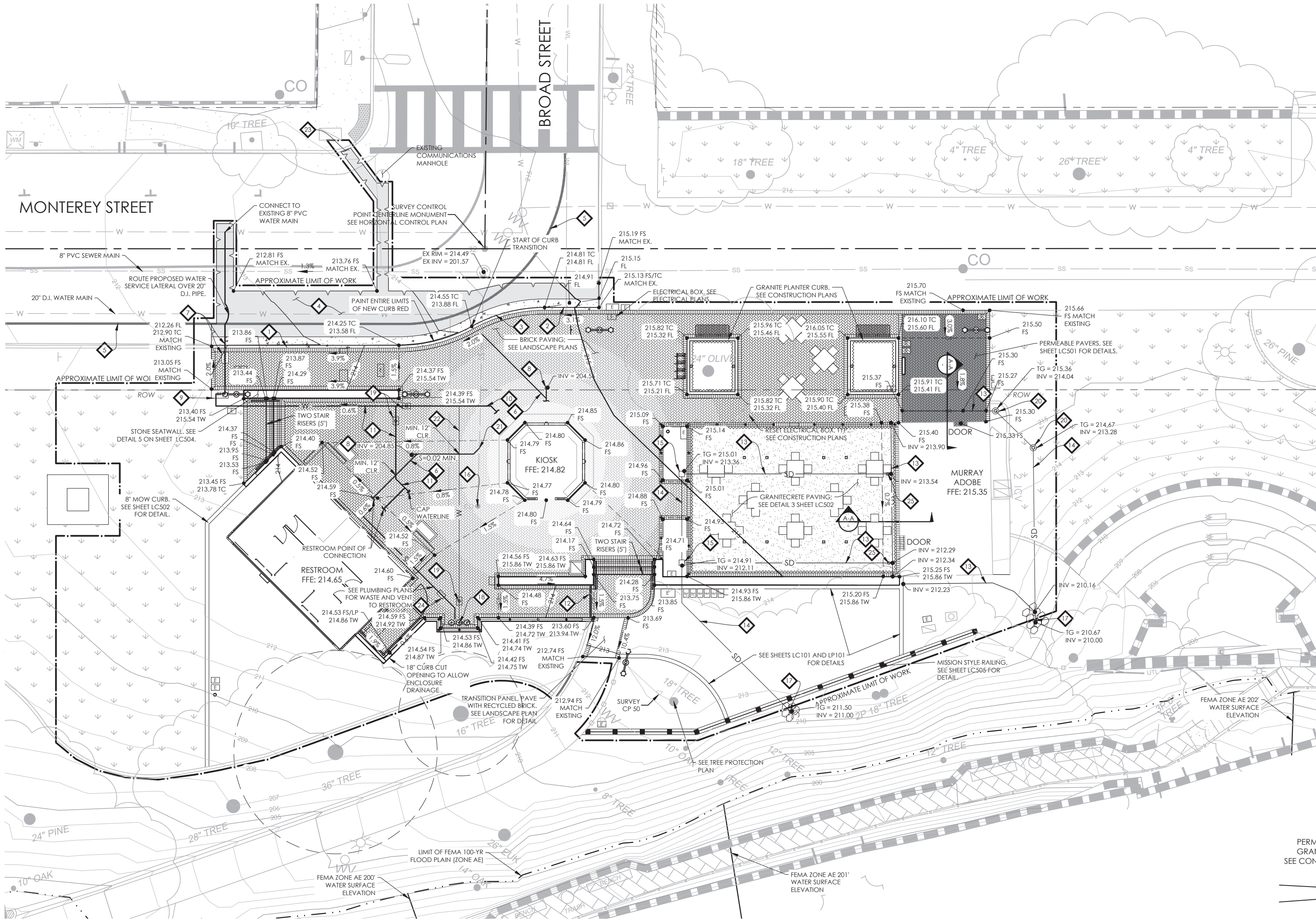
SHEET TITLE:

ENGINEER OF RECORD:

REGISTERED PROFESSIONAL ENGINEER ROBERT A. CACCIOPPO No. 76597 CIVIL STATE OF CALIFORNIA

DATE:

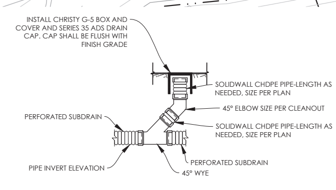
DESIGNED BY:	NLS
DRAWN BY:	NLS
CHECKED BY:	RC
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	**CD101**



IMPROVEMENT KEY NOTES

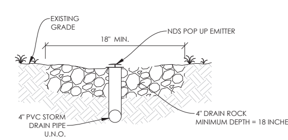
1. CONSTRUCT 8" CURB AND 18" GUTTER PER CITY OF SAN LUIS OBISPO STANDARD 4030. CONCRETE TO BE MISSION COLOR PER SPECIFICATION 73-4.
2. CONSTRUCT 0" CURB PER MODIFIED CITY OF SAN LUIS OBISPO STANDARD 4020. (12" BELOW FINISHED SURFACE WITH #4 BAR)
3. CONSTRUCT CURB TRANSITION (L = ±13') FROM 8" TO 0".
4. CONSTRUCT PATCH PAVING PER CITY OF SAN LUIS OBISPO STANDARD 4110 INSTALLATION NOTE 1. (APPROXIMATELY 2" AC OVERLAY OVER 8" PCC)
5. INSTALL 4" WIDE SOLID WHITE STRIPE PER CALTRANS DETAIL 27B.
6. INSTALL 4" SEWER LATERAL PER CITY STD 6810; 2% MIN. SLOPE. REFER TO PLUMBING PLANS FOR RESTROOM AND KIOSK CONNECTIONS.
7. INSTALL 2" WATER SERVICE WITH 1½" METER PER CITY STD 6210.
8. INSTALL SEWER CLEANOUT WITH G-5 VALVE WELL PER CITY OF SAN LUIS OBISPO STANDARD DRAWING NUMBER 6710. SEE NOTE BELOW FOR COVER.
9. INSTALL 2" REDUCED PRESSURE BACKFLOW PREVENTER PER CITY STD 6550.
10. INSTALL 1" POLYETHELENE 200 PSI WATER SERVICE LINE.
11. INSTALL 2" POLYETHELENE 200 PSI WATER SERVICE LINE.
12. INSTALL NDS SPEE-D CHANNEL DRAIN WITH 4-INCH PVC OUTLET PIPE MATCHING EXISTING DITCH FLOWLINE.
13. INSTALL 4" PERFORATED PVC PIPE, PERFORATIONS FACE DOWN, SLOPE 0.5% MINIMUM. WRAP PIPE WITH NON-WOVEN FILTER FABRIC.
14. INSTALL 4" PVC STORM DRAIN PIPE, SLOPE 0.5% MINIMUM
15. INSTALL NDS 12" SQUARE CATCH BASIN WITH CAST IRON GRATE
16. RAISE EXISTING CLEANOUT TO GRADE AND INSTALL G-5 VALVE WELL AND COVER PER CITY OF SAN LUIS OBISPO STANDARD DRAWING 6710.
17. INSTALL NDS POP-UP DRAIN EMITTER PER DETAIL ON THIS SHEET.
18. INSTALL DRINKING FOUNTAIN. SEE PLUMBING PLANS FOR SEWER LINE SIZE, VENT PIPE SIZE, AND SEWER CLEANOUT LOCATION. ALSO SEE DETAIL 3 ON SHEET LC505.
19. INSTALL FLUSH WITH GROUND ISOLATION VALVE PER CITY OF SAN LUIS OBISPO STANDARD 8640 WITHOUT TAG.
20. INSTALL NDS SPEE-D ROUND CATCH BASIN WITH 4" CONNECTION.
21. CONNECT TO EXISTING 4" SEWER LATERAL WITH WYE CONNECTION.
22. INSTALL ¾" WATER SUPPLY LINE TO DRINKING FOUNTAIN
23. REMOVE AND REPLACE IN KIND L=±5' OF CURB, CONTRACTOR TO PROTECT EXISTING ACCESSIBLE RAMP.
24. INSTALL CONCRETE VAULT WITH P-TRAP FLUSH WITH GRADE. REFER TO LANDSCAPE PLANS FOR DETAIL.
25. INSTALL STORM DRAIN CLEAN OUT PER DETAIL THIS SHEET.

*ALL UTILITY COVERS TO BE DECORATIVE STYLE PER SPECIAL PROVISIONS



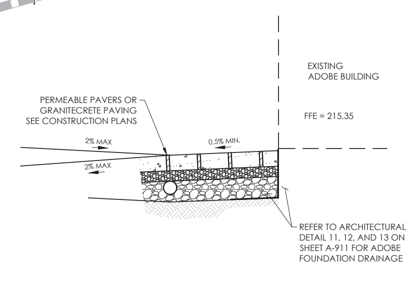
STORM DRAIN CLEANOUT

NTS



NDS POP UP EMITTER DETAIL

-NTS-



SECTION (A-A)

NTS

1"=10'

CITY OF SAN LUIS OBISPO

PROJECT TITLE: **MISSION PLAZA ENHANCEMENTS**

SHEET TITLE: **GRADING, DRAINAGE, & UTILITY PLAN**

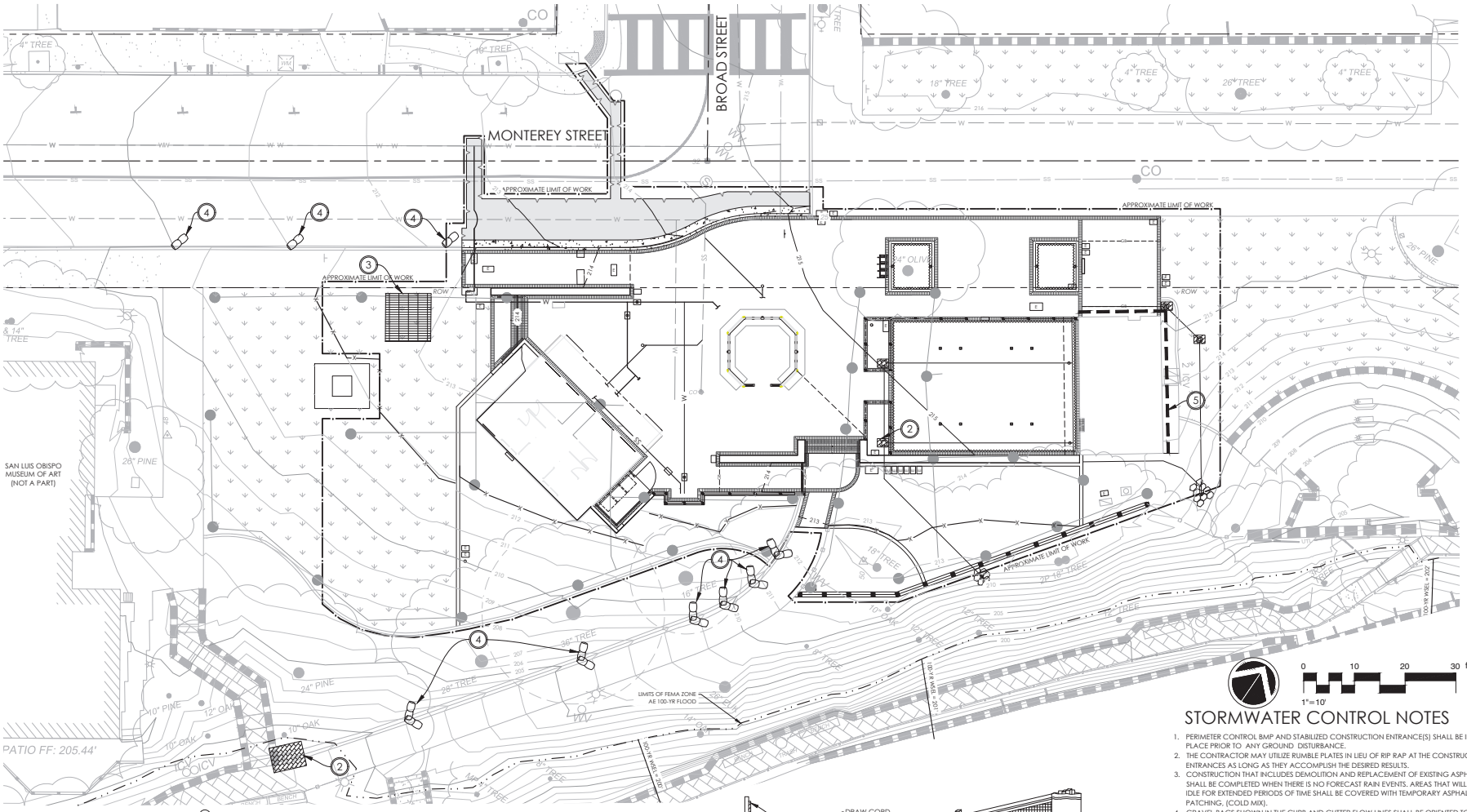
100% CONSTRUCTION DOCUMENTS

ENGINEER OF RECORD:

REGISTERED PROFESSIONAL ENGINEER ROBERT A. CAMACHO No. 76597 CIVIL STATE OF CALIFORNIA

DATE:

DESIGNED BY:	NLS
DRAWN BY:	NLS
CHECKED BY:	RC
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	CG102

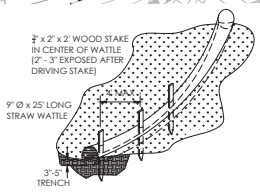


STORMWATER CONTROL NOTES

1. PERIMETER CONTROL BMP AND STABILIZED CONSTRUCTION ENTRANCE(S) SHALL BE IN PLACE PRIOR TO ANY GROUND DISTURBANCE.
2. THE CONTRACTOR MAY UTILIZE RUMBLE PLATES IN LIEU OF RIP RAP AT THE CONSTRUCTION ENTRANCES AS LONG AS THEY ACCOMPLISH THE DESIRED RESULTS.
3. CONSTRUCTION THAT INCLUDES DEMOLITION AND REPLACEMENT OF EXISTING ASPHALT SHALL BE COMPLETED WHEN THERE IS NO FORECAST RAIN EVENTS. AREAS THAT WILL BE IDLE FOR EXTENDED PERIODS OF TIME SHALL BE COVERED WITH TEMPORARY ASPHALT PATCHING. (COLD MIX).
4. GRAVEL BAGS SHOWN IN THE CURB AND GUTTER FLOW LINES SHALL BE ORIENTED TO TEMPORARILY SLOW AND DAM THE FLOWING STORM WATER IN THE GUTTERS TO HELP FILTER OUT ANY SEDIMENT. THESE GRAVEL BAGS SHALL BE SPACED AT 50' O/C OR CLOSER AS CONDITIONS WARRANT.
5. ANY SEDIMENT TRACKED OFFSITE SHALL BE CLEANED DAILY BY MEANS OF MOBILE STREET SWEEPERS.
6. ANY GRADED AREAS THAT ARE GOING TO SIT IDLE FORM MORE THAN TWO WEEKS SHALL HAVE AN APPROPRIATE GROUND COVER BMP APPLIED.

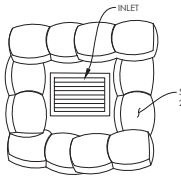
STORMWATER CONTROL BMPs

#	BMP SYMBOL	NAME	LEGEND
1	SE-1	SILT FENCE	
2	SE-10	STORM DRAIN INLET PROTECTION (SEE PHASING NOTES)	
3	WM-8	CONCRETE WASTE MANAGEMENT	
4	SC-6	GRAVEL BAGS	
5	SE-5	STRAW WATTLE	

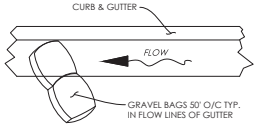


NOTES:
PLACE NET-WRAPPED STRAW WATTLE IN TRENCH. WATTLE TO BE TIGHTLY BUTTED END TO END BUT NOT OVERLAPPING. MINIMUM 6 STAKES PER 25' OF WATTLE.

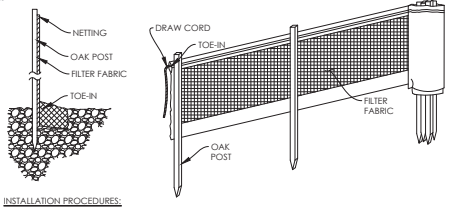
STRAW WATTLE DETAIL
-NTS-



SE-10 STORM DRAIN INLET PROTECTION TYPE-3
-NTS-



SE-6 GRAVEL BAGS IN FLOW LINE DETAIL
-NTS-



INSTALLATION PROCEDURES:
1. DIG A 6" x 6" TRENCH AT DESIRED FENCE LOCATION
2. UNROLL SILT FENCE ALONG TRENCH
3. DRIVE STAKES INTO THE DOWNHILL SIDE OF TRENCH WITH NETTING AND STAKES FACING THE DOWNHILL SIDE.
4. LAY THE BOTTOM 6" OF FABRIC INTO THE TRENCH AND FILL WITH TOP SOIL FOR PROPER TOE-IN.
5. DRAW TENSION CORD AT TOP OF FENCE AND TIE TO END STAKES.

PRE-ASSEMBLED SILT FENCE
-NTS-

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

EROSION CONTROL PLAN

100% CONSTRUCTION DOCUMENTS

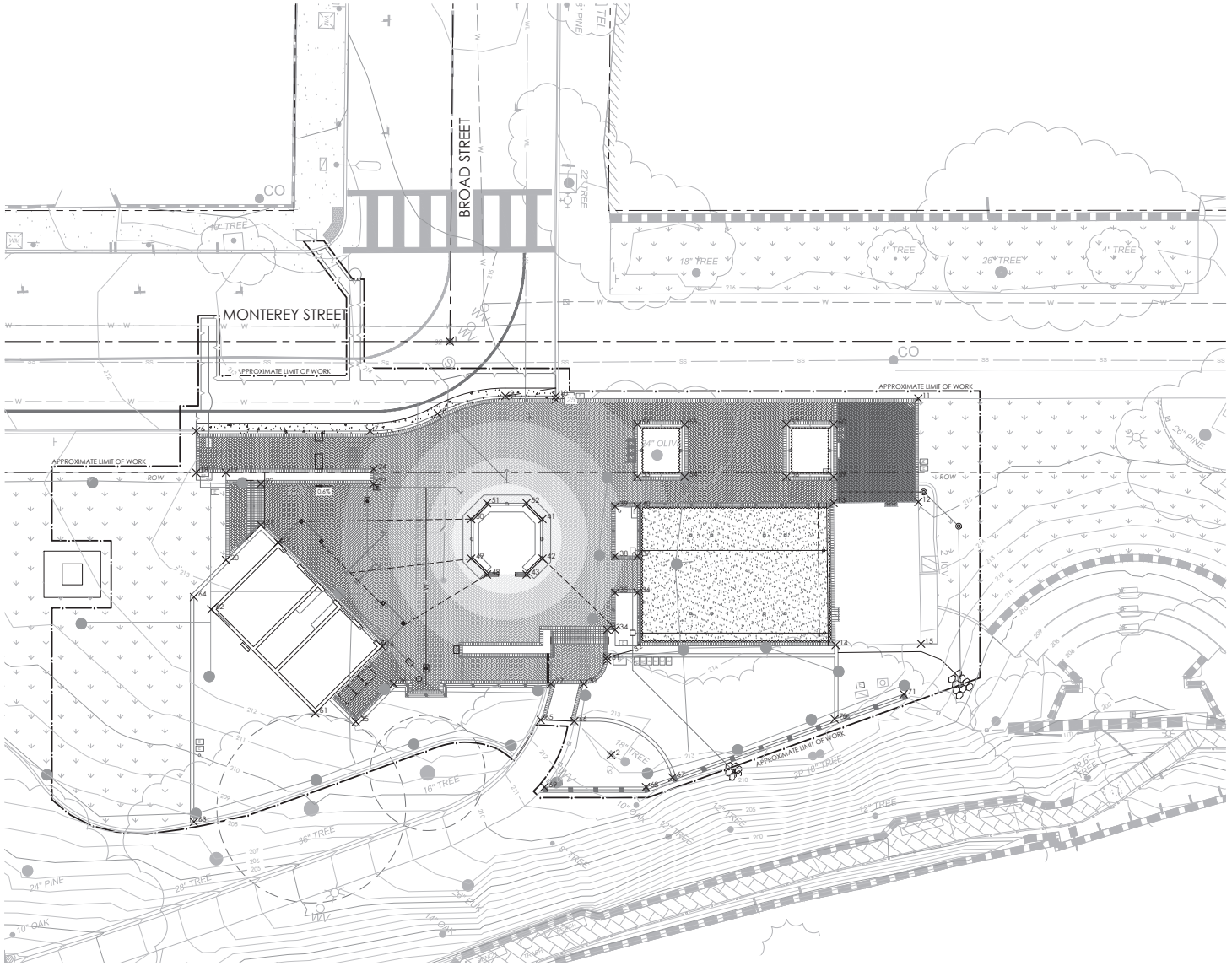
PROJECT TITLE:

SHEET TITLE:

ENGINEER OF RECORD:
REGISTERED PROFESSIONAL ENGINEER ROBERT A. CACCIOTTI No. 76587 CIVIL STATE OF CALIFORNIA

DATE:

DESIGNED BY:	NLS
DRAWN BY:	NLS
CHECKED BY:	RC
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	CG103



Point Table			
Point #	Raw Description	Northing	Easting
1	CL MON LS 6729	2298777.8254	5766449.1609
2	SET RBR WG CP 50	2298730.5974	5766519.4919
3	SET X TBC WG CP 25	2298780.2851	5766472.0829
4	SET X WG CP 48	2298672.6012	5766392.6450
5	FD X WG CP 49	2298681.3001	5766277.9366
6	TFC	2298736.1500	5766419.1958
7	TFC	2298755.1008	5766446.4297
8	TFC	2298765.2188	5766455.1032
9	TFC	2298775.3368	5766463.7768
10	TFC	2298780.8409	5766471.6866
11	BRICK EDGE	2298819.9334	5766528.7413
12	BRICK EDGE	2298803.7453	5766540.0059
13	ADOBE CORNER	2298794.3602	5766526.8453
14	ADOBE CORNER	2298772.3181	5766542.6547
15	ADOBE CORNER	2298781.8333	5766555.8857
16	RESTROOM CORNER	2298722.6979	5766471.8052
17	RESTROOM CORNER	2298727.6555	5766444.1629
18	BRICK EDGE	2298729.6352	5766423.7291
19	BRICK EDGE	2298732.8787	5766428.4002
20	BRICK EDGE	2298719.2074	5766437.9134
21	BRICK EDGE	2298728.4781	5766439.5761
22	BRICK EDGE	2298734.9659	5766435.0616
23	BRICK EDGE	2298747.2145	5766452.7214
24	BRICK EDGE	2298749.5292	5766451.1107
25	BRICK EDGE	2298708.0370	5766475.8782
26	BRICK EDGE	2298718.1043	5766477.6837
27	BRICK EDGE	2298735.2250	5766502.2877
30	BRICK EDGE / BC	2298738.7949	5766507.4179
31	BRICK EDGE / EC	2298745.0589	5766508.5413
32	BRICK EDGE	2298745.5489	5766508.2003
33	BRICK EDGE	2298749.8306	5766505.2209
34	BRICK EDGE	2298750.6874	5766506.4522
35	BRICK EDGE	2298756.4921	5766502.4129
36	BRICK EDGE	2298758.9196	5766505.9014
37	BRICK EDGE	2298764.6654	5766501.9032
38	BRICK EDGE	2298762.2379	5766498.4147
39	BRICK EDGE	2298770.0095	5766493.0068
40	BRICK EDGE	2298772.4370	5766496.4953
41	KIOSK	2298760.1011	5766483.0200
42	KIOSK	2298753.9224	5766487.3194
43	KIOSK	2298749.6956	5766486.5598
48	KIOSK	2298745.3953	5766480.3799
49	KIOSK	2298746.1510	5766476.1535
50	KIOSK	2298752.3307	5766471.8533
51	KIOSK	2298756.5621	5766472.6097
52	KIOSK	2298760.8619	5766478.7889
53	BRICK EDGE	2298777.0838	5766493.2625
54	BRICK EDGE	2298782.2235	5766500.6499
55	BRICK EDGE	2298790.4318	5766494.9381
56	BRICK EDGE	2298785.2912	5766487.5507
57	BRICK EDGE	2298801.5320	5766510.8902
58	BRICK EDGE	2298793.3238	5766516.6019
59	BRICK EDGE	2298798.4643	5766523.9894
60	BRICK EDGE	2298806.6726	5766518.2776
61	RESTROOM CORNER	2298704.9248	5766468.5947
62	RESTROOM CORNER	2298709.8679	5766440.9876
63	MOW STRIP	2298674.6916	5766461.4283
64	MOW STRIP	2298709.9157	5766436.9175
65	PATH EDGE	2298728.4517	5766504.6186
66	PATH EDGE	2298731.9182	5766510.0385
67	MOW STRIP	2298733.7822	5766531.5309
68	MOW STRIP	2298729.4023	5766528.4257
69	MOW STRIP	2298718.3458	5766512.5366
70	MOW STRIP	2298760.6140	5766550.5541
71	MOW STRIP	2298772.0402	5766558.6550

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

HORIZONTAL CONTROL PLAN

100% CONSTRUCTION DOCUMENTS

PROJECT TITLE:

SHEET TITLE:

ENGINEER OF RECORD:

REGISTERED PROFESSIONAL ENGINEER ROBERT A. CACCIOPPO No. 76597 CIVIL STATE OF CALIFORNIA

DATE:

DESIGNED BY: NLS

DRAWN BY: NLS

CHECKED BY: NLS

APPROVED BY:

SCALE: AS NOTED

DATE: 05.14.2024

CITY SPECIFICATION NO. 91439-01

PLAN FILE NO. / LOCATION 0256-03-CU20

SHEET NO. **CG101**

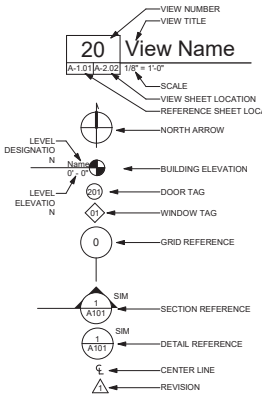
ABBREVIATIONS

ABV	ABOVE
ACOUS	ACOUSTICAL
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECT
B.O.	BOTTOM OF
BALC	BALCONY
BD	BOARD
BET	BETWEEN
BLDG	BUILDING
BLKG	BLOCKING
BLW	BELOW
BM	BEAM
BOT	BOTTOM
BRKT	BRACKET
BULKHD	BULKHEAD
BUR	BUILT UP ROOF
C.G.	CORNER GUARD
CAB	CABINET
CALK	CAULKING
CEM	CEMENT
CER	CERAMIC
CJ	CONTROL JOINT
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR
CO	CASED OPENING
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
DBL	DOUBLE
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DS	DOWN SPOUT
DW	DISHWASHER
DWG	DRAWING
E	EAST
EA	EACH
EIFS	EXTERIOR INSULATION & FINISH SYSTEM
ELEC	ELECTRIC
ELEV	ELEVATION
EMER	EMERGENCY
ENCL	ENCLOSURE
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EW	EACH WAY
EXP. JT.	EXPANSION JOINT
EXST	EXISTING
F.O.	FACE OF
FA	FIRE ALARM
FAP	FIRE ANNUNCIATOR PANEL
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER PANEL
FG	FINISH GROUP
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FIN	FINISH
FLR	FLOOR
FLUOR	FLOURESCENT
FT	FOOT OR FEET
FUR	FURRING
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GL	GLASS
GND	GROUND
GWB	GYPSUM BOARD
GYP	GYPSUM
H.W.H.	HOT WATER HEATER
HDWD	HARDWOOD
HDWR	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
ID	INNER DIAMETER
INCAN	INCANDESCENT
INSUL	INSULATION
INT	INTERIOR
JAN	JANITOR
JST	JOIST
JT	JOINT
LAM	LAMINATE
LAV	LAVATORY
LB(S)	POUNDS
LDG	LANDING
LT	LIGHT
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTD	MOUNTED
MTL	METAL
N	NORTH
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
O.F.	OVERFLOW PIPE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFF	OFFICE
OH	OPPOSITE HAND
OPG	OPENING
OPP	OPPOSITE
PART	PARTITION
PERIM	PERIMETER
PG	PAINT GRADE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLYWD	PLYWOOD
PR	PAIR
PT	PAINT
PTD	PAINTED
R	RISER
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RE	REFER
REF	REFRIGERATOR
REINF	REINFORCED
REQD	REQUIRED
RESIL	RESILIENT
RM	ROOM
RO	ROUGH OPENING
RTU	ROOF TOP UNIT (MECH)
S	SOUTH
SAFB	SOUND ATTENUATION FIBER BATT
SC	SCUPPER
SCHED	SCHEDULE
SEAL	SEALANT
SECT	SECTION
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQURE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUPSPENDED
SYM	SYMMMETRICAL
T	TREAD
T&G	TONGUE & GROOVE
TEL	TELEPHONE
TER	TERRAZZO
THK	THICK
THR	THRESHOLD
TO	TOP OF
TYP	TYPICAL
UC	UNDERCUT
UNFIN	UNFINISHED
UNO	ULNESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
UTIL	UTILITY
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VTR	VENT TERMINATION PIPE
VWC	VINYL WALL COVERING
W	WEST
W/	WITH
W/O	WITHOUT
WC	WATERCLOSET
WIN	WINDOW
WP	WATERPROOF
WS	WETSTACK
WSCT	WAINSCOT
WT	WEIGHT

GENERAL NOTES

1. APPLICABLE CODES AND STANDARDS:
1.1. 2019 CALIFORNIA BUILDING CODE AND ITS APPENDICES AND STANDARDS.
1.2. 2019 CALIFORNIA PLUMBING CODE AND ITS APPENDICES AND STANDARDS.
1.3. 2019 CALIFORNIA MECHANICAL CODE AND ITS APPENDICES AND STANDARDS.
1.4. 2019 CALIFORNIA FIRE CODE AND ITS APPENDICES AND STANDARDS.
1.5. 2019 CALIFORNIA ELECTRICAL CODE AND ITS APPENDICES AND STANDARDS.
1.6. 2019 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS.
1.7 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE AND ITS APPENDICIES AND STANDARDS.
1.8 CURRENT CITY OF SAN LUIS OBISPO MUNICIPAL CODE.
2. ALL WORK DESCRIBED IN THE DRAWINGS SHALL BE VERIFIED FOR DIMENSION, GRADE, EXTENT AND COMPATIBILITY WITH EXISTING SITE CONDITIONS. ANY DISCREPANCIES AND UNEXPECTED CONDITIONS THAT AFFECT OR CHANGE THE WORK DESCRIBED IN THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IMMEDIATELY. DO NOT PROCEED WITH THE WORK IN THE AREA OF DISCREPANCIES UNTIL ALL SUCH DISCREPANCIES ARE RESOLVED. IF THE CONTRACTOR CHOOSES TO DO SO, HE/SHE SHALL BE PRECEDING AT HIS/HER OWN RISK.
4. DIMENSIONS SHOWN SHALL TAKE PRECEDENCE OVER DRAWING SCALE OR PROPORTION. LARGER SCALE DRAWINGS SHALL TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS.
5. IN THE EVENT OF THE UNFORESEEN ENCOUNTER OF MATERIALS SUSPECTED TO BE OF AN ARCHAEOLOGICAL OR PALEONTOLOGICAL NATURE, ALL GRADING AND EXCAVATION SHALL CEASE IN THE IMMEDIATE AREA AND THE THE CONTRACTOR SHALL NOTIFY THE OWNER. THE FIND SHALL BE LEFT UNTOUCHED UNTIL AN EVALUATION BY A QUALIFIED ARCHAEOLOGIST OR PALEONTOLOGIST IS MADE.
6. CONTRACTOR IS TO BE RESPONSIBLE FOR BEING FAMILIAR WITH THESE DOCUMENTS INCLUDING ALL CONTRACT REQUIREMENTS.
7. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
8. SHOP WELDS MUST BE PERFORMEDBY A LICENSED FABRICATOR'S SHOP.
9. OSHA PERMITS REQUIRED FOR VERTICAL CUTS 5' OR OVER.
10. CONTRACTOR TO PROVIDE COMPLETE DETAILS OF ENGINEERED TEMPORARY SHORING OR SLOT CUTTING PROCEDURES ON PLANS. CALL FOR INSPECTION BEFORE EXCAVATION BEGINS.
11. THE SOILS ENGINEER IS TO APPROVE THE KEY OR BOTTOM AND LEAVE A CERTIFICATE ON THE SITE FOR THE GRADING INSPECTOR. THE GRADING INSPECTOR IS TO BE NOTIFIED BEFORE ANY GRADING BEGINS, AND FOR BOTTOM INSPECTION, BEFORE FILL IS PLACED. FILL MAY NOT BE PLACED WITHOUT APPROVAL OF THE GRADING INSPECTOR.
12. CONTRACTOR TO REVIEW CALIFORNIA GREEN CODE REQUIREMENTS FOR CONTRACTOR REQUIREMENTS.
13. A CITY ENCROACHMENT PERMIT, A SEPERATE OFFICER, ACCESS EASEMENT/AGREEMENT, AND/OR RECIPRICAL ACCESS EASEMENT/AGREEMENT MAY BE REQUIRED TO INSURE THAT THE PROPOSED PRIVATE ACCESS ROADWAY WILL REMAIN OPEN TO THROUGH TRAFFIC AND EMERGENCY VEHICLES PRIOR TO FINAL OF BUILDING PERMIT.

SYMBOLS



FINISH SCHEDULE

ROOM (TYP.)	FLOOR	BASE	WALLS	CEILING	COMMENTS
RESTROOM 1	F2	-	W1	C1	
RESTROOM 2	F2	-	W1	C1	
PLUMBING CHASE	F1	-	W2	C1	
KIOSK	F1	B1	W3	C2	

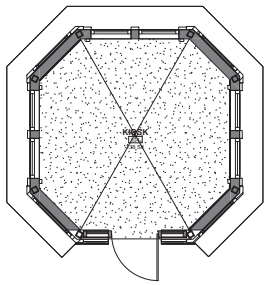
LEGEND

FLOOR
F1 DENSIFIED SEALED CONCRETE
F2 DRY SHAKE HARDNER ON CAST IN PLACE SLAB WITH CLEAR COATING

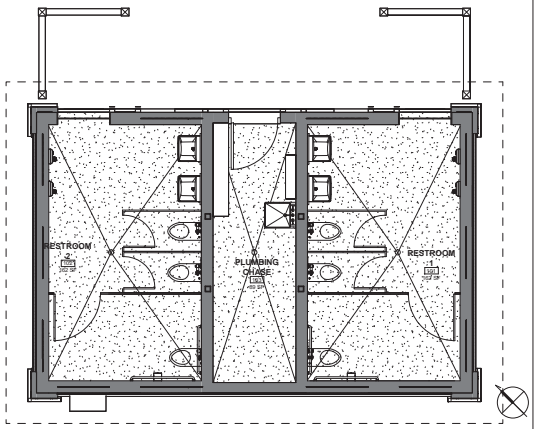
BASE
B1 EXPOSED CONCRETE CURB, 6" HIGH

WALLS
W1 CERAMIC WALL TILE
W2 EXPOSED CMU, PAINT
W3 UNFINIHSED EXPOSED METAL STUDS

CEILING
C1 TOUNGE AND GROOVE METAL SOFFIT PANEL
C2 UNFINISED STRUCTURE ABOVE



2 KIOSK FINISH PLAN & VENT CALCS
AR301 G-101 1/4" = 1'-0"



1 RESTROOM FINISH PLAN & VENT CALCS
AR301 G-101 1/4" = 1'-0"

KIOSK BUILDING INFORMATION

ALLOWABLE HEIGHT AND AREA

OCCUPANCY GROUP:	U (UTILITY AND MISCELLANEOUS)
DESCRIPTION:	PUBLIC KIOSK
CONSTRUCTION TYPE:	5B
AUTOMATIC FIRE SPRINKLERS:	NO
APN #:	002-423-006

	PROPOED	ALLOWABLE PER CBC CHAPTER 5
NUMBER OF STORIES:	1	1
BUILDING HEIGHT:	15'-2"	40'-0"
BUILDING AREA:	271 SF	5500 SF
OCCUPIABLE FLOOR AREA:	138 SF	

EGRESS ANALYSIS
OCCUPANT LOAD FACTOR PER CBC TABLE 1004.5: 60 GROSS TO ALLOW FOR FUTURE MERCHANITLE USE

TOTAL OCCUPANTS: 138SF / 60SF/PERSON = 2.3 - ROUND TO **1 PERSONS**
REQUIRED EXITS PER 1006.2.1: 1
PROVIDED EXITS: 1

RESTROOM BUILDING INFORMATION

ALLOWABLE HEIGHT AND AREA

OCCUPANCY GROUP:	U (UTILITY AND MISCELLANEOUS)
DESCRIPTION:	PUBLIC RESTROOM
CONSTRUCTION TYPE:	5B
AUTOMATIC FIRE SPRINKLERS:	NO
APN #:	002-423-006

	PROPOED	ALLOWABLE PER CBC CHAPTER 5
NUMBER OF STORIES:	1	1
BUILDING HEIGHT:	14'-3"	40'-0"
BUILDING AREA:	704 SF	5500 SF
OCCUPIABLE FLOOR AREA:	336 SF	

EGRESS ANALYSIS
OCCUPANT LOAD FOR RESTROOMS IS UNDEFINED IN CBC TABLE 1004.5

VENTILATION CALCS

KIOSK

REQUIRED SIZE OF OPENINGS FOR NATURAL VENTIALTION PER CBC 1202.5 AND CMC 402.2: MINIMUM 4% OF OCCUPIABLE FLOOR AREA

REQUIRED OPENINGS = 138* 0.04 = 5.52 SF

PROVIDED:

TRANSOM VENTS = 32 VENTS *0.6944 SF = 22.22 SF AT 50% OPEN AREA = 11.11 SF

TOTAL VENTILATION PROVIDED = 11.11 SF > 5.52 SF

RESTROOM 1 AND 2

REQUIRED SIZE OF OPENINGS FOR NATURAL VENTIALTION PER CBC 1202.5 AND CMC 402.2: MINIMUM 4% OF OCCUPIABLE FLOOR AREA

REQUIRED OPENINGS = 168 * 0.04 = 6.72 SF

PROVIDED:

TRANSOM VENTS = 30 VENTS *0.6944 SF = 20.832 SF AT 50% OPEN AREA = 10.416 SF

TOTAL VENTILATION PROVIDED = 10.41 SF > 6.72 SF

PLUMBING CHASE

REQUIRED SIZE OF OPENINGS FOR NATURAL VENTIALTION OF ADJOINIGN SPACE PER CBC 1202.5 AND CMC 402.2 MINIMUM 8% OF OCCUPIABLE FLOOR AREA

REQUIRED OPENINGS = 89 * 0.08 = 7.12 SF , BUT NOT LESS THAN 25 SF

PROVIDED:

PERFORATED WALL PANEL = 40.6 SF EACH SIDE = 81.2 SF AT 35% OPEN AREA = 28.42 SF

TOTAL VENTILATION PROVIDED = 28.42 SF > 25 SF

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

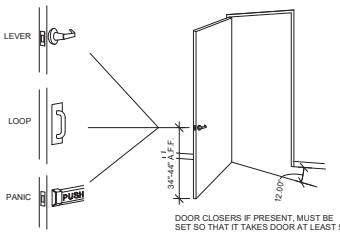
GENERAL NOTES & FINISH SCHEDULE

SHEET TITLE:

LICENSED ARCHITECT
Kathryn Hurd
C-38079
02-28-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1/4" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	G-101

4/30/2024 10:04:15 AM



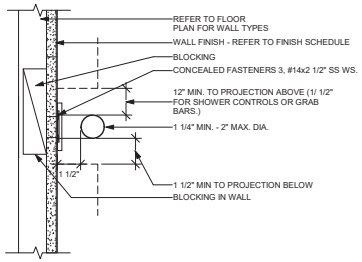
ACCEPTABLE DOOR HARDWARE AND MOUNTING HEIGHTS

DOOR CLOSERS IF PRESENT, MUST BE SET SO THAT IT TAKES DOOR AT LEAST 5 SECONDS TO CLOSE FROM AN OPEN POSITION OF 90 DEGREES TO WITHIN 12" OF LATCH

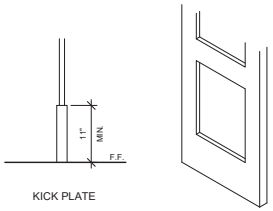
DOOR CLOSERS
THE FORCE TO OPEN DOOR SHALL NOT EXCEED 5 LBS.
TYPICAL @ INTERIOR

REF 11B-404.2

41 ACC. DOOR REQUIREMENTS
G-103 1" = 1'-0"



31 ACC. GRAB BAR ATTACHMENT
G-104 G-103 3" = 1'-0"

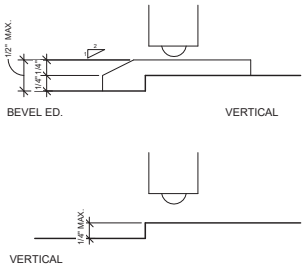


KICK PLATE

NOTE:
SWINGING DOOR & GATE SURFACES WITHIN 10" OF FINISH FLOOR SHALL HAVE A SMOOTH SURFACE OF THE PUSH SIDE EXTENDING THE FULL WIDTH OF DOOR OR GATE. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS SHALL BE WITHIN 1/16" OF SURFACE & SHALL BE FREE OF SHARP OR ABRASIVE EDGES. CAVITIES CREATED BY KICK PLATES SHALL BE CAPPED.

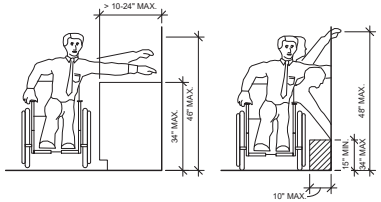
REF 11B-404.2.10

21 KICK PLATE AT DOORS
G-103 1" = 1'-0"

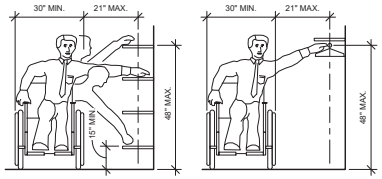


REF. 11B 303

42 ACC. DOOR THRESHOLDS
G-103 1/2" = 1'-0"



(C) OBSTRUCTED HIGH SIDE REACH (B) UNOBSTRUCTED SIDE REACH



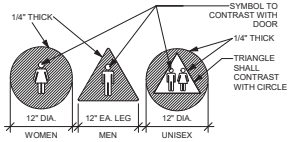
(D) SHELVES (E) CLOSET

NOTE: THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND IS INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION

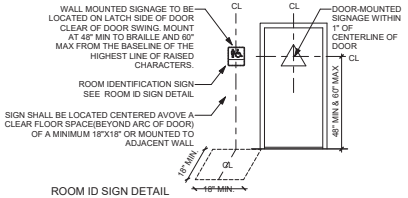
REF 11B-308

33 ACC. REACH RANGES
G-103 1/2" = 1'-0"

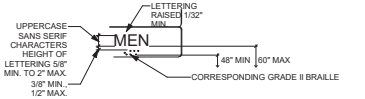
WALL-SIGNAGE (TYP.)



DOOR MOUNTED SIGNAGE (TYP.)
PICTOGRAMS AND/OR LETTERING ARE NOT REQUIRED ON DOOR-MOUNTED SIGNAGE



ROOM ID SIGN DETAIL



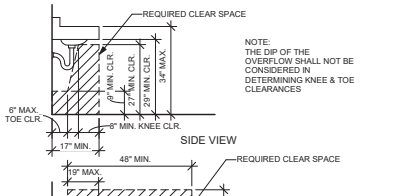
CHARACTER PROPORTIONS. CHARACTERS SHALL BE SELECTED FROM A FONT WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 55% MINIMUM AND 110% MAXIMUM OF THE HEIGHT OF THE UPPERCASE "I".

SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18 INCHES MINIMUM BY 18" MINIMUM, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING.

NOTE: VERIFY GENDER IDENTITY SIGNAGE FOR RESTROOMS WITH CITY AND ARCHITECT PRIOR TO FABRICATION.

REF. 11B-703.7.2.6 REF 11B-703.4.2

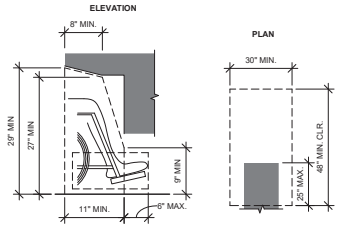
23 ACC. RESTROOM ID SYMBOLS
G-103 1" = 1'-0"



NOTE:
THE DIP OF THE OVERFLOW SHALL NOT BE CONSIDERED IN DETERMINING KNEE & TOE CLEARANCES

NOTE:
HOT WATER AND DRAIN PIPES UNDER ACCESSIBLE LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHAP OR ABRASIVE SURFACES UNDER LAVATORIES.

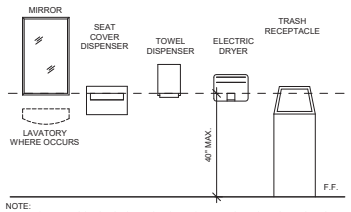
12 ACC. LAVATORIES
G-103 1/2" = 1'-0"
REF. 11B 606



NOTE:
1. THE REQUIRED CLEAR FLOOR SPACE MAY NOT OVERLAP THE REQUIRED KNEE SPACE BY MORE THAN 19".
2. KNEE CLEARANCES AT TABLES, COUNTERS & WORKSURFACES IS AT LEAST 27" HIGH, 30" WIDE AND 19" DEEP.

REF 11B-306

43 TOE & KNEE CLEARANCES
G-103 3" = 1'-0"



NOTE:
1. CLEAR FLOOR OR GROUND SPACE REQUIRED TO ALLOW FOR FRONT OR PARALLEL APPROACH TO ACCESSORIES.
2. ALL OPERABLE PARTS OF FIXTURES AND ACCESSORIES TO BE LOCATED 40" MAX. A.F.F.
3. CONTROLS AND OPERATING MECHANISMS MUST OPERATE WITH ONE HAND AND NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF WRIST.
4. MAX. 5 POUND FORCE TO OPERATE CONTROLS.
5. LOCATE COAT HOOKS AND SHELVING WITHIN APPROPRIATE REACH RANGE (48" MAX. ABOVE FLOOR.)
6. MIRRORS NOT LOCATED ABOVE LAVATORY TO HAVE BOTTOM EDGE OF REFLECTING SURFACE 35" MAX A.F.F.

13 ACC. RESTROOM ACCESSORIES
G-103 1/2" = 1'-0"
REF. 11B-603.3- 5

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

ACCESSIBILITY DETAILS

SHEET TITLE:

LICENSED ARCHITECT
Kathryn Hurd
C-38079
12-31-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	As indicated
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	G-103

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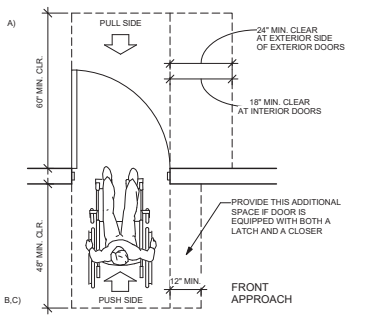
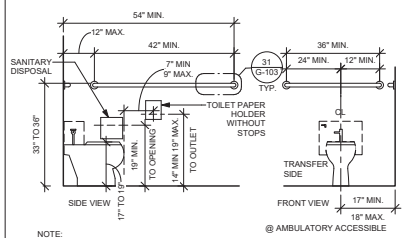


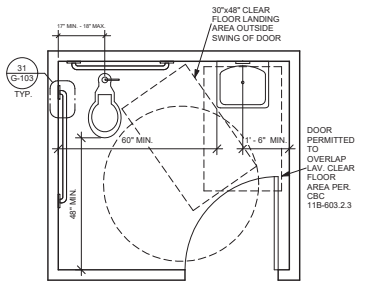
REF 11B-404.2.4

23 CLEARANCES AT DOORS & GATES
G-104 1/2" = 1'-0"

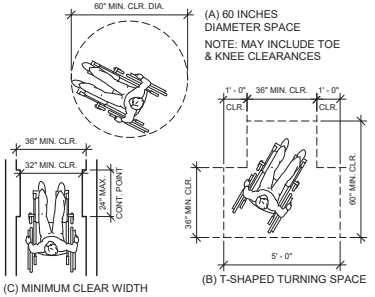


NOTE:
1. ALL DIMENSIONS TAKEN FROM FACE OF FINISH.
2. WATER CLOSET FLUSH VALVE CONTROLS, OPERATING MECHANSM CONTROLS SHALL BE OPERABLE WITH ONE HAND, SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST, AND SHALL BE MOUNTED NO MORE THAN 44" A.F.F.
3. THE FORCE REQUIRED TO ACTIVATE THE WATER CLOSET AND URINAL FLUSH VALVE CONTROLS & FAUCET AND OPERATING MECHANISM CONTROLS SHALL BE NO GREATER THAN 5 LBF. ELECTRONIC OR AUTOMATIC FLUSHING CONTROLS ARE ACCEPTABLE AND PREFERABLE.

11 ACC. TOILETS
G-104 1/2" = 1'-0"



12 SINGLE ACCOMODATION TOILET
G-104 1/2" = 1'-0"



REF 11B-304

13 ACC. TURNING SPACE
G-104 3/8" = 1'-0"

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

ACCESSIBILITY DETAILS

SHEET TITLE:

LICENSED ARCHITECT
Kathryn Hurd
C-38079
12 - 31 - 2025
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	As indicated
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	G-104

4/30/2024 10:04:07 AM

2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 1 (JANUARY 2020, INCLUDES JULY 2021 SUPPLEMENT)

CHAPTER 1 - ADMINISTRATION

SECTION 101 GENERAL

101.1 TITLE.
THESE REGULATIONS SHALL BE KNOWN AS THE *CALIFORNIA GREEN BUILDING STANDARDS CODE* AND MAY BE CITED AS SUCH AND WILL BE REFERRED TO HEREIN AS "THIS CODE." IT IS INTENDED THAT IT SHALL ALSO BE KNOWN AS THE *CALGREEN CODE*. THE *CALIFORNIA GREEN BUILDING STANDARDS CODE* IS PART 11 OF THIRTEEN PARTS OF THE OFFICIAL COMPILATION AND PUBLICATION OF THE ADOPTION, AMENDMENT AND REPEAL OF BUILDING REGULATIONS TO THE *CALIFORNIA CODE OF REGULATIONS*, TITLE 24, ALSO REFERRED TO AS THE *CALIFORNIA BUILDING STANDARDS CODE*.

101.2 PURPOSE.
THE PURPOSE OF THIS CODE IS TO IMPROVE PUBLIC HEALTH, SAFETY AND GENERAL WELFARE BY ENHANCING THE DESIGN AND CONSTRUCTION OF BUILDINGS THROUGH THE USE OF BUILDING CONCEPTS HAVING A REDUCED NEGATIVE IMPACT OR POSITIVE ENVIRONMENTAL IMPACT AND ENCOURAGING SUSTAINABLE CONSTRUCTION PRACTICES IN THE FOLLOWING CATEGORIES:
1. PLANNING AND DESIGN.
2. ENERGY EFFICIENCY.
3. WATER EFFICIENCY AND CONSERVATION.
4. MATERIAL CONSERVATION AND RESOURCE EFFICIENCY.
5. ENVIRONMENTAL QUALITY.

101.3 SCOPE.
THE PROVISIONS OF THIS CODE SHALL APPLY TO THE PLANNING, DESIGN, OPERATION, CONSTRUCTION, USE AND OCCUPANCY OF EVERY NEWLY CONSTRUCTED BUILDING OR STRUCTURE, UNLESS OTHERWISE INDICATED IN THIS CODE, THROUGHOUT THE STATE OF CALIFORNIA.

IT IS NOT THE INTENT THAT THIS CODE SUBSTITUTE OR BE IDENTIFIED AS MEETING THE CERTIFICATION REQUIREMENTS OF ANY GREEN BUILDING PROGRAM.

SECTION 102 CONSTRUCTION DOCUMENTS AND INSTALLATION VERIFICATION

102.1 SUBMITTAL DOCUMENTS.
CONSTRUCTION DOCUMENTS AND OTHER DATA SHALL BE SUBMITTED IN ONE OR MORE SETS WITH EACH APPLICATION FOR A PERMIT. WHERE SPECIAL CONDITIONS EXIST, THE ENFORCING AGENCY IS AUTHORIZED TO REQUIRE ADDITIONAL CONSTRUCTION DOCUMENTS TO BE PREPARED BY A LICENSED DESIGN PROFESSIONAL AND MAY BE SUBMITTED SEPARATELY.

EXCEPTION: THE ENFORCING AGENCY IS AUTHORIZED TO WAIVE THE SUBMISSION OF CONSTRUCTION DOCUMENTS AND OTHER DATA NOT REQUIRED TO BE PREPARED BY A LICENSED DESIGN PROFESSIONAL.

102.2 INFORMATION ON CONSTRUCTION DOCUMENTS.
CONSTRUCTION DOCUMENTS SHALL BE OF SUFFICIENT CLARITY TO INDICATE THE LOCATION, NATURE AND SCOPE OF THE PROPOSED GREEN BUILDING FEATURE AND SHOW THAT IT WILL CONFORM TO THE PROVISIONS OF THIS CODE, THE *CALIFORNIA BUILDING STANDARDS CODE* AND OTHER RELEVANT LAWS, ORDINANCES, RULES AND REGULATIONS AS DETERMINED BY THE ENFORCING AGENCY.

102.3 VERIFICATION.
DOCUMENTATION OF CONFORMANCE FOR APPLICABLE GREEN BUILDING MEASURES SHALL BE PROVIDED TO THE ENFORCING AGENCY. ALTERNATE METHODS OF DOCUMENTATION SHALL BE ACCEPTABLE WHEN THE ENFORCING AGENCY FINDS THAT THE PROPOSED ALTERNATE DOCUMENTATION IS SATISFACTORY TO DEMONSTRATE SUBSTANTIAL CONFORMANCE WITH THE INTENT OF THE PROPOSED GREEN BUILDING MEASURE.

CHAPTER 3 - GREEN BUILDING

SECTION 301 GENERAL

301.1 SCOPE.
BUILDINGS SHALL BE DESIGNED TO INCLUDE THE GREEN BUILDING MEASURES SPECIFIED AS MANDATORY IN THE APPLICATION CHECKLISTS CONTAINED IN THIS CODE. VOLUNTARY GREEN BUILDING MEASURES ARE ALSO INCLUDED IN THE APPLICATION CHECKLISTS AND MAY BE INCLUDED IN THE DESIGN AND CONSTRUCTION OF STRUCTURES COVERED BY THIS CODE, BUT ARE NOT REQUIRED UNLESS ADOPTED BY A CITY, COUNTY, OR CITY AND COUNTY AS SPECIFIED IN ***SECTION 101.7***.

301.3 NONRESIDENTIAL ADDITIONS AND ALTERATIONS
[BSC-CG] THE PROVISIONS OF INDIVIDUAL SECTIONS OF ***CHAPTER 5*** APPLY TO NEWLY CONSTRUCTED BUILDINGS, BUILDING ADDITIONS OF 1,000 SQUARE FEET OR GREATER, AND/OR BUILDING ALTERATIONS WITH A PERMIT VALUATION OF $200,000 OR ABOVE (FOR OCCUPANCIES WITHIN THE AUTHORITY OF CALIFORNIA BUILDING STANDARDS COMMISSION). CODE SECTIONS RELEVANT TO ADDITIONS AND ALTERATIONS SHALL ONLY APPLY TO THE PORTIONS OF THE BUILDING BEING ADDED OR ALTERED WITHIN THE SCOPE OF THE PERMITTED WORK.

A CODE SECTION WILL BE DESIGNATED BY A BANNER TO INDICATE WHERE THE CODE SECTION ONLY APPLIES TO NEWLY CONSTRUCTED BUILDINGS **[N]** OR TO ADDITIONS AND/OR ALTERATIONS **[A]**. WHEN THE CODE SECTION APPLIES TO BOTH, NO BANNER WILL BE USED.

301.3.1 NONRESIDENTIAL ADDITIONS AND ALTERATIONS THAT CAUSE UPDATES TO PLUMBING FIXTURES ONLY:

NOTE: ON AND AFTER JANUARY 1, 2014, CERTAIN COMMERCIAL REAL PROPERTY, AS DEFINED IN ***CIVIL CODE SECTION 1101.3***, SHALL HAVE ITS NONCOMPLIANT PLUMBING FIXTURES REPLACED WITH APPROPRIATE WATER-CONSERVING PLUMBING FIXTURES UNDER SPECIFIC CIRCUMSTANCES. SEE ***CIVIL CODE SECTION 1101.1 ET SEQ***. FOR DEFINITIONS, TYPES OF COMMERCIAL REAL PROPERTY AFFECTED, EFFECTIVE DATES, CIRCUMSTANCES NECESSITATING REPLACEMENT OF NONCOMPLIANT PLUMBING FIXTURES, AND DUTIES AND RESPONSIBILITIES FOR ENSURING COMPLIANCE.

301.3.2 WASTE DIVERSION

THE REQUIREMENTS OF ***SECTION 5.408*** SHALL BE REQUIRED FOR ADDITIONS AND ALTERATIONS WHENEVER A PERMIT IS REQUIRED FOR WORK.

301.4 PUBLIC SCHOOLS AND COMMUNITY COLLEGES (SEE GBSC)

301.5 HEALTH FACILITIES (SEE GBSC)

SECTION 302 MIXED OCCUPANCY BUILDINGS

302.1 MIXED OCCUPANCY BUILDINGS.
IN MIXED OCCUPANCY BUILDINGS, EACH PORTION OF A BUILDING SHALL COMPLY WITH THE SPECIFIC GREEN BUILDING MEASURES APPLICABLE TO EACH SPECIFIC OCCUPANCY.

SECTION 303 PHASED PROJECTS

303.1 PHASED PROJECTS.
FOR SHELL BUILDINGS AND OTHERS CONSTRUCTED FOR FUTURE TENANT IMPROVEMENTS, ONLY THOSE CODE MEASURES RELEVANT TO THE BUILDING COMPONENTS AND SYSTEMS CONSIDERED TO BE NEW CONSTRUCTION (OR NEWLY CONSTRUCTED) SHALL APPLY.

303.1.1 INITIAL TENANT IMPROVEMENTS
THE PROVISIONS OF THIS CODE SHALL APPLY ONNLY TO THE INITIAL TENANT IMPROVEMENTS TO A PROJECT. SUBSEQUENT TENANT IMPROVEMENTS SHALL COMPLY WITH THE SCOPING PROVISIONS IN ***SECTION 301.3*** NON-RESIDENTIAL ADDITIONS AND ALTERATIONS.

CHAPTER 5 - NONRESIDENTIAL MANDATORY MEASURES

DIVISION 5.1 PLANNING AND DESIGN

5.106 SITE DEVELOPMENT

5.106.1 STORMWATER POLLUTION FOR PROJECTS THAT DISTURB LESS THAN ONE ACRE OF LAND
NEWLY CONSTRUCTED PROJECTS AND ADDITIONS WHICH DISTURB LESS THAN ONE ACRE OF LAND AND ARE NOT PART OF A LARGER COMMON PLAN OF DEVELOPMENT OR SALE SHALL PREVENT THE POLLUTION OF STORMWATER RUNOFF FROM THE CONSTRUCTION ACTIVITIES THROUGH ONE OR MORE OF THE FOLLOWING MEASURES:

5.106.1.1 LOCAL ORDINANCE
COMPLY WITH A LAWFULLY ENACTED STORMWATER MANAGEMENT AND/OR EROSION CONTROL ORDINANCE.

5.106.1.2 BEST MANAGEMENT PRACTICES (BMP'S)
PREVENT THE LOSS OF SOIL THROUGH WIND OR WATER EROSION BY IMPLEMENTING AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROL AND GOOD HOUSEKEEPING BMP'S.

1. SOIL LOSS BMP'S THAT SHOULD BE CONSIDERED FOR IMPLEMENTATION AS APPROPRIATE FOR EACH PROJECT INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   a. SCHEDULING CONSTRUCTION ACTIVITY DURING DRY WEATHER, WHEN POSSIBLE.
   b. PRESERVATION OF NATURAL FEATURES, VEGETATION, SOIL, AND BUFFERS AROUND SURFACE WATERS.
   c. DRAINAGE SWALES OR LINED DITCHES TO CONTROL STORMWATER FLOW.
   d. MULCHING OR HYDROSEEDING TO STABILIZE DISTURBED SOILS.
   e. EROSION CONTROL TO PROTECT SLOPES.
   f. PROTECTION OF STORM DRAIN INLETS (GRAVEL BAGS OR CATCH BASIN INSERTS).
   g. PERIMETER SEDIMENT CONTROL (PERIMETER SILT FENCE, FIBER ROLLS).
   h. SEDIMENT TRAP OR SEDIMENT BASIN TO RETAIN SEDIMENT ON SITE.
   i. STABILIZED CONSTRUCTION EXITS.
   j. WIND EROSION CONTROL.
   k. OTHER SOIL LOSS BMP'S ACCEPTABLE TO THE ENFORCING AGENCY.

2. GOOD HOUSEKEEPING BMP'S TO MANAGE CONSTRUCTION EQUIPMEN MATERIALS, NON-STORMWATER DISCHARGES, AND WASTES THAT SHOULD BE CONSIDERED FOR IMPLEMENTATION AS APPROPRIATE FOR EACH PROJECT INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   a. DEWATERING ACTIVITIES.
   b. MATERIAL HANDLING AND WASTE MANAGEMENT.
   c. BUILDING MATERIALS STOCKPILE MANAGEMENT.
   d. MANAGEMENT OF WASHOUT AREAS (CONCRETE, PAINTS, STUCCO, ETC.).
   e. CONTROL OF VEHICLE/EQUIPMENT FUELING TO CONTRACTOR'S STAGING AREA.
   f. VEHICLE AND EQUIPMENT CLEANING PERFORMED OFF SITE.
   g. SPILL PREVENTION AND CONTROL.
   h. OTHER HOUSEKEEPING BMP'S ACCEPTABLE TO THE ENFORCING AGENCY.

5.106.2 STORMWATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB ONE OR MORE ACRES OF LAND
COMPLY WITH ALL LAWFULLY ENACTED STORMWATER DISCHARGE REGULATIONS FOR PROJECTS THAT (1) DISTURB ONE ACRE OR MORE OF LAND, OR (2) DISTURB LESS THAN ONE ACRE OF LAND BUT ARE PART OF A LARGER COMMON PLAN OF DEVELOPMENT OR SALE.

NOTE: PROJECTS THAT (1) DISTURB ONE ACRE OR MORE OF LAND, OR (2) DISTURB LESS THAN ONE ACRE OF LAND BUT ARE PART OF A LARGER COMMON PLAN OF DEVELOPMENT OR SALE MUST COMPLY WITH THE POSTCONSTRUCTION REQUIREMENTS DETAILED IN THE APPLICABLE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES ISSUED BY THE STATE WATER RESOURCES CONTROL BOARD OR THE LAHONTAN REGIONAL WATER QUALITY CONTROL BOARD (FOR PROJECTS IN THE LAKE TAHOE HYDROLOGIC UNIT).

THE NPDES PERMITS REQUIRE POSTCONSTRUCTION RUNOFF (POSTPROJECT HYDROLOGY) TO MATCH THE PRECONSTRUCTION RUNOFF (PRE-PROJECT HYDROLOGY) WITH THE INSTALLATION OF POSTCONSTRUCTION STORMWATER MANAGEMENT MEASURES. THE NPDES PERMITS EMPHASIZE RUNOFF REDUCTION THROUGH ON-SITE STORMWATER USE, INTERCEPTION, EVAPOTRANSPIRATION, AND INFILTRATION THROUGH NONSTRUCTURAL CONTROLS, SUCH AS LOW IMPACT DEVELOPMENT (LID) PRACTICES, AND CONSERVATION DESIGN MEASURES. STORMWATER VOLUME THAT CANNOT BE ADDRESSED USING NONSTRUCTURAL PRACTICES IS REQUIRED TO BE CAPTURED IN STRUCTURAL PRACTICES AND BE APPROVED BY THE ENFORCING AGENCY.

REFER TO THE CURRENT APPLICABLE PERMITS ON THE STATE WATER RESOURCES CONTROL BOARD WEBSITE AT: *WWW.WATERBOARDS.CA.GOV/CONSTRUCTIONSTORMWATER*. CONSIDERATION TO THE STORMWATER RUNOFF MANAGEMENT MEASURES SHOULD BE GIVEN DURING THE INITIAL DESIGN PROCESS FOR APPROPRIATE INTEGRATION INTO SITE DEVELOPMENT.

5.106.4 BICYCLE PARKING
FOR BUILDINGS WITHIN THE AUTHORITY OF CALIFORNIA BUILDING STANDARDS COMMISSION AS SPECIFIED IN ***SECTION 103***, COMPLY WITH ***SECTION 5.106.4.1***. FOR BUILDINGS WITHIN THE AUTHORITY OF THE DIVISION OF THE STATE ARCHITECT PURSUANT TO ***SECTION 105***, COMPLY WITH ***SECTION 5.106.4.2***.

5.106.4.1 BICYCLE PARKING [BSC-CG]
COMPLY WITH ***SECTIONS 5.106.4.1.1*** AND ***5.106.4.1.2;*** OR MEET THE APPLICABLE LOCAL ORDINANCE, WHICHEVER IS STRICTER.

5.106.4.1.1 SHORT-TERM BICYCLE PARKING
IF THE NEW PROJECT OR AN ADDITION OR ALTERATION IS ANTICIPATED TO GENERATE VISITOR TRAFFIC, PROVIDE PERMANENTLY ANCHORED BICYCLE RACKS WITHIN 200 FEET OF THE VISITORS' ENTRANCE, READILY VISIBLE TO PASSERS-BY, FOR 5 PERCENT OF NEW VISITOR MOTORIZED VEHICLE PARKING SPACES BEING ADDED, WITH A MINIMUM OF ONE TWO-BIKE CAPACITY RACK.

EXCEPTION: ADDITIONS OR ALTERATIONS WHICH ADD NINE OR LESS VISITOR VEHICULAR PARKING SPACES.

5.106.4.1.2 LONG-TERM BICYCLE PARKING
FOR NEW BUILDINGS WITH TENANT SPACES THAT HAVE 10 OR MORE TENANT-OCCUPANTS, PROVIDE SECURE BICYCLE PARKING FOR 5 PERCENT OF THE TENANT-OCCUPANT VEHICULAR PARKING SPACES WITH A MINIMUM OF ONE BICYCLE PARKING FACILITY.

5.106.4.1.3
FOR ADDITIONS OR ALTERATIONS THAT ADD 10 OR MORE TENANT-OCCUPANT VEHICULAR PARKING SPACES, PROVIDE SECURE BICYCLE PARKING FOR 5 PERCENT OF THE TENANT VEHICULAR PARKING SPACES BEING ADDED, WITH A MINIMUM OF ONE BICYCLE PARKING FACILITY.

5.106.4.1.4
FOR NEW SHELL BUILDINGS IN PHASED PROJECTS PROVIDE SECURE BICYCLE PARKING FOR 5 PERCENT OF THE ANTICIPATED TENANT-OCCUPANT VEHICULAR PARKING SPACES WITH A MINIMUM OF ONE BICYCLE PARKING FACILITY.

5.106.4.1.5
ACCEPTABLE BICYCLE PARKING FACILITY FOR ***SECTIONS 5.106.4.1.2***, ***5.106.4.1.3***, AND ***5.106.4.1.4*** SHALL BE CONVENIENT FROM THE STREET AND SHALL MEET ONE OF THE FOLLOWING:

1. COVERED, LOCKABLE ENCLOSURES WITH PERMANENTLY ANCHORED RACKS FOR BICYCLES;
2. LOCKABLE BICYCLE ROOMS WITH PERMANENTLY ANCHORED RACKS; OR
3. LOCKABLE, PERMANENTLY ANCHORED BICYCLE LOCKERS.

NOTE: ADDITIONAL INFORMATION ON RECOMMENDED BICYCLE ACCOMMODATIONS MAY BE OBTAINED FROM SACRAMENTO AREA BICYCLE ADVOCATES.

5.106.4.2 BICYCLE PARKING [DSA]
FOR PUBLIC SCHOOLS AND COMMUNITY COLLEGES, COMPLY WITH ***SECTIONS 5.106.4.2.1*** AND ***5.106.4.2.2.***

5.106.4.2.1 STUDENT BICYCLE PARKING
PROVIDE PERMANENTLY ANCHORED BICYCLE RACKS CONVENIENTLY ACCESSED WITH A MINIMUM OF FOUR TWO-BIKE CAPACITY RACKS PER NEW BUILDING.

5.106.4.2.2 STAFF BICYCLE PARKING
PROVIDE PERMANENT, SECURE BICYCLE PARKING CONVENIENTLY ACCESSED WITH A MINIMUM OF TWO STAFF BICYCLE PARKING SPACES PER NEW BUILDING. ACCEPTABLE BICYCLE PARKING FACILITIES SHALL BE CONVENIENT FROM THE STREET OR STAFF PARKING AREA AND SHALL MEET ONE OF THE FOLLOWING:

1. COVERED, LOCKABLE ENCLOSURES WITH PERMANENTLY ANCHORED RACKS FOR BICYCLES;
2. LOCKABLE BICYCLE ROOMS WITH PERMANENTLY ANCHORED RACKS; OR
3. LOCKABLE, PERMANENTLY ANCHORED BICYCLE LOCKERS.

5.106.5.2 DESIGNATED PARKING FOR CLEAN AIR VEHICLES
IN NEW PROJECTS OR ADDITIONS OR ALTERATIONS THAT ADD 10 OR MORE VEHICULAR PARKING SPACES, PROVIDE DESIGNATED PARKING FOR ANY COMBINATION OF LOW-EMITTING, FUEL-EFFICIENT AND CARPOOL/VAN POOL VEHICLES AS FOLLOWS:

TABLE 5.106.5.2

TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED SPACES
0-9	0
10-25	3
26-50	6
51-75	9
76-100	12
101-150	18
151-200	21
201 AND OVER	AT LEAST 12% OF TOTAL*

*CALCULATION FOR SPACES SHALL BE ROUNDED UP TO THE NEAREST WHOLE NUMBER

NOTE: DESIGNATED PARKING FOR CLEAN AIR VEHICLES SHALL COUNT TOWARD THE TOTAL PARKING SPACES REQUIRED BY THE LOCAL ENFORCING AGENCIES

5.106.5.2.1 PARKING STALL MARKING
PAINT, IN THE PAINT USED FOR STALL STRIPING, THE FOLLOWING CHARACTERS SUCH THAT THE LOWER EDGE OF THE LAST WORD ALIGNS WITH THE END OF THE STALL STRIPING AND IS VISIBLE BENEATH A PARKED VEHICLE: CLEAN AIR/ VANPOOL/EV

NOTE: VEHICLES BEARING CLEAN AIR VEHICLE STICKERS FROM EXPIRED HOV LANE PROGRAMS MAY BE CONSIDERED ELIGIBLE FOR DESIGNATED PARKING SPACES.

5.106.5.3 ELECTRIC VEHICLE (EV) CHARGING [N]
CONSTRUCTION SHALL COMPLY WITH ***SECTION 5.106.5.3.1*** OR ***SECTION 5.106.5.3.2*** TO FACILITATE FUTURE INSTALLATION OF ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). WHEN EVSE(S) IS/ARE INSTALLED, IT SHALL BE IN ACCORDANCE WITH THE *CALIFORNIA BUILDING CODE*, THE *CALIFORNIA ELECTRICAL CODE* AND AS FOLLOWS:

5.106.5.3.1 SINGLE CHARGING SPACE REQUIREMENTS [N]
WHEN ONLY A SINGLE CHARGING SPACE IS REQUIRED PER ***TABLE 5.106.5.3.3,*** A RACEWAY IS REQUIRED TO BE INSTALLED AT THE TIME OF CONSTRUCTION AND SHALL BE INSTALLED IN ACCORDANCE WITH THE *CALIFORNIA ELECTRICAL CODE*. CONSTRUCTION PLANS AND SPECIFICATIONS SHALL INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
1. THE TYPE AND LOCATION OF THE EVSE.
2. A LISTED RACEWAY CAPABLE OF ACCOMMODATING A 208/240-VOLT DEDICATED BRANCH CIRCUIT.
3. THE RACEWAY SHALL NOT BE LESS THAN TRADE SIZE 1."
4. THE RACEWAY SHALL ORIGINATE AT A SERVICE PANEL OR A SUBPANEL SERVING THE AREA, AND SHALL TERMINATE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF THE CHARGING EQUIPMENT AND INTO A LISTED SUITABLE CABINET, BOX, ENCLOSURE OR EQUIVALENT.
5. THE SERVICE PANEL OR SUBPANEL SHALL HAVE SUFFICIENT CAPACITY TO ACCOMMODATE A MINIMUM 40-AMPERE DEDICATED BRANCH CIRCUIT FOR THE FUTURE INSTALLATION OF THE EVSE.

5.106.5.3.2 MULTIPLE CHARGING SPACE REQUIREMENTS [N]
WHEN MULTIPLE CHARGING SPACES ARE REQUIRED PER ***TABLE 5.106.5.3.3*** RACEWAY(S) IS/ARE REQUIRED TO BE INSTALLED AT THE TIME OF CONSTRUCTION AND SHALL BE INSTALLED IN ACCORDANCE WITH THE *CALIFORNIA ELECTRICAL CODE* CONSTRUCTION PLANS AND SPECIFICATIONS SHALL INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
1. THE TYPE AND LOCATION OF THE EVSE.
2. THE RACEWAY(S) SHALL ORIGINATE AT A SERVICE PANEL OR A SUBPANEL(S) SERVING THE AREA, AND SHALL TERMINATE IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF THE CHARGING EQUIPMENT AND INTO LISTED SUITABLE CABINET(S), BOX(ES), ENCLOSURE(S) OR EQUIVALENT.
3. PLAN DESIGN SHALL BE BASED UPON 40-AMPERE MINIMUM BRANCH CIRCUITS.
4. ELECTRICAL CALCULATIONS SHALL SUBSTANTIATE THE DESIGN OF THE ELECTRICAL SYSTEM, TO INCLUDE THE RATING OF EQUIPMENT AND ANY ON-SITE DISTRIBUTION TRANSFORMERS
   1. AND HAVE SUFFICIENT CAPACITY TO SIMULTANEOUSLY CHARGE ALL REQUIRED EVS AT ITS FULL RATED AMPERAGE.
5. THE SERVICE PANEL OR SUBPANEL(S) SHALL HAVE SUFFICIENT CAPACITY TO ACCOMMODATE THE REQUIRED NUMBER OF DEDICATED BRANCH CIRCUIT(S) FOR THE FUTURE INSTALLATION OF THE EVSE.

5.106.5.3.3 EV CHARGING SPACE CALCULATION [N]
TABLE 5.106.5.3.3 SHALL BE USED TO DETERMINE IF SINGLE OR MULTIPLE CHARGING SPACE REQUIREMENTS APPLY FOR THE FUTURE INSTALLATION OF EVSE.
EXCEPTIONS: ON A CASE-BY-CASE BASIS WHERE THE LOCAL ENFORCING AGENCY HAS DETERMINED EV CHARGING AND INFRASTRUCTURE IS NOT FEASIBLE BASED UPON ONE OR MORE OF THE FOLLOWING CONDITIONS:
1. WHERE THERE IS INSUFFICIENT ELECTRICAL SUPPLY.
2. WHERE THERE IS EVIDENCE SUITABLE TO THE LOCAL ENFORCING AGENCY SUBSTANTIATING THAT ADDITIONAL LOCAL UTILITY INFRASTRUCTURE DESIGN REQUIREMENTS, DIRECTLY RELATED TO THE IMPLEMENTATION OF ***SECTION 5.106.5.3,*** MAY ADVERSELY IMPACT THE CONSTRUCTION COST OF THE PROJECT.

TABLE 5.106.5.3.3

TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV SPACES
0-9	0
10-25	2
26-50	4
51-75	7
76-100	9
101-150	13
151-200	18
201 AND OVER	10% OF TOTAL*

*CALCULATIONS FOR SPACES SHALL BE ROUNDED UP TO THE NEAREST WHOLE NUMBER

5.106.5.3.4 [N] IDENTIFICATION
THE SERVICE PANEL OR SUBPANEL(S) CIRCUIT DIRECTORY SHALL IDENTIFY THE RESERVED OVERCURRENT PROTECTIVE DEVICE SPACE(S) FOR FUTURE EV CHARGING AS "EV CAPABLE". THE RACEWAY TERMINATION LOCATION SHALL BE PERMANENTLY AND VISIBLY MARKED AS "EV CAPABLE."

5.106.5.3.5 [N]
FUTURE CHARGING SPACES QUALIFY AS DESIGNATED PARKING AS DESCRIBED IN ***SECTION 5.106.5.2*** DESIGNATED PARKING FOR CLEAN AIR VEHICLES.
NOTE: FUTURE ELECTRIC VEHICLE CHARGING SPACES SHALL COUNTY TOWARD THE TOTAL PARKING SPACES REQUIRED BY THE LOCAL ENFORCING AGENCIES.

5.106.8 LIGHT POLLUTION REDUCTION [N].I
OUTDOOR LIGHTING SYSTEMS SHALL BE DESIGNED AND INSTALLED TO COMPLY WITH THE FOLLOWING:
1. THE MINIMUM REQUIREMENTS IN THE *CALIFORNIA ENERGY CODE* FOR LIGHTING ZONES 0-4 AS DEFINED IN ***CHAPTER 10, SECTION 10-114*** OF THE *CALIFORNIA ADMINISTRATIVE CODE*; AND
2. BACKLIGHT (B) RATINGS AS DEFINED IN IES TM-15-11 (SHOWN IN ***TABLE A-1 IN CHAPTER 8***);
3. UPLIGHT AND GLARE RATINGS AS DEFINED IN *CALIFORNIA ENERGY CODE* (SHOWN IN ***TABLES 130.2-A*** AND ***130.2-B*** IN ***CHAPTER 8***) AND
4. ALLOWABLE BUG RATINGS NOT EXCEEDING THOSE SHOWN IN ***TABLE 5.106.8 [N]***,

OR COMPLY WITH A LOCAL ORDINANCE LAWFULLY ENACTED PURSUANT TO ***SECTION 101.7***, WHICHEVER IS MORE STRINGENT.

EXCEPTIONS: [N]
1. LUMINAIRES THAT QUALIFY AS EXCEPTIONS IN ***SECTION 130.2(B) AND 140.7*** OF THE *CALIFORNIA ENERGY CODE*
2. EMERGENCY LIGHTING.
3. BUILDING FACADE MEETING THE REQUIREMENTS IN ***TABLE 140.7-B*** OF THE *CALIFORNIA ENERGY CODE, PART 6.*
4. CUSTOM LIGHTING FEATURES AS ALLOWED BY THE LOCAL ENFORCING AGENCY, AS PERMITTED BY ***SECTION 101.8*** ALTERNATE MATERIALS, DESIGNS AND METHODS OF CONSTRUCTION.
5. LUMINAIRES WITH LESS THAN 6,200 INITIAL LUMINAIRE LUMENS.

NOTES: [N]
1. SEE ALSO *CALIFORNIA BUILDING CODE*, ***CHAPTER 12, SECTION 1205.7*** FOR COLLEGE CAMPUS LIGHTING REQUIREMENTS FOR PARKING FACILITIES AND WALKWAYS.
2. REFER TO ***CHAPTER 8*** (COMPLIANCE FORMS, WORKSHEETS AND REFERENCE MATERIAL) FOR IES TM-15-11 ***TABLE A1***, *CALIFORNIA ENERGY CODE* ***TABLES 130.2-A*** AND ***130.2-B.***
3. REFER TO THE *CALIFORNIA ENERGY CODE* FOR REQUIREMENTS FOR ADDITIONS AND ALTERATIONS.

TABLE 5.106.8 [N] - MAXIMUM ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATING[1, 2]

ALLOWABLE RATING	LIGHTING ZONE LZ0	LIGHTING ZONE LZ1	LIGHTING ZONE LZ2	LIGHTING ZONE LZ3	LIGHTING ZONE LZ4
MAXIMUM ALLOWABLE BACKLIGHT RATING[3] (B)					
LUMINAIRE GREATER THAN 2 MOUNTING HEIGHTS (MH) FROM PROPERTY LINE	N/A	NO LIMIT	NO LIMIT	NO LIMIT	NO LIMIT
LUMINAIRE BACK HEMISPHERE IS 1-2 MH FROM PROPERTY LINE	N/A	B2	B3	B4	B4
LUMINAIRE BACK HEMISPHERE IS 0.5-1 MH FROM PROPERTY LINE	N/A	B1	B2	B3	B3
LUMINAIRE BACK HEMISPHERE IS LESS THAN 0.5 MH FROM PROPERTY LINE	N/A	B0	B0	B1	B2
MAXIMUM ALLOWABLE UPLIGHT RATING (U)					
FOR AREA LIGHTING[3]	N/A	U0	U0	U0	U0
FOR ALL OTHER OUTDOOR LIGHTING, INCLUDING DECORATIVE LUMINAIRES	N/A	U1	U2	U3	U4
MAXIMUM ALLOWABLE GLARE RATING[5] (G)					
LUMINAIRE GREATER THAN 2 MOUNTING HEIGHTS (MH) FROM PROPERTY LINE	N/A	G1	G2	G3	G4
LUMINAIRE BACK HEMISPHERE IS 1-2 MH FROM PROPERTY LINE	N/A	G0	G1	G1	G2
LUMINAIRE BACK HEMISPHERE IS 0.5-1 MH FROM PROPERTY LINE	N/A	G0	G0	G1	G1
LUMINAIRE BACK HEMISPHERE IS LESS THAN 0.5 MH FROM PROPERTY LINE	N/A	G0	G0	G0	G1

1. IESNA LIGHTING ZONES 0 ARE NOT APPLICABLE; REFER TO LIGHTING ZONES AS DEFINED IN THE *CALIFORNIA ENERGY CODE* AND ***CHAPTER 10*** OF THE *CALIFORNIA ADMINISTRATIVE CODE.*
2. FOR PROPERTY LINES THAT ABUT PUBLIC WALKWAYS, BIKEWAYS, PLAZAS AND PARKING LOTS, THE PROPERTY LINE MAY BE CONSIDERED TO BE 5 FEET BEYOND THE ACTUAL PROPERTY LINE FOR PURPOSE OF DETERMINING COMPLIANCE WITH THIS SECTION. FOR PROPERTY LINES THAT ABUT PUBLIC ROADWAYS AND PUBLIC TRANSIT CORRIDORS, THE PROPERTY LINE MAY BE CONSIDERED TO BE THE CENTERLINE OF THE PUBLIC ROADWAY OR PUBLIC TRANSIT CORRIDOR FOR THE PURPOSE OF DETERMINING COMPLIANCE WITH THIS SECTION.
3. GENERAL LIGHTING LUMINAIRES IN AREAS SUCH AS OUTDOOR PARKING, SALES OR STORAGE LOTS SHALL MEET THESE REDUCED RATINGS. DECORATIVE LUMINAIRES LOCATED IN THESE AREAS SHALL MEET U-VALUE LIMITS FOR "ALL OTHER OUTDOOR LIGHTING."

5.106.8.1 FACING - BACKLIGHT
LUMINAIRES WITHIN 2MH OF A PROPERTY LINE SHALL BE ORIENTED SO THAT THE NEAREST PROPERTY LINE IS BEHIND THE FIXTURE, AND SHALL COMPLY WITH THE BACKLIGHT RATING SPECIFIED IN TABLE 5.106.8 BASED ON THE LIGHTING ZONE AND DISTANCE TO THE NEAREST POINT OF THAT PROPERTY LINE.

EXCEPTION: CORNERS. IF TWO PROPERTY LINES (OR TWO SEGMENTS OF THE SAME PROPERTY LINE) HAVE EQUIDISTANT POINTS TO THE LUMINAIRE, THEN THE LUMINAIRE MAY BE ORIENTED SO THAT THE INTERSECTION OF THE TWO LINES (THE CORNER) IS DIRECTLY BEHIND THE LUMINAIRE. THE LUMINAIRE SHALL STILL USE THE DISTANCE TO THE NEAREST POINT(S) ON THE PROPERTY LINES TO DETERMINE THE REQUIRED BACKLIGHT RATING.

5.106.8.2 FACING - GLARE
FOR LUMINAIRES COVERED BY 5.106.8.1, IF A PROPERTY LINE ALSO EXISTS WITHIN OR EXTENDS INTO THE FRONT HEMISPHERE WITHIN 2MH OF THE LUMINAIRE THEN THE LUMINAIRE SHALL COMPLY WITH THE MORE STRIGENT GLARE RATING SPECIFIED IN TABLE 5.106.8 BASED ON THE LIGHTING ZONE AND DISTANCE TO THE NEAREST POINT ON THE NEAREST PROPERTY LINE WITHIN THE FRONT HEMISPHERE.

5.106.10 GRADING AND PAVING
CONSTRUCTION PLANS SHALL INDICATE HOW SITE GRADING OR A DRAINAGE SYSTEM WILL MANAGE ALL SURFACE WATER FLOWS TO KEEP WATER FROM ENTERING BUILDINGS. EXAMPLES OF METHODS TO MANAGE SURFACE WATER INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. SWALES.
2. WATER COLLECTION AND DISPOSAL SYSTEMS.
3. FRENCH DRAINS.
4. WATER RETENTION GARDENS.
5. OTHER WATER MEASURES WHICH KEEP SURFACE WATER AWAY FROM BUILDINGS AND AID IN GROUNDWATER RECHARGE.

EXCEPTION: ADDITIONS AND ALTERATIONS NOT ALTERING THE DRAINAGE PATH.

5.106.12 SHADE TREES [DSA-SS].
SHADE TREES SHALL BE PLANTED TO COMPLY WITH ***SECTIONS 5.106.12.1***, ***5.106.12.2***, AND ***5.106.12.3***. PERCENTAGES SHOWN SHALL BE MEASURED AT NOON ON THE SUMMER SOLSTICE. LANDSCAPE IRRIGATIONNECESSARY TO ESTABLISH AND MAINTAIN TREE HEALTH SHALL COMPLY WITH ***SECTION 5.304.6***.

5.106.12.1 SURFACE PARKING AREAS
SHADE TREE PLANTINGS, MINIMUM #10 CONTAINER SIZE OR EQUAL, SHALL BE INSTALLED TO PROVIDE SHADE OVER 50 PERCENT OF THE PARKING AREA WITHIN 15 YEARS.

EXCEPTIONS: THE SURFACE PARKING AREA COVERED BY SOLAR PHOTOVOLTAIC SHADE STRUCTURES, OR SHADE STRUCTURES, WITH ROOFING MATERIALS THAT COMPLY WITH ***TABLE A5.106.11.2.2*** IN APPENDIX A5, ARE NOT INCLUDED IN THE TOTAL AREA CALCULATIONS.

5.106.12.2 LANDSCAPE AREAS
SHADE TRESS PLANTINGS, MINIMUM #10 CONTAINER SIZE OR EQUAL SHALL BE INSTALLED TO PROVIDE SHADE OF 20% OF THE LANDSCAPE AREA WITHIN 15 YEARS.

EXCEPTIONS: PLAYFIELDS FOR ORGANIZED SPORT ACTIVITY ARE NOT INCLUDED IN THE TOTAL AREA CALCULATION.

5.106.12.3. HARDSCAPE AREAS.
SHADE TREE PLANTINGS, MINIMUM #10 CONTAINER SIZE OR EQUAL SHALL BE INSTALLED TO PROVIDE SHADE OVER 20% OF THE HARDSCAPE AREA WITHIN 15 YEARS.

EXCEPTIONS: WALKS, HARDSCAPE AREAS COVERED BY SOLAR PHOTOVOLTAIC SHADE STRUCTURES, AND HARDSCAPE AREAS COVERED BY SHADE STRUCTURES WITH ROOFING MATERIALS THAT COMPLY WITH ***TABLE A5.106.11.2.2*** IN APPENDIX A5, ARE NOT INCLUDED IN THE TOTAL AREA CALCULATION.

DIVISION 5.2 ENERGY EFFICIENCY

5.201 GENERAL

5.201.1 SCOPE. CALIFORNIA ENERGY CODE
FOR THE PURPOSES OF MANDATORY ENERGY EFFICIENCY STANDARDS IN THIS CODE, THE CALIFORNIA ENERGY COMMISSION WILL CONTINUE TO ADOPT MANDATORY BUILDING STANDARDS.

DIVISION 5.3 WATER EFFICIENCY AND CONSERVATION

5.301 GENERAL

5.301.1 SCOPE
THE PROVISIONS OF THIS CHAPTER SHALL ESTABLISH THE MEANS OF CONSERVING WATER USED INDOORS, OUTDOORS AND IN WASTEWATER CONVEYANCE.

5.303 INDOOR WATER USE

5.303.1 METERS
SEPARATE SUBMETERS OR METERING DEVICES SHALL BE INSTALLED FOR THE USES DESCRIBED IN ***SECTIONS 5.303.1.1*** AND ***5.303.1.2***.

5.303.1.1 NEW BUILDINGS OR ADDITIONS IN EXCESS OF 50,000 SQUARE FEET
SEPARATE SUBMETERS SHALL BE INSTALLED AS FOLLOWS:

1. FOR EACH INDIVIDUAL LEASED, RENTED, OR OTHER TENANT SPACE WITHIN THE BUILDING PROJECTED TO CONSUME MORE THAN 100 GAL/DAY (380 L/DAY), INCLUDING, BUT NOT LIMITED TO, SPACES USED FOR LAUNDRY OR CLEANERS, RESTAURANT OR FOOD SERVICE, MEDICAL OR DENTAL OFFICE, LABORATORY, OR BEAUTY SALON OR BARBER SHOP.
2. WHERE SEPARATE SUBMETERS FOR INDIVIDUAL BUILDING TENANTS ARE UNFEASIBLE, FOR WATER SUPPLIED TO THE FOLLOWING SUBSYSTEMS:

CITY OF SAN LUIS OBISPO

PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: CAL GREEN REQUIREMENTS

LICENSED ARCHITECT
KATHRYN ANNE HICKS
C-38079
02 - 28 - 2025
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY: DAVID GIBBS
DRAWN BY: DAVID GIBBS
CHECKED BY: KATHRYN HICKS
APPROVED BY: KATHRYN HICKS
SCALE:
DATE: 05.14.2024
CITY SPECIFICATION NO.
PLAN FILE NO. / LOCATION
SHEET NO. G-105

10/21/2022 2:29:24 PM

2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 2 (JANUARY 2020, INCLUDES JULY 2021 SUPPLEMENT)

a. MAKEUP WATER FOR COOLING TOWERS WHERE FLOW THROUGH IS GREATER THAN 500 GPM (30 L/S).
b. MAKEUP WATER FOR EVAPORATIVE COOLERS GREATER THAN 6 GPM (0.04 L/S).
c. STEAM AND HOT-WATER BOILERS WITH ENERGY INPUT MORE THAN 500,000 BTU/H (147 KW).

5.303.1.2 EXCESS CONSUMPTION
A SEPARATE SUBMETER OR METERING DEVICE SHALL BE PROVIDED FOR ANY TENANT WITHIN A NEW BUILDING OR WITHIN AN ADDITION THAT IS PROJECTED TO CONSUME MORE THAN 1,000 GAL/DAY.

5.303.3 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS
PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) SHALL COMPLY WITH THE FOLLOWING:

5.303.3.1 WATER CLOSETS
THE EFFECTIVE FLUSH VOLUME OF ALL WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS PER FLUSH. TANK-TYPE WATER CLOSETS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR TANK-TYPE TOILETS.

NOTE: THE EFFECTIVE FLUSH VOLUME OF DUAL FLUSH TOILETS IS DEFINED AS THE COMPOSITE, AVERAGE FLUSH VOLUME OF TWO REDUCED FLUSHES AND ONE FULL FLUSH.

5.303.3.2 URINALS

5.303.3.2.1 WALL-MOUNTED URINALS
THE EFFECTIVE FLUSH VOLUME OF WALL-MOUNTED URINALS SHALL NOT EXCEED 0.125 GALLONS PER FLUSH.

5.303.3.2.2 FLOOR-MOUNTED URINALS
THE EFFECTIVE FLUSH VOLUME OF FLOOR-MOUNTED OR OTHER URINALS SHALL NOT EXCEED 0.5 GALLONS PER FLUSH.

5.303.3.3 SHOWERHEADS. [BSC-CG]

5.303.3.3.1 SINGLE SHOWERHEAD
SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS PER MINUTE AT 80 PSI. SHOWERHEADS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR SHOWERHEADS.

5.303.3.3.2 MULTIPLE SHOWERHEADS SERVING ONE SHOWER
WHEN A SHOWER IS SERVED BY MORE THAN ONE SHOWERHEAD, THE COMBINED FLOW RATE OF ALL SHOWERHEADS AND/OR OTHER SHOWER OUTLETS CONTROLLED BY A SINGLE VALVE SHALL NOT EXCEED 1.8 GALLONS PER MINUTE AT 80 PSI, OR THE SHOWER SHALL BE DESIGNED TO ALLOW ONLY ONE SHOWER OUTLET TO BE IN OPERATION AT A TIME.

NOTE: A HAND-HELD SHOWER SHALL BE CONSIDERED A SHOWERHEAD.

5.303.3.4 FAUCETS AND FOUNTAINS

5.303.3.4.1 NONRESIDENTIAL LAVATORY FAUCETS
LAVATORY FAUCETS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 0.5 GALLONS PER MINUTE AT 60 PSI.

5.303.3.4.2 KITCHEN FAUCETS
KITCHEN FAUCETS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS PER MINUTE AT 60 PSI. KITCHEN FAUCETS MAY TEMPORARILY INCREASE THE FLOW ABOVE THE MAXIMUM RATE, BUT NOT TO EXCEED 2.2 GALLONS PER MINUTE AT 60 PSI, AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GALLONS PER MINUTE AT 60 PSI.

5.303.3.4.3 WASH FOUNTAINS
WASH FOUNTAINS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS PER MINUTE/20 [RIM SPACE (INCHES) AT 60 PSI].

5.303.3.4.4 METERING FAUCETS
METERING FAUCETS SHALL NOT DELIVER MORE THAN 0.20 GALLONS PER CYCLE.

5.303.3.4.5 METERING FAUCETS FOR WASH FOUNTAINS
METERING FAUCETS FOR WASH FOUNTAINS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 0.20 GALLONS PER CYCLE/20 [RIM SPACE (INCHES) AT 60 PSI].

NOTE: WHERE COMPLYING FAUCETS ARE UNAVAILABLE, AERATORS OR OTHER MEANS MAY BE USED TO ACHIEVE REDUCTION.

5.303.3.4.6 PRE-RINSE SPRAY VALVE
WHEN INSTALLED, SHALL MEET THE REQUIREMENTS IN THE CALIFORNIA CODE OF REGULATIONS, TITLE 20 (APPLIANCE EFFICIENCY REGULATIONS), SECTION 1605.1(H)(4) TABLE H-2, SECTION 1605.3(H)(4)(A), AND SECTION 1607(D)(7), AND SHALL BE EQUIPPED WITH AN INTEGRAL AUTOMATIC SHUTOFF.

5.303.4 COMMERCIAL KITCHEN EQUIPMENT

5.303.4.1 FOOD WASTE DISPOSERS
DISPOSERS SHALL EITHER MODULATE THE USE OF WATER TO NO MORE THAN 1 GPM WHEN THE DISPOSER IS NOT IN USE (NOT ACTIVELY GRINDING FOOD WASTE/NO-LOAD) OR SHALL AUTOMATICALLY SHUT OFF AFTER NO MORE THAN 10 MINUTES OF INACTIVITY. DISPOSERS SHALL USE NO MORE THAN 8 GPM OF WATER.

NOTE: THIS CODE SECTION DOES NOT AFFECT LOCAL JURISDICTION AUTHORITY TO PROHIBIT OR REQUIRE DISPOSER INSTALLATION.

5.303.5 AREAS OF ADDITION OR ALTERATION
FOR THOSE OCCUPANCIES WITHIN THE AUTHORITY OF THE CALIFORNIA BUILDING STANDARDS COMMISSION AS SPECIFIED IN ***SECTION 103***, THE PROVISIONS OF ***SECTIONS 5.303.3*** AND ***5.303.4*** SHALL APPLY TO NEW FIXTURES IN ADDITIONS OR AREAS OF ALTERATION TO THE BUILDING.

5.303.6 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS
PLUMBING FIXTURES AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE *CALIFORNIA PLUMBING CODE*, AND SHALL MEET THE APPLICABLE STANDARDS REFERENCED IN ***TABLE 1701.1*** OF THE *CALIFORNIA PLUMBING CODE* AND IN ***CHAPTER 6*** OF THIS CODE.

5.304 OUTDOOR WATER USE

5.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS
NONRESIDENTIAL DEVELOPMENTS SHALL COMPLY WITH A LOCAL WATER EFFICIENT LANDSCAPE ORDINANCE OR THE CURRENT CALIFORNIA DEPARTMENT OF WATER RESOURCES' MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO), WHICHEVER IS MORE STRINGENT.
NOTES:
1. THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO) IS LOCATED IN THE *CALIFORNIA CODE OF REGULATIONS*, TITLE 23, CHAPTER 2. 7, DIVISION 2.
2. MWELO AND SUPPORTING DOCUMENTS, INCLUDING A WATER BUDGET CALCULATOR, ARE AVAILABLE AT: https://www.water.ca.gov/.

5.304.6 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS
FOR PUBLIC SCHOOLS AND COMMUNITY COLLEGES, LANDSCAPE PROJECTS AS DESCRIBED IN ***SECTIONS 5.304.6.1*** AND ***5.304.6.2*** SHALL COMPLY WITH THE CALIFORNIA DEPARTMENT OF WATER RESOURCES MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO) COMMENCING WITH ***SECTION 490*** OF CHAPTER 2.7, DIVISION 2, TITLE 23, *CALIFORNIA CODE OF REGULATIONS*, EXCEPT THAT THE EVAPOTRANSPIRATION ADJUSTMENT FACTOR (ETAF) SHALL BE 0.65 WITH AN ADDITIONAL WATER ALLOWANCE FOR SPECIAL LANDSCAPE AREAS (SLA) OF 0.35.

EXCEPTION: ANY PROJECT WITH AN AGGREGATE LANDSCAPE AREA OF 2,500 SQUARE FEET OR LESS MAY COMPLY WITH THE PRESCRIPTIVE MEASURES CONTAINED IN APPENDIX D OF THE MWELO.

5.304.6.1 NEWLY CONSTRUCTED LANDSCAPES
NEW CONSTRUCTION PROJECTS WITH AN AGGREGATE LANDSCAPE AREA EQUAL TO OR GREATER THAN 500 SQUARE FEET.

5.304.6.2 REHABILITATED LANDSCAPES
REHABILITATED LANDSCAPE PROJECTS WITH AN AGGREGATE LANDSCAPE AREA EQUAL TO OR GREATER THAN 1,200 SQUARE FEET.

DIVISION 5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

5.401 GENERAL

5.401.1 SCOPE
THE PROVISIONS OF THIS CHAPTER SHALL OUTLINE MEANS OF ACHIEVING MATERIAL CONSERVATION AND RESOURCE EFFICIENCY THROUGH PROTECTION OF BUILDINGS FROM EXTERIOR MOISTURE, CONSTRUCTION WASTE DIVERSION, EMPLOYMENT OF TECHNIQUES TO REDUCE POLLUTION THROUGH RECYCLING OF MATERIALS, AND BUILDING COMMISSIONING OR TESTING AND ADJUSTING.

5.407 WATER RESISTANCE AND MOISTURE MANAGEMENT

5.407.1 WEATHER PROTECTION
PROVIDE A WEATHER-RESISTANT EXTERIOR WALL AND FOUNDATION ENVELOPE AS REQUIRED BY *CALIFORNIA BUILDING CODE* ***SECTION 1402.2*** (WEATHER PROTECTION), MANUFACTURER'S INSTALLATION INSTRUCTIONS OR LOCAL ORDINANCE, WHICHEVER IS MORE STRINGENT.

5.407.2 MOISTURE CONTROL
EMPLOY MOISTURE CONTROL MEASURES BY THE FOLLOWING METHODS.

5.407.2.1 SPRINKLERS
DESIGN AND MAINTAIN LANDSCAPE IRRIGATION SYSTEMS TO PREVENT SPRAY ON STRUCTURES.

5.407.2.2 ENTRIES AND OPENINGS
DESIGN EXTERIOR ENTRIES AND/OR OPENINGS SUBJECT TO FOOT TRAFFIC OR WIND-DRIVEN RAIN TO PREVENT WATER INTRUSION INTO BUILDINGS AS FOLLOWS:

5.407.2.2.1 EXTERIOR DOOR PROTECTION
PRIMARY EXTERIOR ENTRIES SHALL BE COVERED TO PREVENT WATER INTRUSION BY USING NONABSORBENT FLOOR AND WALL FINISHES WITHIN AT LEAST 2 FEET AROUND AND PERPENDICULAR TO SUCH OPENINGS PLUS AT LEAST ONE OF THE FOLLOWING:

1. AN INSTALLED AWNING AT LEAST 4 FEET IN DEPTH.
2. THE DOOR IS PROTECTED BY A ROOF OVERHANG AT LEAST 4 FEET IN DEPTH.
3. THE DOOR IS RECESSED AT LEAST 4 FEET.
4. OTHER METHODS WHICH PROVIDE EQUIVALENT PROTECTION.

5.407.2.2.2 FLASHING
INSTALL FLASHINGS INTEGRATED WITH A DRAINAGE PLANE.

SECTION 5.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

5.408.1 CONSTRUCTION WASTE MANAGEMENT
RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 65 PERCENT OF THE NONHAZARDOUS CONSTRUCTION AND DEMOLITION WASTE IN ACCORDANCE WITH ***SECTION 5.408.1.1***, ***5.408.1.2*** OR ***5.408.1.3***; OR MEET A LOCAL CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT ORDINANCE, WHICHEVER IS MORE STRINGENT.

5.408.1.1 CONSTRUCTION WASTE MANAGEMENT PLAN
WHERE A LOCAL JURISDICTION DOES NOT HAVE A CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT ORDINANCE THAT IS MORE STRINGENT, SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN THAT
1. IDENTIFIES THE CONSTRUCTION AND DEMOLITION WASTE MATERIALS TO BE DIVERTED FROM DISPOSAL BY EFFICIENT USAGE, RECYCLING, REUSE ON THE PROJECT OR SALVAGE FOR FUTURE USE OR SALE.
2. DETERMINES IF CONSTRUCTION AND DEMOLITION WASTE MATERIALS WILL BE SORTED ON-SITE (SOURCE-SEPARATED) OR BULK MIXED (SINGLE STREAM).
3. IDENTIFIES DIVERSION FACILITIES WHERE CONSTRUCTION AND DEMOLITION WASTE MATERIAL COLLECTED WILL BE TAKEN.
4. SPECIFIES THAT THE AMOUNT OF CONSTRUCTION AND DEMOLITION WASTE MATERIALS DIVERTED SHALL BE CALCULATED BY WEIGHT OR VOLUME, BUT NOT BY BOTH.

5.408.1.2 WASTE MANAGEMENT COMPANY
UTILIZE A WASTE MANAGEMENT COMPANY THAT CAN PROVIDE VERIFIABLE DOCUMENTATION THAT THE PERCENTAGE OF CONSTRUCTION AND DEMOLITION WASTE MATERIAL DIVERTED FROM THE LANDFILL COMPLIES WITH THIS SECTION.

NOTE: THE OWNER OR CONTRACTOR SHALL MAKE THE DETERMINATION IF THE CONSTRUCTION AND DEMOLITION WASTE MATERIAL WILL BE DIVERTED BY A WASTE MANAGEMENT COMPANY.

EXCEPTIONS TO *SECTIONS 5.408.1.1* AND *5.408.1.2*:

1. EXCAVATED SOIL AND LAND-CLEARING DEBRIS.
2. ALTERNATE WASTE REDUCTION METHODS DEVELOPED BY WORKING WITH LOCAL AGENCIES IF DIVERSION OR RECYCLE FACILITIES CAPABLE OF COMPLIANCE WITH THIS ITEM DO NOT EXIST.
3. DEMOLITION WASTE MEETING LOCAL ORDINANCE OR CALCULATED IN CONSIDERATION OF LOCAL RECYCLING FACILITIES AND MARKETS.

5.408.1.3 WASTE STREAM REDUCTION ALTERNATIVE
THE COMBINED WEIGHT OF NEW CONSTRUCTION DISPOSAL THAT DOES NOT EXCEED TWO POUNDS PER SQUARE FOOT OF BUILDING AREA MAY BE DEEMED TO MEET THE 65 PERCENT MINIMUM REQUIREMENT AS APPROVED BY THE ENFORCING AGENCY.

5.408.1.4 DOCUMENTATION
DOCUMENTATION SHALL BE PROVIDED TO THE ENFORCING AGENCY WHICH DEMONSTRATES COMPLIANCE WITH ***SECTIONS 5.408.1.1*** THROUGH ***5.408.1.3***. THE WASTE MANAGEMENT PLAN SHALL BE UPDATED AS NECESSARY AND SHALL BE ACCESSIBLE DURING CONSTRUCTION FOR EXAMINATION BY THE ENFORCING AGENCY.

NOTES:
1. SAMPLE FORMS FOUND IN "*A GUIDE TO THE CALIFORNIA GREEN BUILDING STANDARDS CODE (NONRESIDENTIAL)*" LOCATED AT https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-CommissionResources-List-Folder/CALGreen MAY BE USED TO ASSIST IN DOCUMENTING COMPLIANCE WITH THE WASTE MANAGEMENT PLAN.
2. MIXED CONSTRUCTION AND DEMOLITION DEBRIS (C&D) PROCESSORS CAN BE LOCATED AT THE CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY (CALRECYCLE).

5.408.2 UNIVERSAL WASTE. [A]
ADDITIONS AND ALTERATIONS TO A BUILDING OR TENANT SPACE THAT MEET THE SCOPING PROVISIONS IN ***SECTION 301.3*** FOR NONRESIDENTIAL ADDITIONS AND ALTERATIONS, SHALL REQUIRE VERIFICATION THAT UNIVERSAL WASTE ITEMS SUCH AS FLUORESCENT LAMPS AND BALLAST AND MERCURY CONTAINING THERMOSTATS AS WELL AS OTHER CALIFORNIA PROHIBITED UNIVERSAL WASTE MATERIALS ARE DISPOSED OF PROPERLY AND ARE DIVERTED FROM LANDFILLS. A LIST OF PROHIBITED UNIVERSAL WASTE MATERIALS SHALL BE INCLUDED IN THE CONSTRUCTION DOCUMENTS.

NOTE: REFER TO THE UNIVERSAL WASTE RULE LINK AT: https://dtsc.ca.gov/universalwaste/

5.408.3 EXCAVATED SOIL AND LAND CLEARING DEBRIS
100 PERCENT OF TREES, STUMPS, ROCKS AND ASSOCIATED VEGETATION AND SOILS RESULTING PRIMARILY FROM LAND CLEARING SHALL BE REUSED OR RECYCLED. FOR A PHASED PROJECT, SUCH MATERIAL MAY BE STOCKPILED ON SITE UNTIL THE STORAGE SITE IS DEVELOPED.

EXCEPTION: REUSE, EITHER ON-OR OFF-SITE, OF VEGETATION OR SOIL CONTAMINATED BY DISEASE OR PEST INFESTATION.

NOTES:
1. IF CONTAMINATION BY DISEASE OR PEST INFESTATION IS SUSPECTED, CONTACT THE COUNTY AGRICULTURAL COMMISSIONER AND FOLLOW ITS DIRECTION FOR RECYCLING OR DISPOSAL OF THE MATERIAL. (www.cdfa.ca.gov/exec/county/county_contacts.html)
2. FOR A MAP OF KNOWN PEST AND/OR DISEASE QUARANTINE ZONES, CONSULT WITH THE CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE. (www.cdfa.ca.gov)

5.410 BUILDING MAINTENANCE AND OPERATIONS

5.410.1 RECYCLING BY OCCUPANTS
PROVIDE READILY ACCESSIBLE AREAS THAT SERVE THE ENTIRE BUILDING AND ARE IDENTIFIED FOR THE DEPOSITING, STORAGE AND COLLECTION OF NON-HAZARDOUS MATERIALS FOR RECYCLING, INCLUDING (AT A MINIMUM) PAPER, CORRUGATED CARDBOARD, GLASS, PLASTICS, ORGANIC WASTE, AND METALS OR MEET A LAWFULLY ENACTED LOCAL RECYCLING ORDINANCE, IF MORE RESTRICTIVE.

EXCEPTION: RURAL JURISDICTIONS THAT MEET AND APPLY FOR THE EXEMPTION IN PUBLIC RESOURCES CODE 42649.82 (A)(2)(A) ET SEQ. SHALL ALSO BE EXEMPT FROM THE ORGANIC WASTE PORTION OF THIS SECTION.

5.410.1.1 ADDITIONS
ALL ADDITIONS CONDUCTED WITHIN A 12-MONTH PERIOD UNDER SINGLE OR MULTIPLE PERMITS, RESULTING IN AN INCREASE OF 30 PERCENT OR MORE IN FLOOR AREA, SHALL PROVIDE RECYCLING AREAS ON SITE.

EXCEPTION:ADDITIONS WITHIN A TENANT SPACE RESULTING IN LESS THAN A 30-PERCENT INCREASE IN THE TENANT SPACE FLOOR AREA.

5.410.1.2 SAMPLE ORDINANCE
SPACE ALLOCATION FOR RECYCLING AREAS SHALL COMPLY WITH CHAPTER 18, PART 3, DIVISION 30 OF THE *PUBLIC RESOURCES CODE.* CHAPTER 18 IS KNOWN AS THE CALIFORNIA SOLID WASTE REUSE AND RECYCLING ACCESS ACT OF 1991 (ACT).

NOTE: A SAMPLE ORDINANCE FOR USE BY LOCAL AGENCIES MAY BE FOUND IN APPENDIX A OF THE DOCUMENT AT THE CALRECYCLE'S WEB SITE

5.410.2 COMMISSIONING. [N] NEW BUILDINGS 10,000 SQUARE FEET AND OVER
FOR NEW BUILDINGS 10,000 SQUARE FEET AND OVER, BUILDING COMMISSIONING SHALL BE INCLUDED IN THE DESIGN AND CONSTRUCTION PROCESSES OF THE BUILDING PROJECT TO VERIFY THAT THE BUILDING SYSTEMS AND COMPONENTS MEET THE OWNER'S OR OWNER REPRESENTATIVE'S PROJECT REQUIREMENTS. COMMISSIONING SHALL BE PERFORMED IN ACCORDANCE WITH THIS SECTION BY TRAINED PERSONNEL WITH EXPERIENCE ON PROJECTS OF COMPARABLE SIZE AND COMPLEXITY. FOR I-OCCUPANCIES THAT ARE NOT REGULATED BY OSHPD OR FOR I-OCCUPANCIES AND L-OCCUPANCIES THAT ARE NOT REGULATED BY THE *CALIFORNIA ENERGY CODE* ***SECTION 100.0 SCOPE***, ALL REQUIREMENTS IN ***SECTIONS 5.410.2*** THROUGH ***5.410.2.6*** SHALL APPLY.

NOTE: FOR ENERGY-RELATED SYSTEMS UNDER THE SCOPE (***SECTION 100***) OF THE *CALIFORNIA ENERGY CODE*, INCLUDING HEATING, VENTILATION, AIR CONDITIONING (HVAC) SYSTEMS AND CONTROLS, INDOOR LIGHTING SYSTEMS AND CONTROLS, AS WELL AS WATER HEATING SYSTEMS AND CONTROLS, REFER TO *CALIFORNIA ENERGY CODE* ***SECTION 120.8*** FOR COMMISSIONING REQUIREMENTS.

COMMISSIONING REQUIREMENTS SHALL INCLUDE:

1. OWNER'S OR OWNER REPRESENTATIVE'S PROJECT REQUIREMENTS.
2. BASIS OF DESIGN.
3. COMMISSIONING MEASURES SHOWN IN THE CONSTRUCTION DOCUMENTS.
4. COMMISSIONING PLAN.
5. FUNCTIONAL PERFORMANCE TESTING.
6. DOCUMENTATION AND TRAINING.
7. COMMISSIONING REPORT.

EXCEPTIONS:

1. UNCONDITIONED WAREHOUSES OF ANY SIZE.
2. AREAS LESS THAN 10,000 SQUARE FEET USED FOR OFFICES OR OTHER CONDITIONED ACCESSORY SPACES WITHIN UNCONDITIONED WAREHOUSES.
3. TENANT IMPROVEMENTS LESS THAN 10,000 SQUARE FEET AS DESCRIBED IN ***SECTION 303.1.1.***
4. OPEN PARKING GARAGES OF ANY SIZE, OR OPEN PARKING GARAGE AREAS, OF ANY SIZE, WITHIN A STRUCTURE.

NOTE: FOR THE PURPOSES OF THIS SECTION, UNCONDITIONED SHALL MEAN A BUILDING, AREA, OR ROOM WHICH DOES NOT PROVIDE HEATING AND OR AIR CONDITIONING.

INFORMATIONAL NOTES:

1. IAS AC 476 IS AN ACCREDITATION CRITERIA FOR ORGANIZATIONS PROVIDING TRAINING AND/OR CERTIFICATION OF COMMISSIONING PERSONNEL. AC 476 IS AVAILABLE TO THE AUTHORITY HAVING JURISDICTION AS A REFERENCE FOR QUALIFICATIONS OF COMMISSIONING PERSONNEL. AC 476 DOES NOT CERTIFY INDIVIDUALS TO CONDUCT FUNCTIONAL PERFORMANCE TESTS OR TO ADJUST AND BALANCE SYSTEMS.
2. FUNCTIONAL PERFORMANCE TESTING FOR HEATING, VENTILATION, AIR CONDITIONING SYSTEMS AND LIGHTING CONTROLS MUST BE PERFORMED IN COMPLIANCE WITH THE *CALIFORNIA ENERGY CODE.*

5.410.2.1 OWNER'S OR OWNER REPRESENTATIVE'S PROJECT REQUIREMENTS (OPR) [N]
THE EXPECTATIONS AND REQUIREMENTS OF THE BUILDING APPROPRIATE TO ITS PHASE SHALL BE DOCUMENTED BEFORE THE DESIGN PHASE OF THE PROJECT BEGINS. THIS DOCUMENTATION SHALL INCLUDE THE FOLLOWING:

1. ENVIRONMENTAL AND SUSTAINABILITY GOALS.
2. BUILDING SUSTAINABLE GOALS.
3. INDOOR ENVIRONMENTAL QUALITY REQUIREMENTS.
4. PROJECT PROGRAM, INCLUDING FACILITY FUNCTIONS AND HOURS OF OPERATION, AND NEED FOR AFTER HOURS OPERATION.
5. EQUIPMENT AND SYSTEMS EXPECTATIONS.
6. BUILDING OCCUPANT AND OPERATION AND MAINTENANCE (O&M) PERSONNEL EXPECTATIONS.

5.410.2.2 BASIS OF DESIGN (BOD) [N]
A WRITTEN EXPLANATION OF HOW THE DESIGN OF THE BUILDING SYSTEMS MEETS THE OPR SHALL BE COMPLETED AT THE DESIGN PHASE OF THE BUILDING PROJECT. THE BASIS OF DESIGN DOCUMENT SHALL COVER THE FOLLOWING SYSTEMS:

1. RENEWABLE ENERGY SYSTEMS.
2. LANDSCAPE IRRIGATION SYSTEMS.
3. WATER REUSE SYSTEMS.

5.410.2.3 COMMISSIONING PLAN [N]
PRIOR TO PERMIT ISSUANCE A COMMISSIONING PLAN SHALL BE COMPLETED TO DOCUMENT HOW THE PROJECT WILL BE COMMISSIONED. THE COMMISSIONING PLAN SHALL INCLUDE THE FOLLOWING:

A. GENERAL PROJECT INFORMATION.
B. COMMISSIONING GOALS.
C. SYSTEMS TO BE COMMISSIONED. PLANS TO TEST SYSTEMS AND COMPONENTS SHALL INCLUDE:
   a. AN EXPLANATION OF THE ORIGINAL DESIGN INTENT.
   b. EQUIPMENT AND SYSTEMS TO BE TESTED, INCLUDING THE EXTENT OF TESTS.
   c. FUNCTIONS TO BE TESTED.
   d. CONDITIONS UNDER WHICH THE TEST SHALL BE PERFORMED.
   e. MEASURABLE CRITERIA FOR ACCEPTABLE PERFORMANCE.
D. COMMISSIONING TEAM INFORMATION.
E. COMMISSIONING PROCESS ACTIVITIES, SCHEDULES AND RESPONSIBILITIES. PLANS FOR THE COMPLETION OF COMMISSIONING SHALL BE INCLUDED.

5.410.2.4 FUNCTIONAL PERFORMANCE TESTING [N]
FUNCTIONAL PERFORMANCE TESTS SHALL DEMONSTRATE THE CORRECT INSTALLATION AND OPERATION OF EACH COMPONENT, SYSTEM AND SYSTEM- TO-SYSTEM INTERFACE IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. FUNCTIONAL PERFORMANCE TESTING REPORTS SHALL CONTAIN INFORMATION ADDRESSING EACH OF THE BUILDING COMPONENTS TESTED, THE TESTING METHODS UTILIZED, AND INCLUDE ANY READINGS AND ADJUSTMENTS MADE.

5.410.2.5 DOCUMENTATION AND TRAINING [N]
A SYSTEMS MANUAL AND SYSTEMS OPERATIONS TRAINING ARE REQUIRED, INCLUDING OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) REQUIREMENTS IN *CALIFORNIA CODE OF REGULATIONS* (CCR), TITLE 8, SECTION 5142, AND OTHER RELATED REGULATIONS.

5.410.2.5.1 SYSTEMS MANUAL [N]
DOCUMENTATION OF THE OPERATIONAL ASPECTS OF THE BUILDING SHALL BE COMPLETED WITHIN THE SYSTEMS MANUAL AND DELIVERED TO THE BUILDING OWNER OR REPRESENTATIVE. THE SYSTEMS MANUAL SHALL INCLUDE THE FOLLOWING:

1. SITE INFORMATION, INCLUDING FACILITY DESCRIPTION, HISTORY AND CURRENT REQUIREMENTS.
2. SITE CONTACT INFORMATION.
3. BASIC OPERATIONS AND MAINTENANCE, INCLUDING GENERAL SITE OPERATING PROCEDURES, BASIC TROUBLESHOOTING, RECOMMENDED MAINTENANCE REQUIREMENTS, SITE EVENTS LOG.
4. MAJOR SYSTEMS.
5. SITE EQUIPMENT INVENTORY AND MAINTENANCE NOTES.
6. A COPY OF VERIFICATIONS REQUIRED BY THE ENFORCING AGENCY OR THIS CODE.
7. OTHER RESOURCES AND DOCUMENTATION, IF APPLICABLE.

5.410.2.5.2 SYSTEMS OPERATIONS TRAINING [N]
A PROGRAM FOR TRAINING OF THE APPROPRIATE MAINTENANCE STAFF FOR EACH EQUIPMENT TYPE AND/OR SYSTEM SHALL BE DEVELOPED AND DOCUMENTED IN THE COMMISSIONING REPORT AND SHALL INCLUDE THE FOLLOWING:

1. SYSTEM/EQUIPMENT OVERVIEW (WHAT IT IS, WHAT IT DOES AND WITH WHAT OTHER SYSTEMS AND/OR EQUIPMENT IT INTERFACES).
2. REVIEW AND DEMONSTRATION OF SERVICING/PREVENTIVE MAINTENANCE.
3. REVIEW OF THE INFORMATION IN THE SYSTEMS MANUAL.
4. REVIEW OF THE RECORD DRAWINGS ON THE SYSTEM/ EQUIPMENT.

5.410.2.6 COMMISSIONING REPORT [N]
A REPORT OF COMMISSIONING PROCESS ACTIVITIES UNDERTAKEN THROUGH THE DESIGN AND CONSTRUCTION PHASES OF THE BUILDING PROJECT SHALL BE COMPLETED AND PROVIDED TO THE OWNER OR REPRESENTATIVE.

5.410.4 TESTING AND ADJUSTING. NEW BUILDINGS LESS THAN 10,000 SQUARE FEET
TESTING AND ADJUSTING OF SYSTEMS SHALL BE REQUIRED FOR NEW BUILDINGS LESS THAN 10,000 SQUARE FEET OR NEW SYSTEMS TO SERVE AN HYPERLINK "/VIEWER/CALIFORNIA/CA-GREEN-CODE-2016/CHAPTER/2/DEFINITIONS#ADDITION"ADDITION OR ALTERATION SUBJECT TO ***SECTION HYPERLINK "/VIEWER/CALIFORNIA/CA-GREEN-CODE-2016/CHAPTER/3/GREEN-BUILDING#303.1"303.1***.

5.410.4.1 (RESERVED)

NOTE: FOR ENERGY-RELATED SYSTEMS UNDER THE SCOPE (SECTION 100) OF THE *HYPERLINK "/VIEWER/CALIFORNIA/CA-ENERGY-CODE-2016"CALIFORNIA ENERGY CODE*, INCLUDING HEATING, VENTILATION, AIR CONDITIONING (HVAC) SYSTEMS AND CONTROLS, INDOOR LIGHTING SYSTEM AND CONTROLS, AS WELL AS WATER HEATING SYSTEMS AND CONTROLS, REFER TO *CALIFORNIA HYPERLINK "/VIEWER/CALIFORNIA/CA-ENERGY-CODE-2016"ENERGY CODE* ***SECTION 120.8*** FOR COMMISSIONING REQUIREMENTS AND ***SECTIONS 120.5, 120.6, 130.4***, AND ***140.9(B)3*** FOR ADDITIONAL TESTING REQUIREMENTS OF SPECIFIC SYSTEMS.

5.410.4.2 SYSTEMS
DEVELOP A WRITTEN PLAN OF PROCEDURES FOR TESTING AND ADJUSTING SYSTEMS. SYSTEMS TO BE INCLUDED FOR TESTING AND ADJUSTING SHALL INCLUDE, AS APPLICABLE TO THE PROJECT:

1. RENEWABLE ENERGY SYSTEMS.
2. LANDSCAPE IRRIGATION SYSTEMS.
3. WATER REUSE SYSTEMS.

5.410.4.3 PROCEDURES
PERFORM TESTING AND ADJUSTING PROCEDURES IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND APPLICABLE STANDARDS ON EACH SYSTEM.

5.410.4.3.1 HVAC BALANCING
IN ADDITION TO TESTING AND ADJUSTING, BEFORE A NEW SPACE-CONDITIONING SYSTEM SERVING A BUILDING OR SPACE IS OPERATED FOR NORMAL USE, HYPERLINK "/VIEWER/CALIFORNIA/CA-GREEN-CODE-2016/CHAPTER/2/DEFINITIONS#BALANCE"BALANCE THE SYSTEM IN ACCORDANCE WITH THE PROCEDURES DEFINED BY THE TESTING ADJUSTING AND BALANCING BUREAU NATIONAL STANDARDS; THE NATIONAL ENVIRONMENTAL BALANCING BUREAU PROCEDURAL STANDARDS; ASSOCIATED AIR HYPERLINK "/VIEWER/CALIFORNIA/CA-GREEN-CODE-2016/CHAPTER/2/DEFINITIONS#BALANCE"BALANCE COUNCIL NATIONAL STANDARDS OR AS APPROVED BY THE HYPERLINK "/VIEWER/CALIFORNIA/CA-GREEN-CODE-2016/CHAPTER/2/DEFINITIONS#ENFORCING_AGENCY"ENFORCING AGENCY.

5.410.4.4 REPORTING
AFTER COMPLETION OF TESTING, ADJUSTING AND BALANCING, PROVIDE A FINAL REPORT OF TESTING SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESE SERVICES.

5.410.4.5 OPERATION AND MAINTENANCE (O & M) MANUAL
PROVIDE THE BUILDING OWNER OR REPRESENTATIVE WITH DETAILED OPERATING AND MAINTENANCE INSTRUCTIONS AND COPIES OF GUARANTIES/WARRANTIES FOR EACH SYSTEM. O & M INSTRUCTIONS SHALL BE CONSISTENT WITH OSHA REQUIREMENTS IN CCR, TITLE 8, SECTION 5142, AND OTHER RELATED REGULATIONS.

5.410.4.5.1 INSPECTIONS AND REPORTS
INCLUDE A COPY OF ALL INSPECTION VERIFICATIONS AND REPORTS REQUIRED BY THE HYPERLINK "/VIEWER/CALIFORNIA/CA-GREEN-CODE-2016/CHAPTER/2/DEFINITIONS#ENFORCING_AGENCY"ENFORCING AGENCY.

DIVISION 5.5 ENVIRONMENTAL QUALITY

5.501 GENERAL

5.501.1 SCOPE
THE PROVISIONS OF THIS CHAPTER SHALL OUTLINE MEANS OF REDUCING THE QUANTITY OF AIR CONTAMINANTS THAT ARE ODOROUS, IRRITATING, AND/OR HARMFUL TO THE COMFORT AND WELL-BEING OF A BUILDING'S INSTALLERS, OCCUPANTS AND NEIGHBORS.

5.503 FIREPLACES

5.503.1 FIREPLACES
INSTALL ONLY A DIRECT-VENT SEALED-COMBUSTION GAS OR SEALED WOOD-BURNING FIREPLACE, OR A SEALED WOOD-STOVE OR PELLET STOVE, AND REFER TO RESIDENTIAL REQUIREMENTS IN THE *CALIFORNIA ENERGY CODE*, TITLE 24, PART 6, SUBCHAPTER 7, SECTION 150. WOODSTOVES, PELLET STOVES AND FIREPLACES SHALL COMPLY WITH APPLICABLE LOCAL ORDINANCES.

5.503.1.1 WOODSTOVES
WOODSTOVE AND PELLET STOVES SHALL COMPLY WITH U.S. EPA NEW SOURCE PERFORMANCE STANDARDS (NSPS) EMISSION LIMITS AS APPLICABLE, AND SHALL HAVE A PERMANENT LABEL INDICATING THEY ARE CERTIFIED TO MEET THE EMISSION LIMITS.

5.504 POLLUTANT CONTROL

5.504.1 TEMPORARY VENTILATION
THE PERMANENT HVAC SYSTEM SHALL ONLY BE USED DURING CONSTRUCTION IF NECESSARY TO CONDITION THE BUILDING OR AREAS OF ADDITION OR ALTERATION WITHIN THE REQUIRED TEMPERATURE RANGE FOR MATERIAL AND EQUIPMENT INSTALLATION. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, USE RETURN AIR FILTERS WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8, BASED ON ASHRAE 52.2-1999, OR AN AVERAGE EFFICIENCY OF 30 PERCENT BASED ON ASHRAE 52.1-1992. REPLACE ALL FILTERS IMMEDIATELY PRIOR TO OCCUPANCY, OR, IF THE BUILDING IS OCCUPIED DURING ALTERATION, AT THE CONCLUSION OF CONSTRUCTION.

5.504.3 COVERING OF DUCT OPENINGS AND PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION
AT THE TIME OF ROUGH INSTALLATION AND DURING STORAGE ON THE CONSTRUCTION SITE UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEETMETAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST, WATER AND DEBRIS WHICH MAY ENTER THE SYSTEM.

5.504.4 FINISH MATERIAL POLLUTANT CONTROL
FINISH MATERIALS SHALL COMPLY WITH SECTIONS ***5.504.4.1*** THROUGH ***5.504.4.6***.

5.504.4.1 ADHESIVES, SEALANTS AND CAULKS
ADHESIVES, SEALANTS, AND CAULKS USED ON THE PROJECT SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS:

1. ADHESIVES, ADHESIVE BONDING PRIMERS, ADHESIVE PRIMERS, SEALANTS, SEALANT PRIMERS AND CAULKS SHALL COMPLY WITH LOCAL OR REGIONAL AIR POLLUTION CONTROL OR AIR QUALITY MANAGEMENT DISTRICT RULES WHERE APPLICABLE, OR SCAQMD RULE 1168 VOC LIMITS, AS SHOWN IN ***TABLES 5.504.4.1*** AND ***5.504.4.2***. SUCH PRODUCTS ALSO SHALL COMPLY WITH THE RULE 1168 PROHIBITION ON THE USE OF CERTAIN TOXIC COMPOUNDS (CHLOROFORM, ETHYLENE DICHLORIDE, METHYLENE CHLORIDE, PERCHLOROETHYLENE AND TRICHLOROETHYLENE), EXCEPT FOR AEROSOL PRODUCTS AS SPECIFIED IN SUBSECTION 2, BELOW.
2. AEROSOL ADHESIVES, AND SMALLER UNIT SIZES OF ADHESIVES, AND SEALANT OR CAULKING COMPOUNDS (IN UNITS OF PRODUCT, LESS PACKAGING, WHICH DO NOT WEIGH MORE THAN ONE POUND AND DO NOT CONSIST OF MORE THAN 16 FLUID OUNCES) SHALL COMPLY WITH STATEWIDE VOC STANDARDS AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS, OF *CALIFORNIA CODE OF REGULATIONS*, TITLE 17, COMMENCING WITH SECTION 94507.

CITY OF SAN LUIS OBISPO

PROJECT TITLE: **MISSION PLAZA ENHANCEMENTS**

SHEET TITLE: CAL GREEN REQUIREMENTS

LICENSED ARCHITECT KATHRYN ANNE HICKS C-38079 02 - 28 - 2025 RENEWAL DATE STATE OF CALIFORNIA

DESIGNED BY: DAVID GIBBS
DRAWN BY: DAVID GIBBS
CHECKED BY: KATHRYN HICKS
APPROVED BY: KATHRYN HICKS
SCALE:
DATE: 05.14.2024
CITY SPECIFICATION NO.
PLAN FILE NO. / LOCATION
SHEET NO. G-106

10/21/2022 2:29:24 PM

2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

NONRESIDENTIAL MANDATORY MEASURES, SHEET 3 (JANUARY 2020, INCLUDES JULY 2021 SUPPLEMENT)

TABLE 5.504.4.1 - ADHESIVE VOC LIMIT[1,2]
(LESS WATER AND LESS EXEMPT COMPOUNDS IN GRAMS PER LITER)

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVES	100
RUBBER FLOORING ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT AND ASPHALT TILE ADHESIVES	50
DRYWALL AND PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVES	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT SPECIFICALLY LISTED	50
SPECIALTY APPLICATIONS	
PVC WELDING	510
CPVC WELDING	490
ABD WELDING	325
PLASTIC CEMENT WELDING	250
ADHESIVE PRIMER FOR PLASTIC	550
CONTACT ADHESIVE	80
SPECIAL PURPOSE CONTACT ADHESIVE	250
STRUCTURAL WOOD MEMBER ADHESIVE	140
TOP AND TRIM ADHESIVES	250
SUBSTRATE SPECIFIC APPLICATIONS	
METAL TO METAL	30
PLASTIC FOAMS	50
POROUS MATERIAL (EXCEPT WOOD)	50
WOOD	30
FIBERGLASS	80

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER, THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.
2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168. WWW.ARB.CA.GOV/DRDB/SC/CURHTML/R1168.PDF

TABLE 5.504.4.2 - SEALANT VOC LIMIT
(LESS WATER AND LESS EXEMPT COMPOUNDS IN GRAMS PER LITER)

SEALANTS	CURRENT VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NONPOROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

NOTE: FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THESE TABLES, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

5.504.4.3 PAINTS AND COATINGS
ARCHITECTURAL PAINTS AND COATINGS SHALL COMPLY WITH VOC LIMITS IN TABLE 1 OF THE ARB ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, AS SHOWN IN ***TABLE 5.504.4.3***, UNLESS MORE STRINGENT LOCAL LIMITS APPLY. THE VOC CONTENT LIMIT FOR COATINGS THAT DO NOT MEET THE DEFINITIONS FOR THE SPECIALTY COATINGS CATEGORIES LISTED IN ***TABLE 5.504.4.3*** SHALL BE DETERMINED BY CLASSIFYING THE COATING AS A FLAT, NONFLAT OR NONFLAT-HIGH GLOSS COATING, BASED ON ITS GLOSS, AS DEFINED IN SUBSECTIONS 4.21, 4.36 AND 4.37 OF THE 2007 CALIFORNIA AIR RESOURCES BOARD SUGGESTED CONTROL MEASURE, AND THE CORRESPONDING FLAT, NONFLAT OR NONFLAT-HIGH GLOSS VOC LIMIT IN ***TABLE 5.504.4.3*** SHALL APPLY.

5.504.4.3.1 AEROSOL PAINTS AND COATINGS

AEROSOL PAINTS AND COATINGS SHALL MEET THE PWMIR LIMITS FOR ROC IN SECTION 94522(A)(3) AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS AND OZONE DEPLETING SUBSTANCES, IN SECTIONS 94522(C)(2) AND (D)(2) OF *CALIFORNIA CODE OF REGULATIONS*, TITLE 17, COMMENCING WITH SECTION 94520; AND IN AREAS UNDER THE JURISDICTION OF THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT ADDITIONALLY COMPLY WITH THE PERCENT VOC BY WEIGHT OF PRODUCT LIMITS OF REGULATION 8 RULE 49.

TABLE 5.504.4.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2, 3]
(GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS)

COATING CATEGORY	CURRENT VOC LIMIT
FLAT COATINGS	50
NONFLAT COATINGS	100
NONFLAT-HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH TEMPERATURE COATINGS	420
IDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS[1]	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, AND UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS AND UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB AND TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER AND INCLUDING EXEMPT COMPOUNDS.
2. THE SPECIFIED LIMITS REMAIN IN EFFECT ENLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE
3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEBUARY 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

5.504.4.3.2 VERIFICATION
VERIFICATION OF COMPLIANCE WITH THIS SECTION SHALL BE PROVIDED AT THE REQUEST OF THE ENFORCING AGENCY. DOCUMENTATION MAY INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:

1. MANUFACTURER'S PRODUCT SPECIFICATION
2. FIELD VERIFICATION OF ON-SITE PRODUCT CONTAINERS

5.504.4.4 CARPET SYSTEMS
ALL CARPET INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS FO THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.2, JUANUARY 2017 (EMISSION TESTING METHOD FOR CALIFORNIA SPECIFICATION 01350). SEE CALIFORNIA DEPARTMENT OF PULIC HEALTH'S WEBSITE FOR CERTIFICATION PROGRAMS AND TESTING LABS. HTTPS://WWW.CDPH.CA.GOV/PROGRAMS/CCDPHP/DEODC/EHLB/IAQ/PAGES/VOC.ASPX#MATERIAL

5.504.4.4.1 CARPET CUSHION
ALL CARPET CUSHION INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.2, JUANUARY 2017 (EMISSION TESTING METHOD FOR CALIFORNIA SPECIFICATION 01350). SEE CALIFORNIA DEPARTMENT OF PULIC HEALTH'S WEBSITE FOR CERTIFICATION PROGRAMS AND TESTING LABS. HTTPS://WWW.CDPH.CA.GOV/PROGRAMS/CCDPHP/DEODC/EHLB/IAQ/PAGES/VOC.ASPX#MATERIAL

5.504.4.4.2 CARPET ADHESIVE
ALL CARPET ADHESIVE SHALL MEET THE REQUIREMENTS OF ***TABLE 5.504.4.1***.

5.504.4.5 COMPOSITE WOOD PRODUCTS
HARDWOOD PLYWOOD, PARTICLEBOARD AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED ON THE INTERIOR OR EXTERIOR OF THE BUILDING SHALL MEET THE REQUIREMENTS FOR FORMALDEHYDE AS SPECIFIED IN ARB'S AIR TOXICS CONTROL MEASURE (ATCM) FOR COMPOSITE WOOD (17 CCR 93120 ET SEQ.) THOSE MATERIALS NOT EXEMPTED UNDER THE ATCM MUST MEET THE SPECIFIED EMISSION LIMITS, AS SHOWN IN ***TABLE 5.504.4.5***.

5.504.4.5.3 DOCUMENTATION
VERIFICATION OF COMPLIANCE WITH THIS SECTION SHALL BE PROVIDED AS REQUESTED BY THE ENFORCING AGENCY. DOCUMENTATION SHALL INCLUDE AT LEAST ONE OF THE FOLLOWING:

1. PRODUCT CERTIFICATIONS AND SPECIFICATIONS.
2. CHAIN OF CUSTODY CERTIFICATIONS.
3. PRODUCT LABELED AND INVOICED AS MEETING THE COMPOSITE WOOD PRODUCTS REGULATION (SEE CCR, TITLE 17, SECTION 93120, *ET SEQ.*).
4. EXTERIOR GRADE PRODUCTS MARKED AS MEETING THE PS-1 OR PS-2 STANDARDS OF THE ENGINEERED WOOD ASSOCIATION, THE AUSTRALIAN AS/NZS 2269 OR EUROPEAN 636 3S STANDARDS.
5. OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY.

5.504.4.6 RESILIENT FLOOR SYSTEMS
WHERE RESILIENT FLOORING IS INSTALLED, AT LEAST 80% OF FLOOR AREA RECEIVING RESILIENT FLOORING SHALL MEET THE REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, "STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS," VERSION 1.2, JUANUARY 2017 (EMISSION TESTING METHOD FOR CALIFORNIA SPECIFICATION 01350). SEE CALIFORNIA DEPARTMENT OF PULIC HEALTH'S WEBSITE FOR CERTIFICATION PROGRAMS AND TESTING LABS. HTTPS://WWW.CDPH.CA.GOV/PROGRAMS/CCDPHP/DEODC/EHLB/IAQ/PAGES/VOC.ASPX#MATERIAL

TABLE 5.504.4.5 - FORMALDEHYDE LIMITS[1]
(MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION)

PRODUCT	CURRENT LIMIT
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLEBOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E1333. FOR ADDITIONAL INFORMATION, SEE CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.
2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16 INCH (8MM).

5.504.4.6 RESILIENT FLOORING SYSTEMS
FOR 80 PERCENT OF FLOOR AREA RECEIVING RESILIENT FLOORING, INSTALLED RESILIENT FLOORING SHALL MEET AT LEAST ONE OF THE FOLLOWING:

1. CERTIFIED UNDER THE RESILIENT FLOOR COVERING INSTITUTE (RFCI) FLOORSCORE PROGRAM;
2. COMPLIANT WITH THE VOC-EMISSION LIMITS AND TESTING REQUIREMENTS SPECIFIED IN THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH'S 2010 STANDARD METHOD FOR THE TESTING AND EVALUATION CHAMBERS, VERSION 1.1, FEBRUARY 2010;
3. COMPLIANT WITH THE COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS CALIFORNIA (CA-CHPS) CRITERIA INTERPRETATION FOR EQ 7.0 AND EQ 7.1 (FORMERLY EQ 2.2) DATED JULY 2012 AND LISTED IN THE CHPS HIGH PERFORMANCE PRODUCT DATABASE; OR
4. PRODUCTS CERTIFIED UNDER UL GREENGUARD GOLD (FORMERLY THE GREENGUARD CHILDREN'S & SCHOOLS PROGRAM).

5.504.4.6.1 VERIFICATION OF COMPLIANCE
DOCUMENTATION SHALL BE PROVIDED VERIFYING THAT RESILIENT FLOORING MATERIALS MEET THE POLLUTANT EMISSION LIMITS.

5.504.5.3 FILTERS
IN MECHANICALLY VENTILATED BUILDINGS, PROVIDE REGULARLY OCCUPIED AREAS OF THE BUILDING WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8. MERV 8 FILTERS SHALL BE INSTALLED PRIOR TO OCCUPANCY, AND RECOMMENDATIONS FOR MAINTENANCE WITH FILTERS OF THE SAME VALUE SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL.

EXCEPTION: EXISTING MECHANICAL EQUIPMENT.

5.504.5.3.1 LABELING
INSTALLED FILTERS SHALL BE CLEARLY LABELED BY THE MANUFACTURER INDICATING THE MERV RATING.

5.504.7 ENVIRONMENTAL TOBACCO SMOKE (ETS) CONTROL
WHERE OUTDOOR AREAS ARE PROVIDED FOR SMOKING, PROHIBIT SMOKING WITHIN 25 FEET OF BUILDING ENTRIES, OUTDOOR AIR INTAKES AND OPERABLE WINDOWS AND WITHIN THE BUILDING AS ALREADY PROHIBITED BY OTHER LAWS OR REGULATIONS; OR AS ENFORCED BY ORDINANCES, REGULATIONS OR POLICIES OF ANY CITY, COUNTY, CITY AND COUNTY, CALIFORNIA COMMUNITY COLLEGE, CAMPUS OF THE CALIFORNIA STATE UNIVERSITY, OR CAMPUS OF THE UNIVERSITY OF CALIFORNIA, WHICHEVER ARE MORE STRINGENT. WHEN ORDINANCES, REGULATIONS OR POLICIES ARE NOT IN PLACE, POST SIGNAGE TO INFORM BUILDING OCCUPANTS OF THE PROHIBITIONS.

5.505 INDOOR MOISTURE CONTROL

5.505.1 INDOOR MOISTURE CONTROL
BUILDINGS SHALL MEET OR EXCEED THE PROVISIONS OF *CALIFORNIA BUILDING CODE*, CCR, TITLE 24, PART 2, SECTIONS 1202 (VENTILATION) AND CHAPTER 14 (EXTERIOR WALLS). FOR ADDITIONAL MEASURES, SEE ***SECTION 5.407.2*** OF THIS CODE.

5.506 INDOOR AIR QUALITY

5.506.1 OUTSIDE AIR DELIVERY
FOR MECHANICALLY OR NATURALLY VENTILATED SPACES IN BUILDINGS, MEET THE MINIMUM REQUIREMENTS OF ***SECTION 120.1*** (REQUIREMENTS FOR VENTILATION) OF THE *CALIFORNIA ENERGY CODE*, OR THE APPLICABLE LOCAL CODE, WHICHEVER IS MORE STRINGENT, AND DIVISION 1, CHAPTER 4 OF CCR, TITLE 8.

5.506.2 CARBON DIOXIDE (CO2) MONITORING
FOR BUILDINGS OR ADDITIONS EQUIPPED WITH DEMAND CONTROL VENTILATION, CO2 SENSORS AND VENTILATION CONTROLS SHALL BE SPECIFIED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE *CALIFORNIA ENERGY CODE*, SECTION 120(C)(4).

5.507 ENVIRONMENTAL COMFORT

5.507.4 ACOUSTICAL CONTROL
EMPLOY BUILDING ASSEMBLIES AND COMPONENTS WITH SOUND TRANSMISSION CLASS (STC) VALUES DETERMINED IN ACCORDANCE WITH ASTM E90 AND ASTM E413 OR OUTDOOR-INDOOR SOUND TRANSMISSION CLASS (OITC) DETERMINED IN ACCORDANCE WITH ASTM E1332, USING EITHER THE PRESCRIPTIVE OR PERFORMANCE METHOD IN ***SECTION 5.507.4.1*** OR ***5.507.4.2***.

EXCEPTION: BUILDINGS WITH FEW OR NO OCCUPANTS OR WHERE OCCUPANTS ARE NOT LIKELY TO BE AFFECTED BY EXTERIOR NOISE, AS DETERMINED BY THE ENFORCEMENT AUTHORITY, SUCH AS FACTORIES, STADIUMS, STORAGE, ENCLOSED PARKING STRUCTURES AND UTILITY BUILDINGS.

EXCEPTION: [DSA-SS] FOR PUBLIC SCHOOLS AND COMMUNITY COLLEGES, THE REQUIREMENTS OF THIS SECTION AND ALL SUBSECTIONS APPLY ONLY TO NEW CONSTRUCTION.

5.507.4.1 EXTERIOR NOISE TRANSMISSION, PRESCRIPTIVE METHOD
WALL AND ROOF-CEILING ASSEMBLIES EXPOSED TO THE NOISE SOURCE MAKING UP THE BUILDING OR ADDITION ENVELOPE OR ALTERED ENVELOPE SHALL MEET A COMPOSITE STC RATING OF AT LEAST 50 OR A COMPOSITE OITC RATING OF NO LESS THAN 40, WITH EXTERIOR WINDOWS OF A MINIMUM STC OF 40 OR OITC OF 30 IN THE FOLLOWING LOCATIONS:

1. WITHIN THE 65 CNEL NOISE CONTOUR OF AN AIRPORT.

   EXCEPTIONS:
   1. L_{DN} OR CNEL FOR MILITARY AIRPORTS SHALL BE DETERMINED BY THE FACILITY AIR INSTALLATION COMPATIBLE LAND USE ZONE (AICUZ) PLAN.
   2. L_{DN} OR CNEL FOR OTHER AIRPORTS AND HELIPORTS FOR WHICH A LAND USE PLAN HAS NOT BEEN DEVELOPED SHALL BE DETERMINED BY THE LOCAL GENERAL PLAN NOISE ELEMENT.
2. WITHIN THE 65 CNEL OR L_{DN} NOISE CONTOUR OF A FREEWAY OR EXPRESSWAY, RAILROAD, INDUSTRIAL SOURCE OR FIXED-GUIDEWAY SOURCE AS DETERMINED BY THE NOISE ELEMENT OF THE GENERAL PLAN.

5.507.4.1.1 NOISE EXPOSURE WHERE NOISE CONTOURS ARE NOT READILY AVAILABLE
BUILDINGS EXPOSED TO A NOISE LEVEL OF 65 DB L_{EQ}-1-HR DURING ANY HOUR OF OPERATION SHALL HAVE BUILDING, ADDITION OR ALTERATION EXTERIOR WALL AND ROOF-CEILING ASSEMBLIES EXPOSED TO THE NOISE SOURCE MEETING A COMPOSITE STC RATING OF AT LEAST 45 (OR OITC 35), WITH EXTERIOR WINDOWS OF A MINIMUM STC OF 40 (OR OITC 30).

5.507.4.2 PERFORMANCE METHOD
FOR BUILDINGS LOCATED AS DEFINED IN ***SECTION 5.507.4.1*** OR ***5.507.4.1.1***, WALL AND ROOF-CEILING ASSEMBLIES EXPOSED TO THE NOISE SOURCE MAKING UP THE BUILDING OR ADDITION ENVELOPE OR ALTERED ENVELOPE SHALL BE CONSTRUCTED TO PROVIDE AN INTERIOR NOISE ENVIRONMENT ATTRIBUTABLE TO EXTERIOR SOURCES THAT DOES NOT EXCEED AN HOURLY EQUIVALENT NOISE LEVEL (L_{EQ}-1HR) OF 50 DBA IN OCCUPIED AREAS DURING ANY HOUR OF OPERATION.

5.507.4.2.1 SITE FEATURES
EXTERIOR FEATURES SUCH AS SOUND WALLS OR EARTH BERMS MAY BE UTILIZED AS APPROPRIATE TO THE BUILDING, ADDITION OR ALTERATION PROJECT TO MITIGATE SOUND MIGRATION TO THE INTERIOR.

5.507.4.2.2 DOCUMENTATION OF COMPLIANCE
AN ACOUSTICAL ANALYSIS DOCUMENTING COMPLYING INTERIOR SOUND LEVELS SHALL BE PREPARED BY PERSONNEL APPROVED BY THE ARCHITECT OR ENGINEER OF RECORD.

5.507.4.3 INTERIOR SOUND TRANSMISSION
WALL AND FLOOR-CEILING ASSEMBLIES SEPARATING TENANT SPACES AND TENANT SPACES AND PUBLIC PLACES SHALL HAVE AN STC OF AT LEAST 40.

NOTE: EXAMPLES OF ASSEMBLIES AND THEIR VARIOUS STC RATINGS MAY BE FOUND AT THE CALIFORNIA OFFICE OF NOISE CONTROL: www.toolbase.org/PDF/CaseStudies/stc_icc_ratings.pdf.

5.508 OUTDOOR AIR QUALITY

5.508.1 OZONE DEPLETION AND GREENHOUSE GAS REDUCTIONS
INSTALLATIONS OF HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT SHALL COMPLY WITH ***SECTIONS 5.508.1.1*** AND ***5.508.1.2***.

5.508.1.1 CHLOROFLUOROCARBONS (CFCS)
INSTALL HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN CFCS.

5.508.1.2 HALONS
INSTALL HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN HALONS.

5.508.2 SUPERMARKET REFRIGERANT LEAK REDUCTION
NEW COMMERCIAL REFRIGERATION SYSTEMS SHALL COMPLY WITH THE PROVISIONS OF THIS SECTION WHEN INSTALLED IN RETAIL FOOD STORES 8,000 SQUARE FEET OR MORE CONDITIONED AREA, AND THAT UTILIZE EITHER REFRIGERATED DISPLAY CASES, OR WALK-IN COOLERS OR FREEZERS CONNECTED TO REMOTE COMPRESSOR UNITS OR CONDENSING UNITS. THE LEAK REDUCTION MEASURES APPLY TO REFRIGERATION SYSTEMS CONTAINING HIGH-GLOBAL-WARMING POTENTIAL (HIGH-GWP) REFRIGERANTS WITH A GWP OF 150 OR GREATER. NEW REFRIGERATION SYSTEMS INCLUDE BOTH NEW FACILITIES AND THE REPLACEMENT OF EXISTING REFRIGERATION SYSTEMS IN EXISTING FACILITIES.

EXCEPTION: REFRIGERATION SYSTEMS CONTAINING LOW-GLOBAL WARMING POTENTIAL (LOW-GWP) REFRIGERANT WITH A GWP VALUE LESS THAN 150 ARE NOT SUBJECT TO THIS SECTION. LOW-GWP REFRIGERANTS ARE NONOZONE-DEPLETING REFRIGERANTS THAT INCLUDE AMMONIA, CARBON DIOXIDE (CO_2), AND POTENTIALLY OTHER REFRIGERANTS.

5.508.2.1 REFRIGERANT PIPING
PIPING COMPLIANT WITH THE *CALIFORNIA MECHANICAL CODE* SHALL BE INSTALLED TO BE ACCESSIBLE FOR LEAK PROTECTION AND REPAIRS. PIPING RUNS USING THREADED PIPE, COPPER TUBING WITH AN OUTSIDE DIAMETER (OD) LESS THAN 1/4 INCH, FLARED TUBING CONNECTIONS AND SHORT RADIUS ELBOWS SHALL NOT BE USED IN REFRIGERANT SYSTEMS EXCEPT AS NOTED BELOW.

5.508.2.1.1 THREADED PIPE
THREADED CONNECTIONS ARE PERMITTED AT THE COMPRESSOR RACK.

5.508.2.1.2 COPPER PIPE
COPPER TUBING WITH AN OD LESS THAN 1/4 INCH MAY BE USED IN SYSTEMS WITH A REFRIGERANT CHARGE OF 5 POUNDS OR LESS.

5.508.2.1.2.1 ANCHORAGE
ONE-FOURTH-INCH OD TUBING SHALL BE SECURELY CLAMPED TO A RIGID BASE TO KEEP VIBRATION LEVELS BELOW 8 MILS.

5.508.2.1.3 FLARED TUBING CONNECTIONS
DOUBLE-FLARED TUBING CONNECTIONS MAY BE USED FOR PRESSURE CONTROLS, VALVE PILOT LINES AND OIL.

EXCEPTION: SINGLE-FLARED TUBING CONNECTIONS MAY BE USED WITH A MULTIRING SEAL COATED WITH INDUSTRIAL SEALANT SUITABLE FOR USE WITH REFRIGERANTS AND TIGHTENED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

5.508.2.1.4 ELBOWS
SHORT RADIUS ELBOWS ARE ONLY PERMITTED WHERE SPACE LIMITATIONS PROHIBIT USE OF LONG RADIUS ELBOWS.

5.508.2.2 VALVES
VALVES AND FITTINGS SHALL COMPLY WITH THE *CALIFORNIA MECHANICAL CODE* AND AS FOLLOWS.

5.508.2.2.1 PRESSURE RELIEF VALVES
FOR VESSELS CONTAINING HIGH-GWP REFRIGERANT, A RUPTURE DISC SHALL BE INSTALLED BETWEEN THE OUTLET OF THE VESSEL AND THE INLET OF THE PRESSURE RELIEF VALVE.

5.508.2.2.1.1 PRESSURE DETECTION
A PRESSURE GAUGE, PRESSURE TRANSDUCER OR OTHER DEVICE SHALL BE INSTALLED IN THE SPACE BETWEEN THE RUPTURE DISC AND THE RELIEF VALVE INLET TO INDICATE A DISC RUPTURE OR DISCHARGE OF THE RELIEF VALVE.

5.508.2.2.2 ACCESS VALVES
ONLY SCHRADER ACCESS VALVES WITH A BRASS OR STEEL BODY ARE PERMITTED FOR USE.

5.508.2.2.2.1 VALVE CAPS
FOR SYSTEMS WITH A REFRIGERANT CHARGE OF 5 POUNDS OR MORE, VALVE CAPS SHALL BE BRASS OR STEEL AND NOT PLASTIC.

5.508.2.2.2.2 SEAL CAPS
IF DESIGNED FOR IT, THE CAP SHALL HAVE A NEOPRENE O-RING IN PLACE.

5.508.2.2.2.2.1 CHAIN TETHERS
CHAIN TETHERS TO FIT OVER THE STEM ARE REQUIRED FOR VALVES DESIGNED TO HAVE SEAL CAPS.

EXCEPTION: VALVES WITH SEAL CAPS THAT ARE NOT REMOVED FROM THE VALVE DURING STEM OPERATION.

5.508.2.3 REFRIGERATED SERVICE CASES
REFRIGERATED SERVICE CASES HOLDING FOOD PRODUCTS CONTAINING VINEGAR AND SALT SHALL HAVE EVAPORATOR COILS OF CORROSION-RESISTANT MATERIAL, SUCH AS STAINLESS STEEL; OR BE COATED TO PREVENT CORROSION FROM THESE SUBSTANCES.

5.508.2.3.1 COIL COATING
CONSIDERATION SHALL BE GIVEN TO THE HEAT TRANSFER EFFICIENCY OF COIL COATING TO MAXIMIZE ENERGY EFFICIENCY.

5.508.2.4 REFRIGERANT RECEIVERS
REFRIGERANT RECEIVERS WITH CAPACITIES GREATER THAN 200 POUNDS SHALL BE FITTED WITH A DEVICE THAT INDICATES THE LEVEL OF REFRIGERANT IN THE RECEIVER.

5.508.2.5 PRESSURE TESTING
THE SYSTEM SHALL BE PRESSURE TESTED DURING INSTALLATION PRIOR TO EVACUATION AND CHARGING.

5.508.2.5.1 MINIMUM PRESSURE
THE SYSTEM SHALL BE CHARGED WITH REGULATED DRY NITROGEN AND APPROPRIATE TRACER GAS TO BRING SYSTEM PRESSURE UP TO 300 PSIG MINIMUM.

5.508.2.5.2 LEAKS
CHECK THE SYSTEM FOR LEAKS, REPAIR ANY LEAKS, AND RETEST FOR PRESSURE USING THE SAME GAUGE.

5.508.2.5.3 ALLOWABLE PRESSURE CHANGE
THE SYSTEM SHALL STAND, UNALTERED, FOR 24 HOURS WITH NO MORE THAN A +/- ONE POUND PRESSURE CHANGE FROM 300 PSIG, MEASURED WITH THE SAME GAUGE.

5.508.2.6 EVACUATION
THE SYSTEM SHALL BE EVACUATED AFTER PRESSURE TESTING AND PRIOR TO CHARGING.

5.508.2.6.1 FIRST VACUUM
PULL A SYSTEM VACUUM DOWN TO AT LEAST 1000 MICRONS (+/- 50 MICRONS), AND HOLD FOR 30 MINUTES.

5.508.2.6.2 SECOND VACUUM
PULL A SECOND SYSTEM VACUUM TO A MINIMUM OF 500 MICRONS AND HOLD FOR 30 MINUTES.

5.508.2.6.3 THIRD VACUUM
PULL A THIRD VACUUM DOWN TO A MINIMUM OF 300 MICRONS, AND HOLD FOR 24 HOURS WITH A MAXIMUM DRIFT OF 100 MICRONS OVER A 24-HOUR PERIOD.

CHAPTER 7 - INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

702 QUALIFICATIONS

702.1 INSTALLER TRAINING
HVAC SYSTEM INSTALLERS SHALL BE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS INCLUDING DUCTS AND EQUIPMENT BY A NATIONALLY OR REGIONALLY RECOGNIZED TRAINING OR CERTIFICATION PROGRAM. UNCERTIFIED PERSONS MAY PERFORM HVAC INSTALLATIONS WHEN UNDER THE DIRECT SUPERVISION AND RESPONSIBILITY OF A PERSON TRAINED AND CERTIFIED TO INSTALL HVAC SYSTEMS OR CONTRACTOR LICENSED TO INSTALL HVAC SYSTEMS. EXAMPLES OF ACCEPTABLE HVAC TRAINING AND CERTIFICATION PROGRAMS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

1. STATE CERTIFIED APPRENTICESHIP PROGRAMS.
2. PUBLIC UTILITY TRAINING PROGRAMS.
3. TRAINING PROGRAMS SPONSORED BY TRADE, LABOR OR STATEWIDE ENERGY CONSULTING OR VERIFICATION ORGANIZATIONS.
4. PROGRAMS SPONSORED BY MANUFACTURING ORGANIZATIONS.
5. OTHER PROGRAMS ACCEPTABLE TO THE ENFORCING AGENCY.

702.2 SPECIAL INSPECTION [HCD]
WHEN REQUIRED BY THE ENFORCING AGENCY, THE OWNER OR THE RESPONSIBLE ENTITY ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTION OR OTHER DUTIES NECESSARY TO SUBSTANTIATE COMPLIANCE WITH THIS CODE. SPECIAL INSPECTORS SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE ENFORCING AGENCY FOR THE PARTICULAR TYPE OF INSPECTION OR TASK TO BE PERFORMED. IN ADDITION TO OTHER CERTIFICATIONS OR QUALIFICATIONS ACCEPTABLE TO THE ENFORCING AGENCY, THE FOLLOWING CERTIFICATIONS OR EDUCATION MAY BE CONSIDERED BY THE ENFORCING AGENCY WHEN EVALUATING THE QUALIFICATIONS OF A SPECIAL INSPECTOR:

1. CERTIFICATION BY A NATIONAL OR REGIONAL GREEN BUILDING PROGRAM OR STANDARD PUBLISHER.
2. CERTIFICATION BY A STATEWIDE ENERGY CONSULTING OR VERIFICATION ORGANIZATION, SUCH AS HERS RATERS, BUILDING PERFORMANCE CONTRACTORS, AND HOME ENERGY AUDITORS.
3. SUCCESSFUL COMPLETION OF A THIRD PARTY APPRENTICE TRAINING PROGRAM IN THE APPROPRIATE TRADE.
4. OTHER PROGRAMS ACCEPTABLE TO THE ENFORCING AGENCY.

NOTES:
1. SPECIAL INSPECTORS SHALL BE INDEPENDENT ENTITIES WITH NO FINANCIAL INTEREST IN THE MATERIALS OR THE PROJECT THEY ARE INSPECTING FOR COMPLIANCE WITH THIS CODE.
2. HERS RATERS ARE SPECIAL INSPECTORS CERTIFIED BY THE CALIFORNIA ENERGY COMMISSION (CEC) TO RATE HOMES IN CALIFORNIA ACCORDING TO THE HOME ENERGY RATING SYSTEM (HERS).

[BSC-CG] WHEN REQUIRED BY THE ENFORCING AGENCY, THE OWNER OR THE RESPONSIBLE ENTITY ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTION OR OTHER DUTIES NECESSARY TO SUBSTANTIATE COMPLIANCE WITH THIS CODE. SPECIAL INSPECTORS SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE ENFORCING AGENCY FOR THE PARTICULAR TYPE OF INSPECTION OR TASK TO BE PERFORMED. IN ADDITION, THE SPECIAL INSPECTOR SHALL HAVE A CERTIFICATION FROM A RECOGNIZED STATE, NATIONAL OR INTERNATIONAL ASSOCIATION, AS DETERMINED BY THE LOCAL AGENCY. THE AREA OF CERTIFICATION SHALL BE CLOSELY RELATED TO THE PRIMARY JOB FUNCTION, AS DETERMINED BY THE LOCAL AGENCY.

NOTE:
SPECIAL INSPECTORS SHALL BE INDEPENDENT ENTITIES WITH NO FINANCIAL INTEREST IN THE MATERIALS OR THE PROJECT THEY ARE INSPECTING FOR COMPLIANCE WITH THIS CODE.

703 VERIFICATIONS

703.1 DOCUMENTATION.
DOCUMENTATION USED TO SHOW COMPLIANCE WITH THIS CODE SHALL INCLUDE BUT IS NOT LIMITED TO, CONSTRUCTION DOCUMENTS, PLANS, SPECIFICATIONS, BUILDER OR INSTALLER CERTIFICATION, INSPECTION REPORTS, OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY WHICH DEMONSTRATE SUBSTANTIAL CONFORMANCE. WHEN SPECIFIC DOCUMENTATION OR SPECIAL INSPECTION IS NECESSARY TO VERIFY COMPLIANCE, THAT METHOD OF COMPLIANCE WILL BE SPECIFIED IN THE APPROPRIATE SECTION OR IDENTIFIED APPLICABLE CHECKLIST.

CITY OF SAN LUIS OBISPO

PROJECT TITLE: **MISSION PLAZA ENHANCEMENTS**

SHEET TITLE: CAL GREEN REQUIREMENTS

LICENSED ARCHITECT
KATHRYN ANNE HICKS
C-38079
02 - 28 - 2025
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY: DAVID GIBBS
DRAWN BY: DAVID GIBBS
CHECKED BY: KATHRYN HICKS
APPROVED BY: KATHRYN HICKS
SCALE:
DATE: 05.14.2024
CITY SPECIFICATION NO.
PLAN FILE NO. / LOCATION
SHEET NO. G-107

10/21/2022 2:29:24 PM

ACCESSIBILITY NOTES

REFER TO DETAIL 12/G-103 FOR ACC. LAVATORY REQUIREMENTS

REFER TO DETAIL 13/G-103FOR ACC. RESTROOM ACCESSORIES

REFER TO DETAIL 12/G-104 FOR ACC. TOILET REQUIREMENTS

REFER TO DETAIL 21/G-103 FOR KICK PLATE REQUIREMENTS

REFER TO DETAIL 23/G-103 FOR ACC. RESTROOM SYMBOL REQUIREMENTS

REFER TO DETAIL 33/G-103 FOR ACC. REACH RANGES

REFER TO DETAIL 13/G-104 FOR ACC. TURNING SPACE REQUIREMENTS

REFER TO DETAIL 41/G-103 FOR ACC. DOOR REQUIREMENTS

REFER TO DETAIL 23/G-104 FOR ACC. DOOR/ENTRY CLEARANCES

REFER TO DETAIL 43/G-103 FOR TOE/KNEE CLEARANCES

REFER TO DETAIL 23/23/G-104 FOR CLEARANCES AT DOORS & GATES

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
3. REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION.
4. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
5. ALL FURNITURE AND EQUIPMENT IS BY OWNER AND IS SHOWN FOR COORDINATION PURPOSES ONLY.
6. REFER TO FINISH PLAN AND SCHEDULE FOR INTERIOR WALL, CEILING AND FLOOR FINISH INFORMATION.
7. DIMENSIONS ARE TO FACE OF SHEATHING OR CMU UNLESS SPECIFICALLY NOTED OTHERWISE.
8. PROVIDE ADEQUATE BLOCKING IN WALLS FOR CABINETS AND OTHER WALL MOUNTED ACCESSORIES INCLUDING BUT NOT LIMITED TO HANDRAILS, SHELVING AND BATHROOM FIXTURES.
9. PROVIDE FIRE BLOCKING FOR WALL CAVITIES THAT EXCEED CBC HEIGHT LIMITATION.
10. FLOOR TO SLOPE TO DRAIN AT 1/4" :1" MAX. SLOPE

KEYNOTES

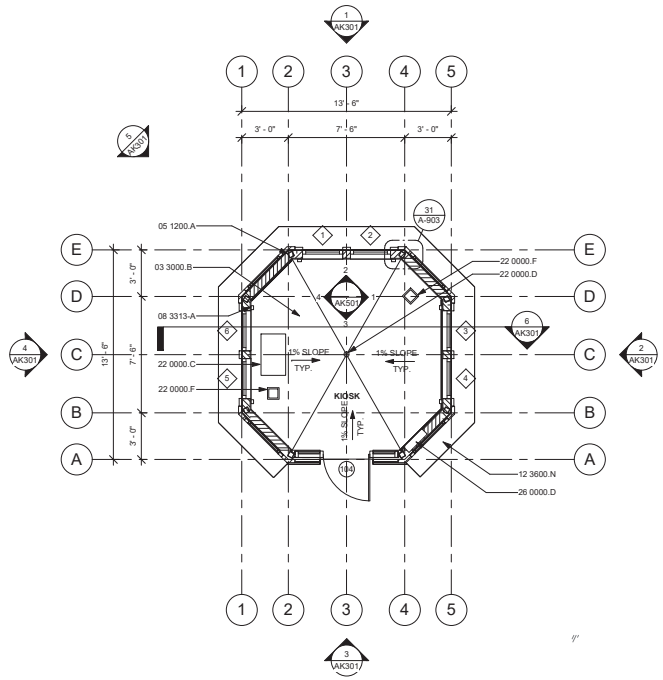
03 3000.B	CONCRETE SLAB, REFER TO STRUCTURAL
05 1200.A	STEEL COLUMN. REFER TO STRUCTURAL DRAWINGS
08 3313-A	COILING COUNTER DOOR
12 3600.N	SHEETMETAL COUNTER
22 0000.C	GREASE INTERCEPTOR. REFER TO PLUMBING
22 0000.D	FLOOR DRAIN. MINIMUM 1/4":1' SLOPE. REFER TO PLUMBING
22 0000.F	FLOOR SINK. REFER TO PLUMBING
26 0000.D	ELECTRICAL PANEL. REFER TO ELECTRICAL

WALL LEGEND

INTERIOR- 7 5/8" C.M.U.

EXTERIOR- 7 5/8" C.M.U. W/ BRICK VENEER, METAL PANEL, OR, METAL PANLE OVER 4" METAL FURRING CHANNEL.

EXTERIOR- 6" METAL STUD, UNFINISHED INTERIOR. METAL PANEL OR BRICK VENEER EXTERIOR.

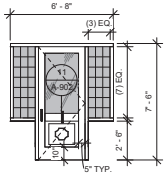


1 GROUND FLOOR PLAN - KIOSK
AR301 AK101 1/4" = 1'-0"

DOOR SCHEDULE

NO.	TYPE	SIZE WIDTH	SIZE HEIGHT	SIGNAGE	HARDWARE
104	C	3' - 0"	7' - 3 1/2"		3

DOOR TYPES



C. STOREFRONT DOOR

DOOR NOTES

1. VERIFY ROUGH OPENING SIZE WITH DOOR MANUFACTURER SPECIFICATIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO VERIFY ACTUAL DOOR SIZE TO FIT FINISH OPENING PRIOR TO FABRICATION OF DOOR AND FINISH OPENING.
3. ALL DOOR HARDWARE TO HAVE LEVER HANDLES AND COMPLY WITH DETAIL 41/G-103
4. SEE DOOR SCHEDULE FOR SIGN SCHEDULE. REFER TO DETAILS 23/G-103 FOR ROOM IDENTIFICATION SYMBOL LOCATION.
5. ALL THRESHOLDS SHALL COMPLY WITH DETAIL 42/G-103.
6. EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
7. THE BOTTOM 10" OF ALL DOORS SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.
8. ALL GLAZING WITHIN 24" OF DOOR JAMB TO BE TEMPERED PER CBC 2406.4.2

DOOR SIGNAGE

1. RESTROOM & ACCESSIBILITY SIGNAGE.
2. MAINTENANCE
3. WOMENS
4. MENS

DOOR HARDWARE

REFER TO SPECIFICATION 08 710O FOR DOOR HARDWARE GROUPS

WINDOW SCHEDULE

NO.	TYPE	SIZE WIDTH	SIZE HEIGHT	HEAD HEIGHT	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	NOTES
1	A	2' - 7"	4' - 2"	7' - 0"				
2	A	2' - 7"	4' - 2"	7' - 0"				
3	A	2' - 7"	4' - 2"	7' - 0"				
4	A	2' - 7"	4' - 2"	7' - 0"				
5	A	2' - 7"	4' - 2"	7' - 0"				
6	A	2' - 7"	4' - 2"	7' - 0"				

WINDOW TYPES

A.
FIXED

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

FLOOR PLAN & DOOR SCHEDULE

SHEET TITLE:

LICENSED ARCHITECT
Kathryn Hurd
C-38079
02-28-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1/4" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AK101

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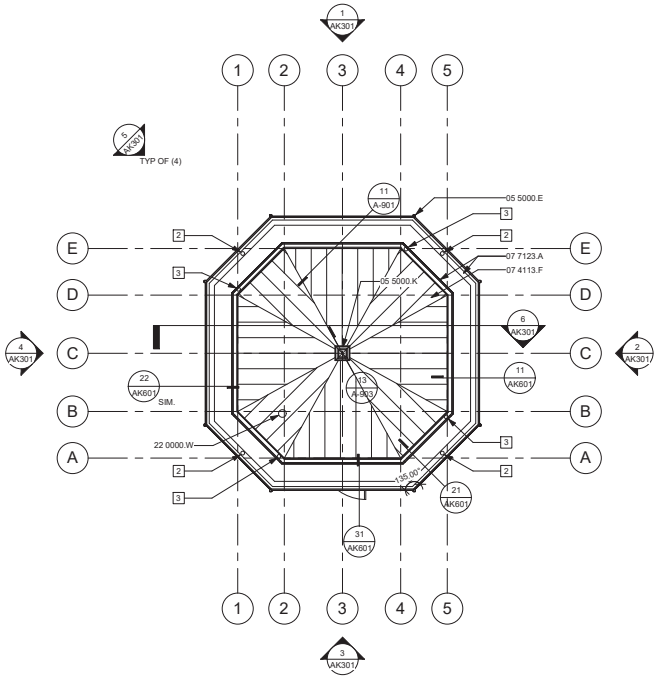

1 ROOF PLAN - KIOSK
AR301 AK102 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR ROOF FRAMING INFORMATION INCLUDING MEMBER SIZES AND CONNECTION HARDWARE.
2. REFER TO PLUMBING PLANS FOR ROOF VENT PENETRATION.

KEYNOTES

05 5000.E	CUSTOM OVERHANG METAL DETAIL
05 5000.K	CUSTOM METAL FINEAL
07 4113.F	STANDING SEAM METAL ROOF
07 7123.A	GUTTER
22 0000.W	STACK VENT. LOCATE ON SOUTH SLOPE OF ROOF. REFER TO PLUMBING

LEGEND

10'-0"	HEIGHT OF TOP OF ROOFING SURFACE (INCLUDING CRICKETS AND INSULATION)
1/2":1'-0"	ROOF SLOPE
	STANDING SEAM ROOF
1	IN WALL RAIN WATER LEADER SCHEDULE 40 PIPE TO BRASS COWS TOUNGE SCUPPER
2	THROUGH ROOF DOWNSPOUT EXTEND 1" BELOW SOFFIT
3	DOWNSPOUT TO ROOF BELOW

CITY OF SAN LUIS OBISPO

PROJECT TITLE:
MISSION PLAZA ENHANCEMENTS

SHEET TITLE:
ROOF PLAN

LICENSED ARCHITECT
Kathryn Hurd
C-38079
12-20-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	As indicated
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AK102

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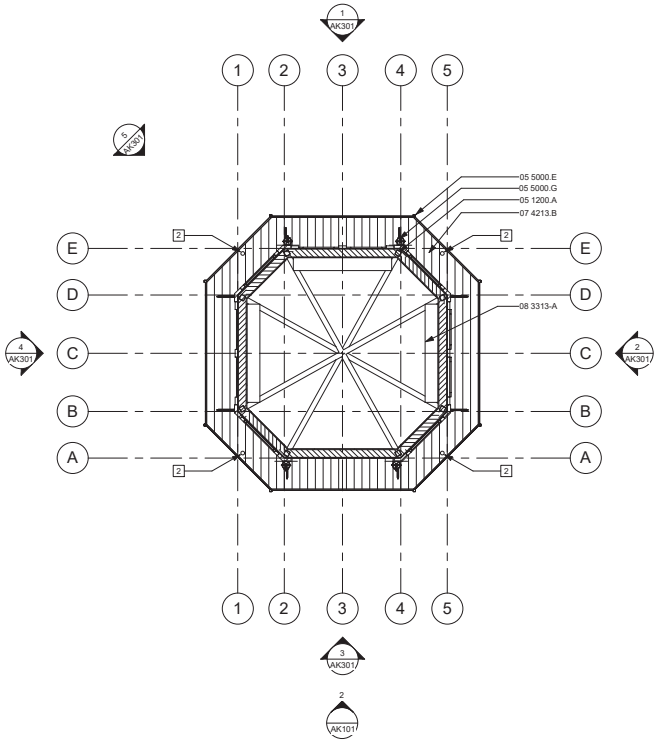

1 KIOSK REFLECTED CEILING PLAN

AR301 AK103 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
3. REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION.
4. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
5. REFER TO FINISH PLAN AND SCHEDULE FOR INTERIOR WALL, CEILING AND FLOOR FINISH INFORMATION
6. DIMENSIONS ARE TO FACE OF CORE UNLESS SPECIFICALLY NOTED OTHERWISE.
7.

KEYNOTES

05 1200.A	STEEL COLUMN. REFER TO STRUCTURAL DRAWINGS
05 5000.E	CUSTOM OVERHANG METAL DETAIL
05 5000.G	CUSTOM OVERHANG METAL SUPPORT BRACKET
07 4213.B	METAL WALL PANEL
08 3313-A	COILING COUNTER DOOR

LEGEND

10'-0"	CEILING HEIGHT
	LINEAR METAL SOFFIT
1	IN WALL DOWN SPOUT SCHEDULED PIPE TO COWS TOUNGE SCUPPER
2	THROUGH ROOF DOWNSPOUT EXTEND 1" BELOW SOFFIT
3	DOWNSPOUT TO ROOF BELOW

CITY OF SAN LUIS OBISPO

PROJECT TITLE:
MISSION PLAZA ENHANCEMENTS

SHEET TITLE:
REFLECTED CEILING PLAN

LICENSED ARCHITECT
C-38079
12 - 20 - 2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	As indicated
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AK103

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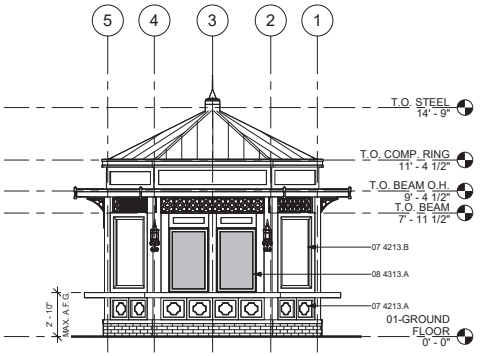
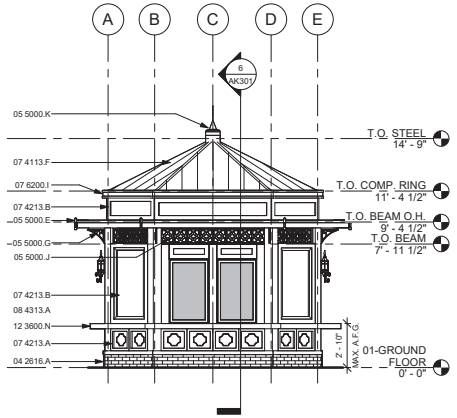
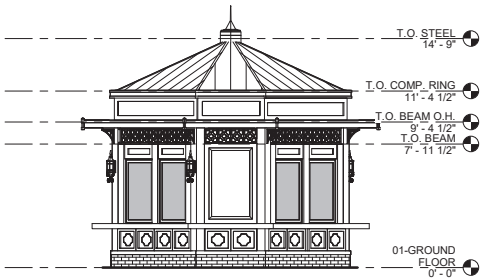


1 NORTH ELEVATION - KIOSK
AK101 AK301 1/4" = 1'-0"



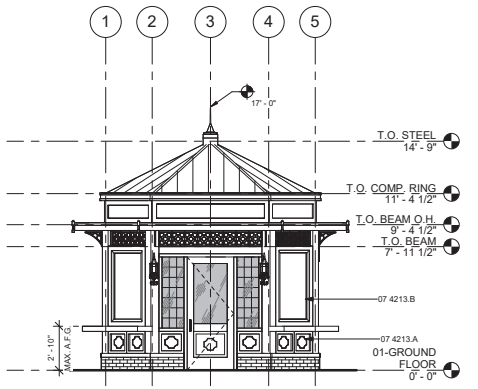
2 EAST ELEVATION - KIOSK
AK101 AK301 1/4" = 1'-0"



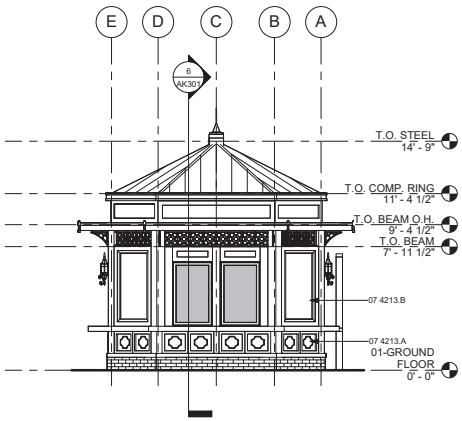
5 KIOSK SHORT SIDE, TYP. OF FOUR
AK101 AK301 1/4" = 1'-0"

GENERAL NOTES

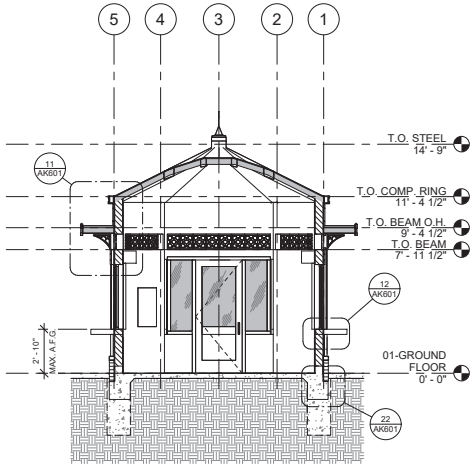
1. REFER TO STRUCTURAL PLANS FOR ROOF FRAMING INFORMATION INCLUDING MEMBER SIZES AND CONNECTION HARDWARE.
2. REFER TO PLUMBING PLANS FOR ROOF VENT PENETRATION.



3 SOUTH ELEVATION - KIOSK
AK101 AK301 1/4" = 1'-0"



4 WEST ELEVATION - KIOSK
AK101 AK301 1/4" = 1'-0"



6 BUILDING SECTION - KIOSK
AK101 AK301 1/4" = 1'-0"

KEYNOTES

04 2616.A	NEW BRICK VENEER AT FRAMED WALL
05 5000.E	CUSTOM OVERHANG METAL DETAIL
05 5000.G	CUSTOM OVERHANG METAL SUPPORT BRACKET
05 5000.J	CUSTOM METAL VENT SCREEN
05 5000.K	CUSTOM METAL FINEAL
07 4113.F	STANDING SEAM METAL ROOF
07 4213.A	METAL WALL PANEL W/ SURFACE APPLIED MEDALLION
07 4213.B	METAL WALL PANEL
07 6200.I	GUTTER
08 4313.A	ALUMINUM STOREFRONT SYSTEM - REFER TO SCHEDULES
12 3600.N	SHEETMETAL COUNTER

LEGEND

BRICK VENEER

STANDING SEAM METAL ROOF

METAL WALL PANELS

CITY OF SAN LUIS OBISPO

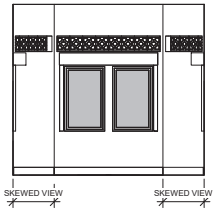
PROJECT TITLE:
MISSION PLAZA ENHANCEMENTS

SHEET TITLE:
EXTERIOR ELEVATIONS & SECTION

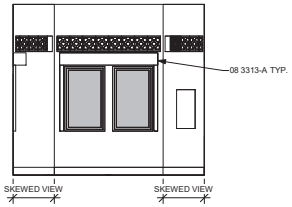
LICENSED ARCHITECT
C-38079
12-31-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1/4" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AK301

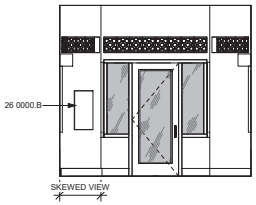
4/30/2024 10:03:52 AM



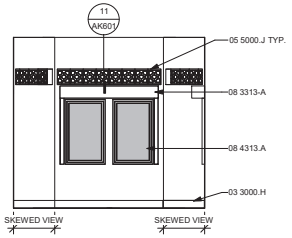
2 NORTH - KIOSK
AK101 AK501 1/4" = 1'-0"



1 EAST - KIOSK
AK101 AK501 1/4" = 1'-0"



3 SOUTH - KIOSK
AK101 AK501 1/4" = 1'-0"



4 WEST - KIOSK
AK101 AK501 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION ON ELECTRICAL EQUIPMENT, LIGHTING FIXTURES AND LOCATIONS OF ELECTRICAL OUTLETS
3. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
4. REFER TO FINISH PLAN AND SCHEDULE FOR INTERIOR WALL, CEILING, AND FLOOR FINISH INFORMATION.
5. PROVIDE BLOCKING FOR ALL WALLS WHERE WALL HUNG EQUIPMENT AND FIXTURES OCCUR.
6. STANDARD MOUNTING HEIGHTS OF RESTROOM ACCESSORIES AND PLUMBING FIXTURES TO FOLLOW THE ACCESSIBILITY STANDARDS.
7. REFER TO ACCESSIBILITY DETAILS FOR ACCESSIBILITY REQUIREMENTS AT PUBLIC RESTROOM.

KEYNOTES

03 3000.H	CONCRETE CURB PER STRUCTURAL
05 5000.J	CUSTOM METAL VENT SCREEN
08 3313-A	COILING COUNTER DOOR
08 4313.A	ALUMINUM STOREFRONT SYSTEM - REFER TO SCHEDULES
26 0000.B	SURFACE MOUNTED PANELBOARD. REFER TO ELECTRICAL

LEGEND

CMU

PERFORATED METAL PANEL, PAINTED

EXPOSED STUDS TYP.
NOTE: STUDS NOW SHOWN FOR CLARITY

TILE PER 23/A-901

CITY OF SAN LUIS OBISPO

PROJECT TITLE:
MISSION PLAZA ENHANCEMENTS

SHEET TITLE:
INTERIOR ELEVATIONS

LICENSED ARCHITECT
C-38079
12-31-2025
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1/4" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AK501

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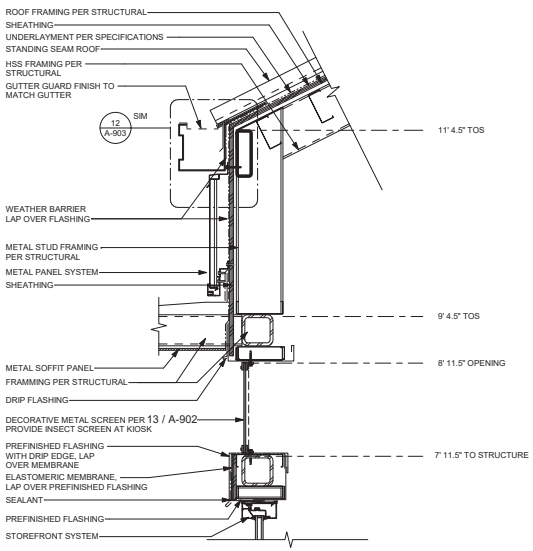
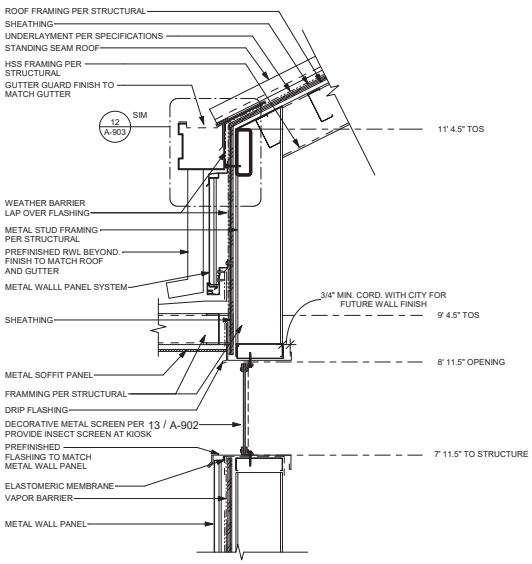
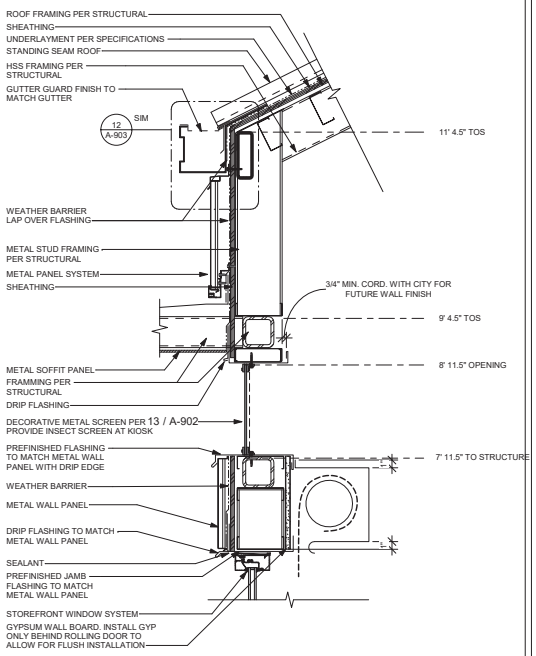


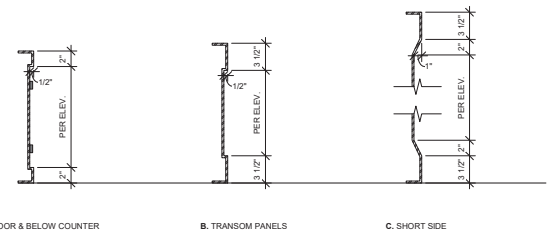
31 TYP. WALL SECTION AT STOREFRONT
AK102 AK601 1 1/2" = 1'-0"



21 TYP. WALL SECTION AT KIOSK
AK102 AK601 1 1/2" = 1'-0"

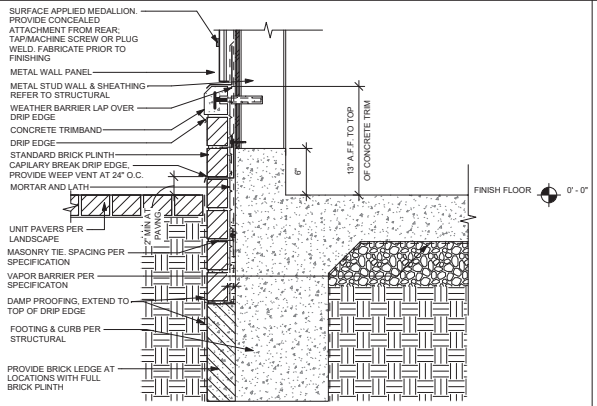


11 TYP. WALL SECTION AT COILING COUNTER DOOR
AK102 AK601 1 1/2" = 1'-0"

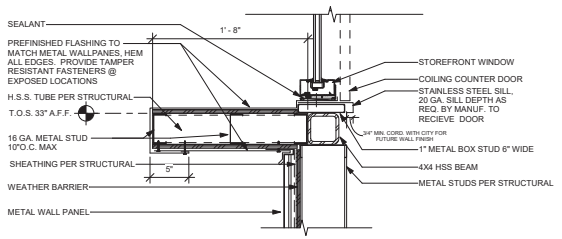


A. DOOR & BELOW COUNTER
B. TRANSOM PANELS
C. SHORT SIDE PICTURE FRAME PANEL

32 WALL PANEL SECTIONS - KIOSK
AK601 1 1/2" = 1'-0"



22 FOOTING DETAIL KIOSK
AK102 AK601 1 1/2" = 1'-0"



12 KIOSK COUNTER
AK301 AK601 1 1/2" = 1'-0"

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

WALL SECTIONS

SHEET TITLE:

LICENSED ARCHITECT
Kathryn Hurd
C-38079
12-31-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1 1/2" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AK601

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ACCESSIBILITY NOTES

ALL ACCESSIBLE CLEARANCE DIMENSIONS GIVEN FROM FACE OF FINISH UNLESS NOTED OTHERWISE.

MEETING MINIMUM REQUIREMENT OF 11B-213.2 EXCEPTION 4.: "WHERE MULTIPLE SINGLE USER TOILET ROOMS ARE CLUSTERED AT A SINGLE LOCATION, 50 PERCENT, BUT NO FEWER THAN ONE, OF THE SINGLE USER TOILET ROOMS FOR EACH USE AT EACH CLUSTER SHALL COMPLY WITH SECTION 11B-603." A "CLUSTER" IS DEFINED AS A GROUP OF TOILET ROOMS PROXIMATE TO ONE ANOTHER. GENERALLY, TOILET ROOMS IN A CLUSTER ARE WITHIN SIGHT OF, OR ADJACENT TO, ONE ANOTHER. THIS DEISN ADHERS AND MEETS THE DEFINITION OF A CLUSTER AND ARE PROVIDING 3 OUT 5 STALLS TO MEET 11B-603 AS NOTED.

REFER TO DETAIL 12/G-103 FOR ACC. LAVATORY REQUIREMENTS

REFER TO DETAIL 13/G-103FOR ACC. RESTROOM ACCESSORIES

REFER TO DETAIL 12/G-104 FOR ACC. TOILET REQUIREMENTS

REFER TO DETAIL 21/G-103 FOR KICK PLATE REQUIREMENTS

REFER TO DETAIL 23/G-103 FOR ACC. RESTROOM SYMBOL REQUIREMENTS

REFER TO DETAIL 33/G-103 FOR ACC. REACH RANGES

REFER TO DETAIL 13/G-104 FOR ACC. TURNING SPACE REQUIREMENTS

REFER TO DETAIL 41/G-103 FOR ACC. DOOR REQUIREMENTS

REFER TO DETAIL 23/G-104 FOR ACC. DOOR/ENTRY CLEARANCES

REFER TO DETAIL 43/G-103 FOR TOE/KNEE CLEARANCES

REFER TO DETAIL 23/23/G-104 FOR CLEARANCES AT DOORS & GATES

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION.
3. REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION.
4. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
5. ALL FURNITURE AND EQUIPMENT IS BY OWNER AND IS SHOWN FOR COORDINATION PURPOSES ONLY.
6. REFER TO FINISH PLAN AND SCHEDULE FOR INTERIOR WALL, CEILING AND FLOOR FINISH INFORMATION.
7. DIMENSIONS ARE TO FACE OF SHEATHING OR CMU UNLESS SPECIFICALLY NOTED OTHERWISE.
8. PROVIDE ADEQUATE BLOCKING IN WALLS FOR CABINETS AND OTHER WALL MOUNTED ACCESSORIES INCLUDING BUT NOT LIMITED TO HANDRAILS, SHELVING AND BATHROOM FIXTURES.
9. PROVIDE FIRE BLOCKING FOR WALL CAVITIES THAT EXCEED CBC HEIGHT LIMITATION.
10. FLOOR TO SLOPE TO DRAIN AT 1/4" :1' MAX. SLOPE

KEYNOTES

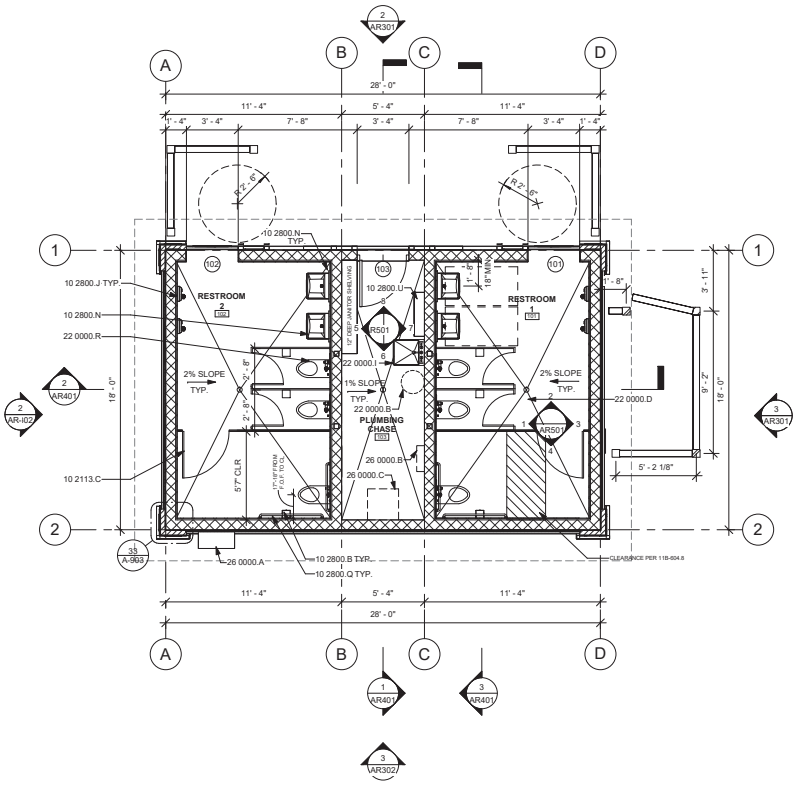
10 2113.C	TOILET PARTITION
10 2800.B	SURFACE MOUNTED TOILET PAPER DISPENSER
10 2800.J	WALL-MOUNTED ELECTRIC HAND DRYER
10 2800.N	MIRROR
10 2800.Q	WALL-MOUNTED GRAB BAR
10 2800.U	MOP RACK
22 0000.B	WATER HEATER. REFER TO PLUMBING
22 0000.D	FLOOR DRAIN. MINIMUM 1/4"-1' SLOPE. REFER TO PLUMBING
22 0000.I	MOP SINK. REFER TO PLUMBING
22 0000.R	WALL MOUNTED TOILET. REFER TO PLUMBING
26 0000.A	SURFACE MOUNTED ELECTRIC METER. PROVIDE RAW CABINET FOR CUSTOM PAINTED FIELD FINISH TO MATCH BRICK COLOR. COLRO TO BE SELECTED BY ARCHITECT. REFER TO ELECTRICAL
26 0000.B	SURFACE MOUNTED PANELBOARD. REFER TO ELECTRICAL
26 0000.C	WALL MOUNTED DATA CABINET. REFER TO ELECTRICAL

WALL LEGEND

INTERIOR- 7 5/8" C.M.U.

EXTERIOR- 7 5/8" C.M.U. W/ BRICK VENEER, METAL PANEL, OR, METAL PANLE OVER 4" METAL FURRING CHANNEL.

EXTERIOR- 6" METAL STUD, UNFINISHED INTERIOR. METAL PANEL OR BRICK VENEER EXTERIOR.

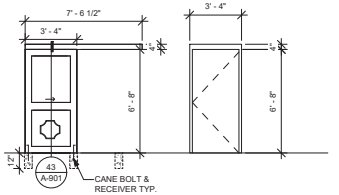


1 GROUND FLOOR PLAN - RESTROOM
AR301 AR101 1/4" = 1'-0"

DOOR SCHEDULE

NO.	TYPE	SIZE WIDTH	SIZE HEIGHT	SIGNAGE	HARDWARE
101	A	3' - 4"	6' - 8"	1, 3	1
102	A	3' - 4"	6' - 8"	1, 4	1
103	B	3' - 0"	6' - 8"	2	2

EXTERIOR DOOR TYPES



A. SLIDING DOOR

B. HOLLOW METAL DOOR AND FRAME

DOOR NOTES

1. VERIFY ROUGH OPENING SIZE WITH DOOR MANUFACTURER SPECIFICATIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO VERIFY ACTUAL DOOR SIZE TO FIT FINISH OPENING PRIOR TO FABRICATION OF DOOR AND FINISH OPENING.
3. ALL DOOR HARDWARE TO HAVE LEVER HANDLES AND COMPLY WITH DETAIL 41/G-103
4. SEE DOOR SCHEDULE FOR SIGN SCHEDULE. REFER TO DETAILS 23/G-103 FOR ROOM IDENTIFICATION SYMBOL LOCATION.
5. ALL THRESHOLDS SHALL COMPLY WITH DETAIL 42/G-103.
6. EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
7. THE BOTTOM 10" OF ALL DOORS SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.
8. ALL GLAZING WITHIN 24" OF DOOR JAMB TO BE TEMPERED PER CBC 2406.4.2

DOOR SIGNAGE

1. RESTROOM & ACCESSIBILITY SIGNAGE.
2. MAINTENANCE
3. WOMENS
4. MENS

NOTE: VERIFY DOOR SIGNAGE WORDING WITH CITY AND ARCHITECT PRIOR TO ORDERING AND INSTALLATION

DOOR HARDWARE

NOTE: REFER TO SPECIFICATION 08 710O FOR DOOR HARDWARE GROUPS

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

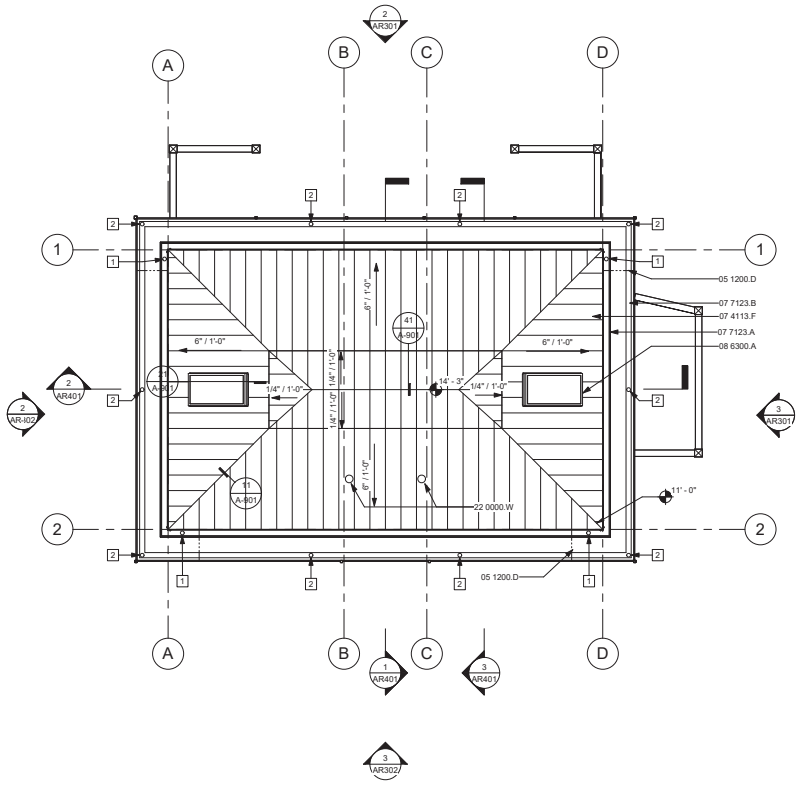
FLOOR PLAN & DOOR SCHEDULE

SHEET TITLE:

LICENSED ARCHITECT
Kathryn Hurd
C-38079
12 - 31 - 2025
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1/4" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AR101

4/30/2024 10:03:59 AM



1 ROOF PLAN - RESTROOM
AR301 AR102 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR ROOF FRAMING INFORMATION INCLUDING MEMBER SIZES AND CONNECTION HARDWARE.
2. REFER TO PLUMBING PLANS FOR ROOF VENT PENETRATION.

KEYNOTES

05 1200.D	C-CHANNEL OUTLOOKER IN LOWER CANOPY FRAMING. REFER TO STRUCTURAL
07 4113.F	STANDING SEAM METAL ROOF
07 7123.A	GUTTER
07 7123.B	INTERNAL GUTTER
08 6300.A	METAL FRAMED SKYLIGHT
22 0000.W	STACK VENT. LOCATE ON SOUTH SLOPE OF ROOF. REFER TO PLUMBING

LEGEND

10'-0"	HEIGHT OF TOP OF ROOFING SURFACE (INCLUDING CRICKETS AND INSULATION)
1/2":1'-0"	ROOF SLOPE
	STANDING SEAM ROOF
1	IN WALL RAIN WATER LEADER SCHEDULE 40 PIPE TO BRASS COWS TOUNGE SCUPPER
2	THROUGH ROOF DOWNSPOUT EXTEND 1" BELOW SOFFIT
3	DOWNSPOUT TO ROOF BELOW

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

ROOF PLAN

SHEET TITLE:

LICENSED ARCHITECT
C-38079
02 - 28 - 2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	As indicated
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AR102

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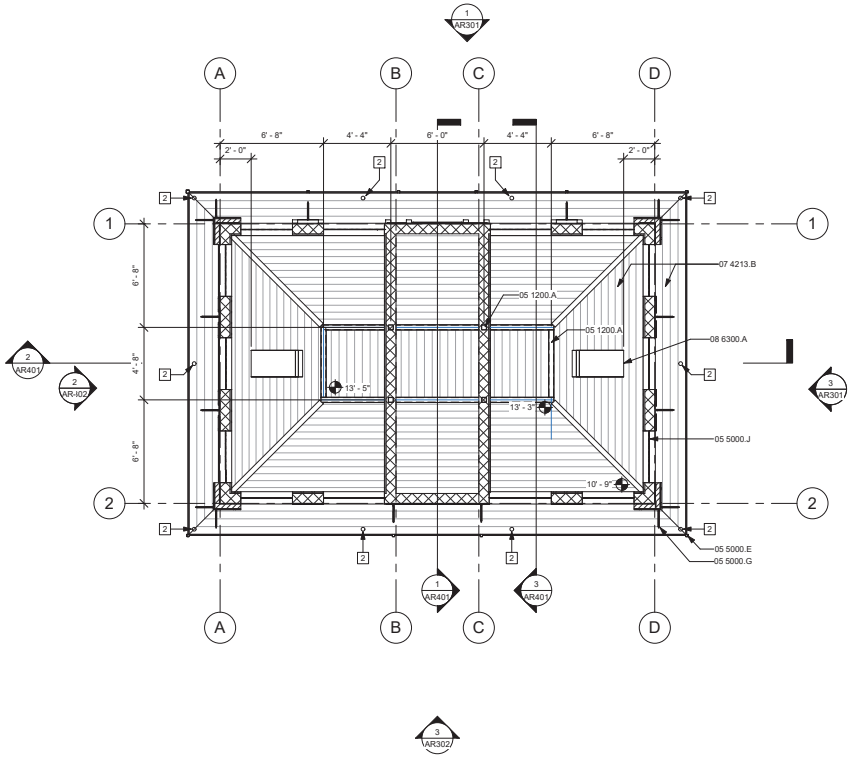

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION ON ELECTRICAL EQUIPMENT, LIGHTING FIXTURES AND LOCATIONS OF ELECTRICAL OUTLETS
3. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
4. REFER TO FINISH PLAN AND SCHEDULE FOR INTERIOR WALL, CEILING, AND FLOOR FINISH INFORMATION.
5. PROVIDE BLOCKING FOR ALL WALLS WHERE WALL HUNG EQUIPMENT AND FIXTURES OCCUR.
6. STANDARD MOUNTING HEIGHTS OF RESTROOM ACCESSORIES AND PLUMBING FIXTURES TO FOLLOW THE ACCESSIBILITY STANDARDS.
7. REFER TO ACCESSIBILITY DETAILS FOR ACCESSIBILITY REQUIREMENTS AT PUBLIC RESTROOM.

KEYNOTES

05 1200.A	STEEL COLUMN. REFER TO STRUCTURAL DRAWINGS
05 5000.E	CUSTOM OVERHANG METAL DETAIL
05 5000.G	CUSTOM OVERHANG METAL SUPPORT BRACKET
05 5000.J	CUSTOM METAL VENT SCREEN
07 4213.B	METAL WALL PANEL
08 6300.A	METAL FRAMED SKYLIGHT

LEGEND

10'-0"	CEILING HEIGHT
	LINEAR METAL SOFFIT
1	IN WALL DOWN SPOUT SCHEDULED PIPE TO COWS TOUNGE SCUPPER
2	THROUGH ROOF DOWNSPOUT EXTEND 1" BELOW SOFFIT
3	DOWNSPOUT TO ROOF BELOW

1 RESTROOM REFLECTED CEILING PLAN
AR301 AR103 1/4" = 1'-0"

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

REFLECTED CEILING PLAN

SHEET TITLE:

LICENSED ARCHITECT
C-38079
02-28-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	As indicated
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AR103

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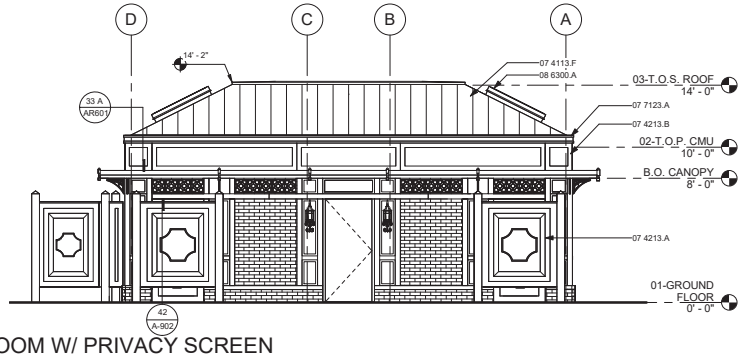
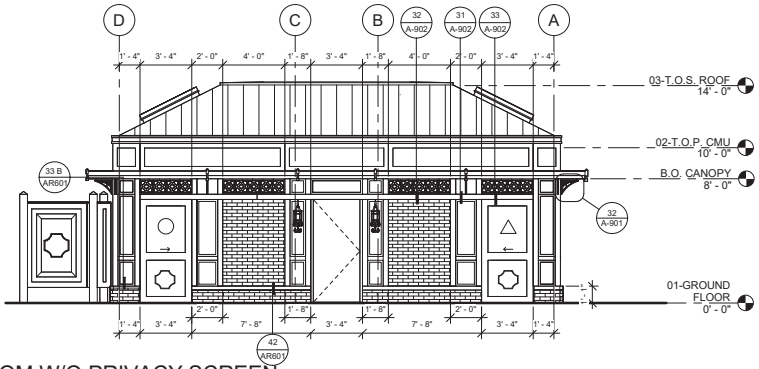


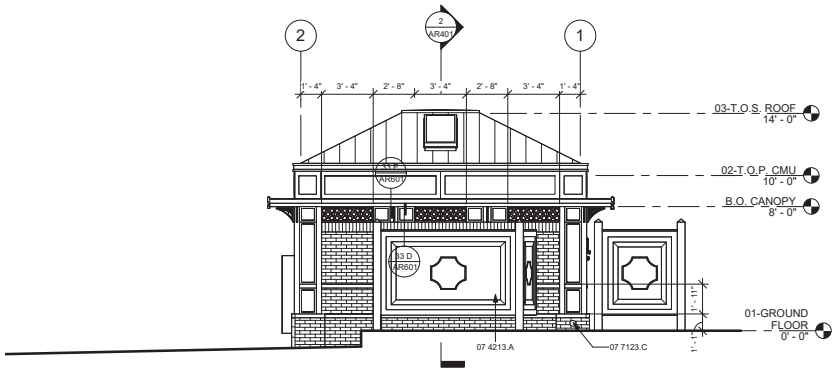
1 NORTH ELEVATION - RESTROOM W/ PRIVACY SCREEN

AR103|AR301 1/4" = 1'-0"



2 NORTH ELEVATION - RESTROOM W/O PRIVACY SCREEN

AR101|AR301 1/4" = 1'-0"



3 EAST ELEVATION - RESTROOM W/ TRASH ENCLOSURE

AR101|AR301 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION ON ELECTRICAL EQUIPMENT, LIGHTING FIXTURES AND LOCATIONS OF ELECTRICAL OUTLETS
3. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
4. REFER TO FINISH PLAN AND SCHEDULE FOR INTERIOR WALL, CEILING, AND FLOOR FINISH INFORMATION.
5. PROVIDE BLOCKING FOR ALL WALLS WHERE WALL HUNG EQUIPMENT AND FIXTURES OCCUR.
6. STANDARD MOUNTING HEIGHTS OF RESTROOM ACCESSORIES AND PLUMBING FIXTURES TO FOLLOW THE ACCESSIBILITY STANDARDS.
7. REFER TO ACCESSIBILITY DETAILS FOR ACCESSIBILITY REQUIREMENTS AT PUBLIC RESTROOM.

KEYNOTES

07 4113.F	STANDING SEAM METAL ROOF
07 4213.A	METAL WALL PANEL W/ SURFACE APPLIED MEDALLION
07 4213.B	METAL WALL PANEL
07 7123.A	GUTTER
07 7123.C	SCUPPER
08 6300.A	METAL FRAMED SKYLIGHT

LEGEND

BRICK VENEER

STANDING SEAM METAL ROOF

METAL WALL PANELS

CITY OF SAN LUIS OBISPO

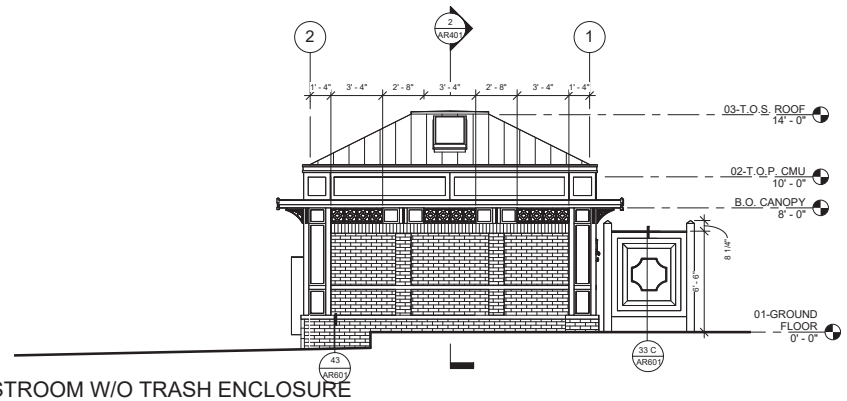
PROJECT TITLE:
MISSION PLAZA ENHANCEMENTS

SHEET TITLE:
EXTERIOR ELEVATIONS

LICENSED ARCHITECT
Kathryn Hurd
C-38079
02-28-2025
DATE
STATE OF CALIFORNIA

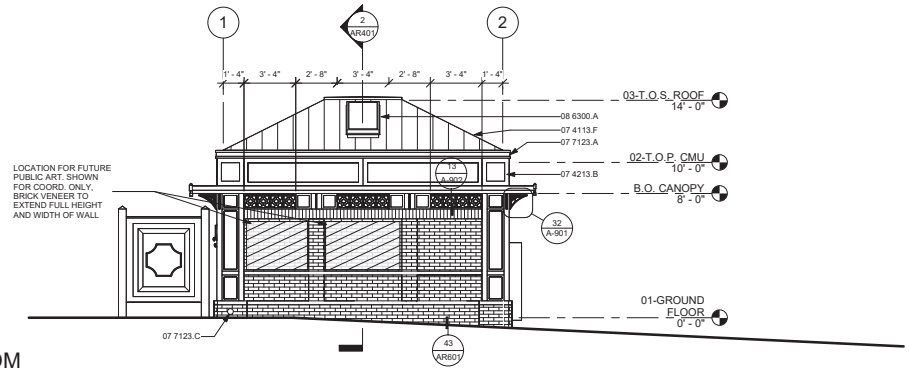
DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1/4" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AR301

4/30/2024 10:03:59 AM



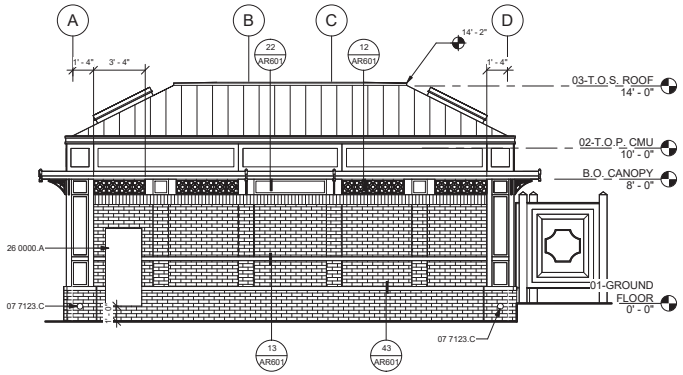
1 EAST ELEVATION - RESTROOM W/O TRASH ENCLOSURE

AR101|AR302 1/4" = 1'-0"



2 WEST ELEVATION - RESTROOM

AR101|AR302 1/4" = 1'-0"



3 SOUTH ELEVATION - RESTROOM

AR101|AR302 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION ON ELECTRICAL EQUIPMENT, LIGHTING FIXTURES AND LOCATIONS OF ELECTRICAL OUTLETS
3. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
4. REFER TO FINISH PLAN AND SCHEDULE FOR INTERIOR WALL, CEILING, AND FLOOR FINISH INFORMATION.
5. PROVIDE BLOCKING FOR ALL WALLS WHERE WALL HUNG EQUIPMENT AND FIXTURES OCCUR.
6. STANDARD MOUNTING HEIGHTS OF RESTROOM ACCESSORIES AND PLUMBING FIXTURES TO FOLLOW THE ACCESSIBILITY STANDARDS.
7. REFER TO ACCESSIBILITY DETAILS FOR ACCESSIBILITY REQUIREMENTS AT PUBLIC RESTROOM.

KEYNOTES

07 4113.F	STANDING SEAM METAL ROOF
07 4213.B	METAL WALL PANEL
07 7123.A	GUTTER
07 7123.C	SCUPPER
08 6300.A	METAL FRAMED SKYLIGHT
26 0000.A	SURFACE MOUNTED ELECTRIC METER. PROVIDE RAW CABINET FOR CUSTOM PAINTED FIELD FINISH TO MATCH BRICK COLOR. COLRO TO BE SELECTED BY ARCHITECT. REFER TO ELECTRICAL

LEGEND

BRICK VENEER

STANDING SEAM METAL ROOF

METAL WALL PANELS

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

EXTERIOR ELEVATIONS

SHEET TITLE:

LICENSED ARCHITECT
Kathryn Hurd
C-38079
12-31-2025
RENEWAL DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1/4" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AR302

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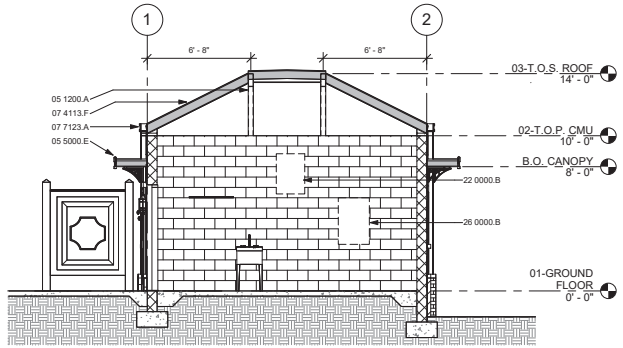
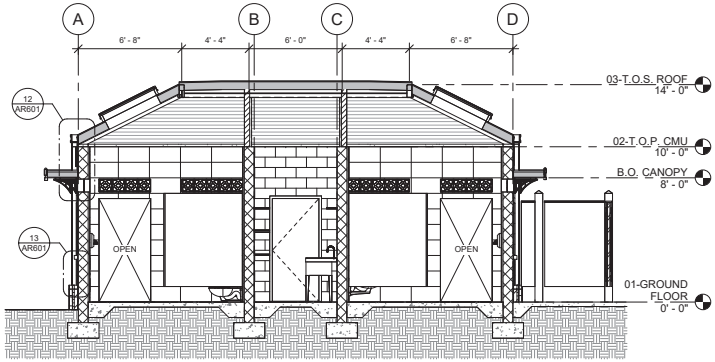


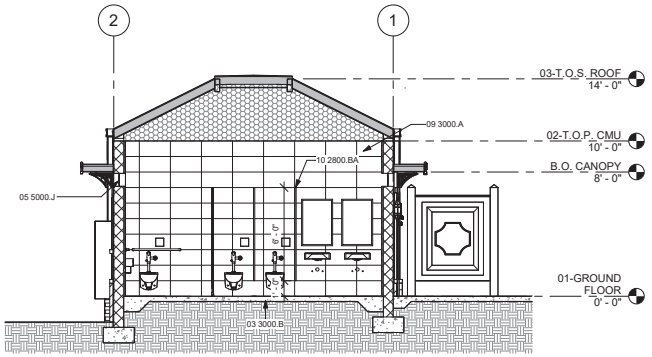
1 BUILDING SECTION 1

AR101|AR401 1/4" = 1'-0"



2 BUILDING SECTION 2

AR101|AR401 1/4" = 1'-0"



3 BUILDING SECTION 3

AR101|AR401 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION ON ELECTRICAL EQUIPMENT, LIGHTING FIXTURES AND LOCATIONS OF ELECTRICAL OUTLETS
3. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
4. REFER TO FINISH PLAN AND SCHEDULE FOR INTERIOR WALL, CEILING, AND FLOOR FINISH INFORMATION.
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6. STANDARD MOUNTING HEIGHTS OF RESTROOM ACCESSORIES AND PLUMBING FIXTURES TO FOLLOW THE ACCESSIBILITY STANDARDS.
7. REFER TO ACCESSIBILITY DETAILS FOR ACCESSIBILITY REQUIREMENTS AT PUBLIC RESTROOM.

KEYNOTES

03 3000.B	CONCRETE SLAB, REFER TO STRUCTURAL
05 1200.A	STEEL COLUMN. REFER TO STRUCTURAL DRAWINGS
05 5000.E	CUSTOM OVERHANG METAL DETAIL
05 5000.J	CUSTOM METAL VENT SCREEN
07 4113.F	STANDING SEAM METAL ROOF
07 7123.A	GUTTER
09 3000.A	CERAMIC TILE, WALL APPLICATION
10 2800.BA	FLOOR-MOUNTED TOILET PARTITION
22 0000.B	WATER HEATER. REFER TO PLUMBING
26 0000.B	SURFACE MOUNTED PANELBOARD. REFER TO ELECTRICAL

LEGEND

4" METAL STUD

7 5/8" CONCRETE MASONRY UNITS

CMU WALL FACE PER WALL TYPE

PERFORATED METAL PANEL

TILE PER 23/A901

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

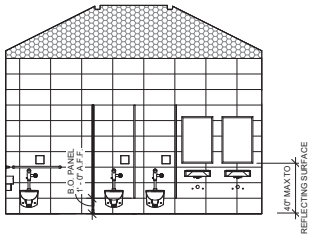
BUILDING SECTIONS

SHEET TITLE:

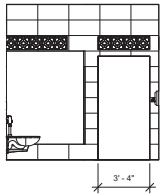
LICENSED ARCHITECT
Kathryn Hurd
C-38079
02-28-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1/4" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AR401

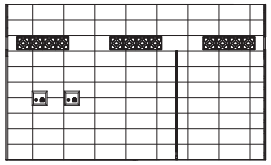
4/30/2024 10:04:01 AM



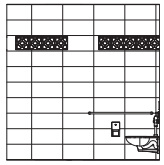
1 RESTROOM 1 - EAST
AR101 AR501 1/4" = 1'-0"



2 RESTROOM 1 - SOUTH
AR101 AR501 1/4" = 1'-0"

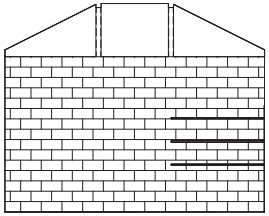


3 RESTROOM 1 - WEST
AR101 AR501 1/4" = 1'-0"

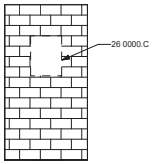


4 RESTROOM 1 - NORTH
AR101 AR501 1/4" = 1'-0"

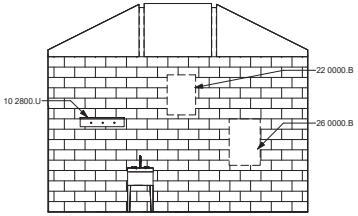
NOTE: RESTROOM 2 - SIMILAR, OPPOSITE HAND



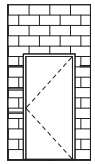
5 CHASE EAST
AR101 AR501 1/4" = 1'-0"



6 CHASE - SOUTH
AR101 AR501 1/4" = 1'-0"



7 CHASE - WEST
AR101 AR501 1/4" = 1'-0"



8 CHASE NORTH
AR101 AR501 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO STRUCTURAL PLANS FOR FURTHER INFORMATION.
2. REFER TO ELECTRICAL PLANS FOR FURTHER INFORMATION ON ELECTRICAL EQUIPMENT, LIGHTING FIXTURES AND LOCATIONS OF ELECTRICAL OUTLETS
3. REFER TO PLUMBING PLANS FOR FURTHER INFORMATION.
4. REFER TO FINISH PLAN AND SCHEDULE FOR INTERIOR WALL, CEILING, AND FLOOR FINISH INFORMATION.
5. PROVIDE BLOCKING FOR ALL WALLS WHERE WALL HUNG EQUIPMENT AND FIXTURES OCCUR.
6. STANDARD MOUNTING HEIGHTS OF RESTROOM ACCESSORIES AND PLUMBING FIXTURES TO FOLLOW THE ACCESSIBILITY STANDARDS.
7. REFER TO ACCESSIBILITY DETAILS FOR ACCESSIBILITY REQUIREMENTS AT PUBLIC RESTROOM.

KEYNOTES

10 2800.U	MOP RACK
22 0000.B	WATER HEATER. REFER TO PLUMBING
26 0000.B	SURFACE MOUNTED PANELBOARD. REFER TO ELECTRICAL
26 0000.C	WALL MOUNTED DATA CABINET. REFER TO ELECTRICAL

LEGEND

CMU

PERFORATED METAL PANEL, PAINTED

EXPOSED STUDS TYP.
NOTE: STUDS NOW SHOWN FOR CLARITY

TILE PER 23/A-901

CITY OF SAN LUIS OBISPO

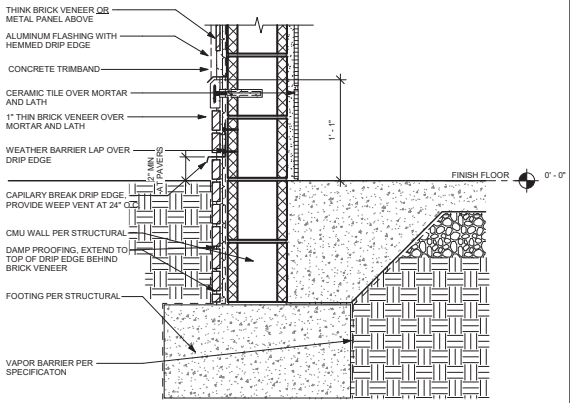
PROJECT TITLE:
MISSION PLAZA ENHANCEMENTS

SHEET TITLE:
INTERIOR ELEVATIONS

LICENSED ARCHITECT
C-38079
02-28-2025
DATE
STATE OF CALIFORNIA

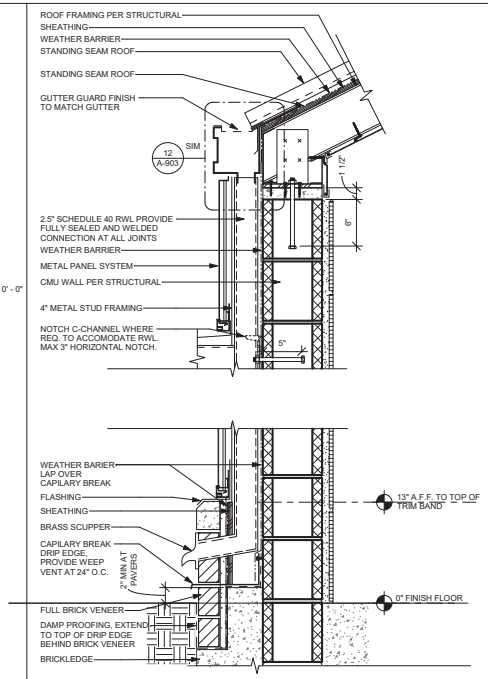
DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1/4" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AR501

4/29/2024 10:04:02 AM

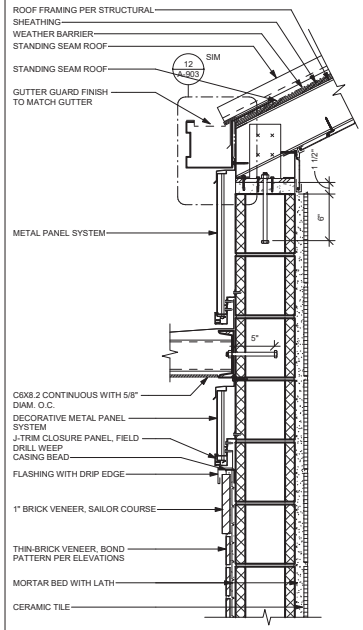


NOTE: AT NORTH ELEVATION, BRICK VENEER AND CONCRETE TRIM BEHIND SLIDING DOOR SHALL NOT EXCEED 2" IN THICKNESS

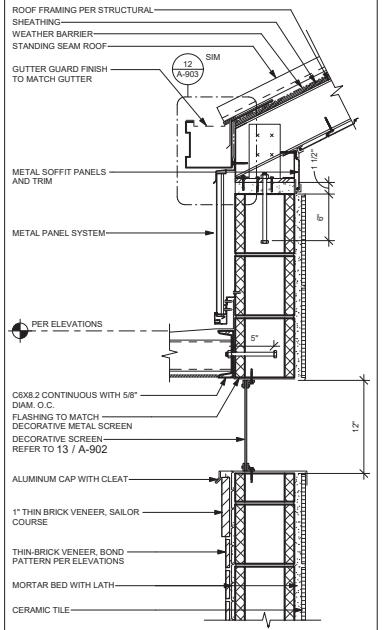
42 AR301 AR601 FOOTING DETAIL AT FRONT OF RESTROOM
1 1/2" = 1'-0"



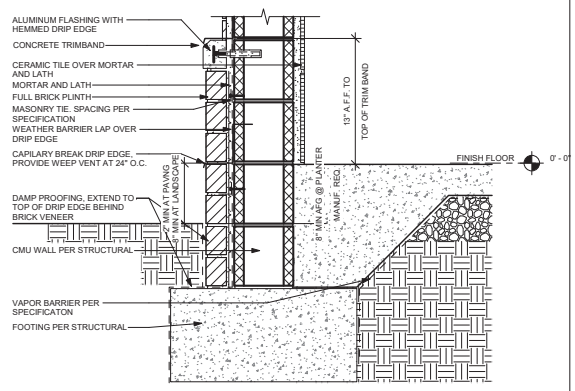
32 AR601 WALL SECTION W/ RAINWATER PIPE
1 1/2" = 1'-0"



22 AR302 AR601 WALL SECTION W/ METAL PANEL
1 1/2" = 1'-0"

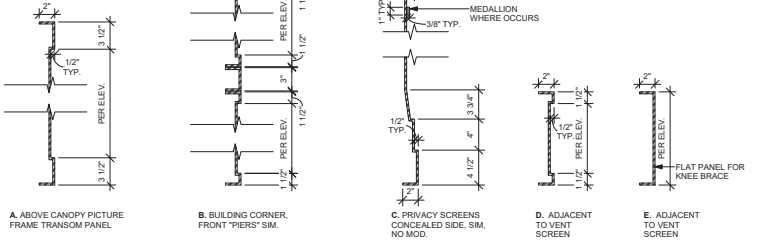


12 AR302 AR601 TYP. WALL SECTION W/ SCREEN
1 1/2" = 1'-0"



43 AR302 AR601 FOOTING DETAIL RESTROOM
1 1/2" = 1'-0"

NOTE: WHERE "PICTURE FRAME" METAL WALL PANELS OCCUR NOT SPECIFICALLY DETAILED HERE, CONTRACTOR TO ASSUME 90° CORNER & 1/2" RECESS.



A. ABOVE CANOPY PICTURE FRAME TRANSOM PANEL

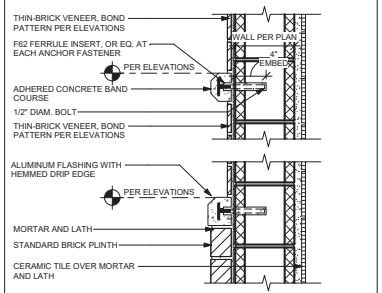
B. BUILDING CORNER, FRONT "PIERS" SIM.

C. PRIVACY SCREENS CONCEALED SIDE, SIM, NO MOD.

D. ADJACENT TO VENT SCREEN

E. ADJACENT TO VENT SCREEN

33 AR601 WALL PANEL SECTIONS - RESTROOM
1 1/2" = 1'-0"



13 AR302 AR601 PLINTH DETAIL
1 1/2" = 1'-0"

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

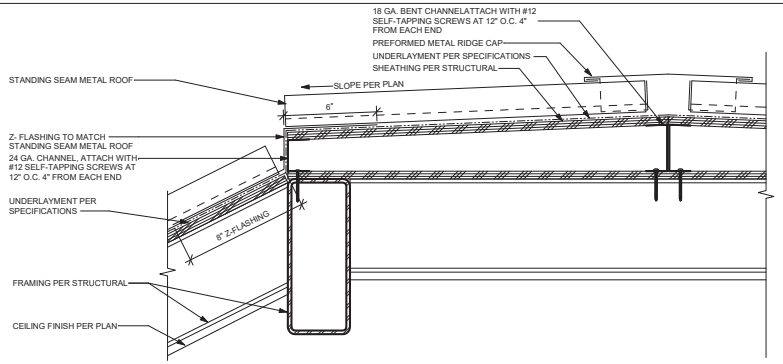
WALL SECTIONS

SHEET TITLE:

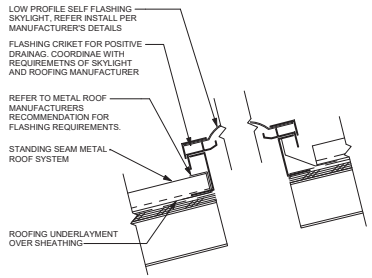
LICENSED ARCHITECT
Kathryn Hurd
C-38079
12-31-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	1 1/2" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	AR601

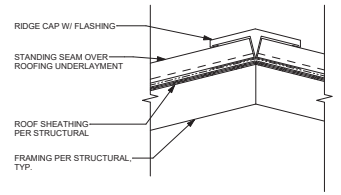
4/30/2024 10:04:03 AM



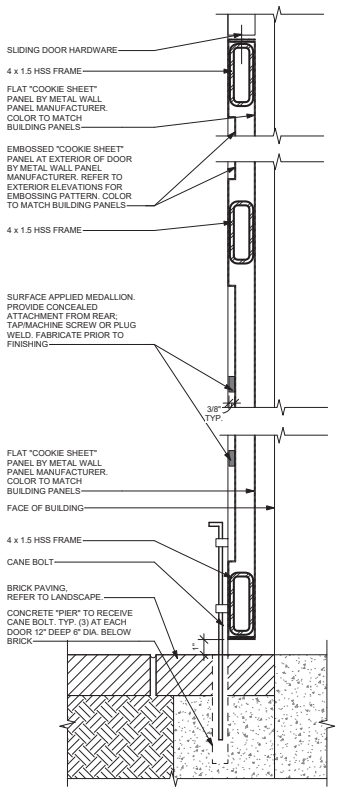
41 ROOF RIDGE DETAIL
AR102 A-901 3" = 1'-0"



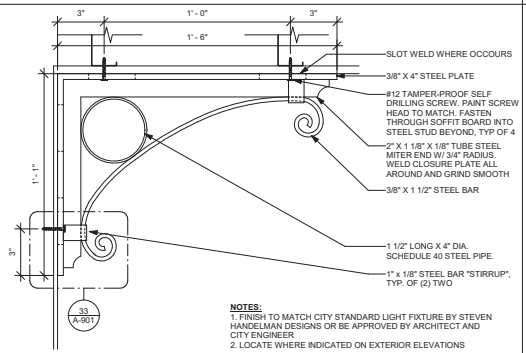
21 SKYLIGHT - STANDING SEAM
AR102 A-901 1 1/2" = 1'-0"



11 ROOF RIDGE - STANDING SEAM
AK102 A-901 1 1/2" = 1'-0"

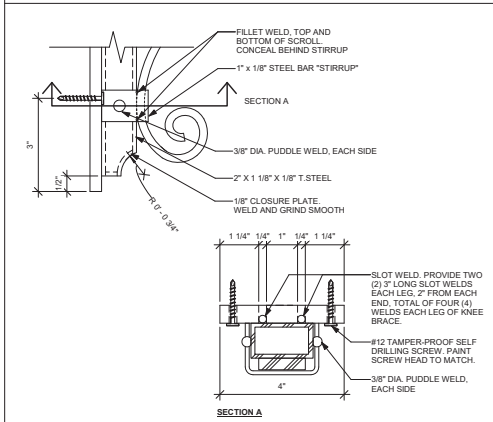


43 SLIDING DOOR DETAIL
A-901 3" = 1'-0"



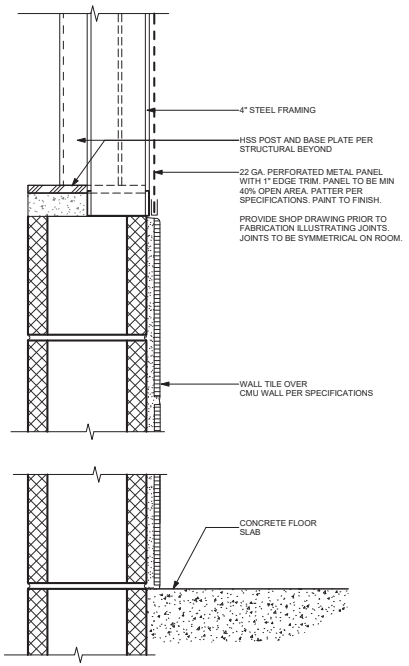
NOTES:
1. FINISH TO MATCH CITY STANDARD LIGHT FIXTURE BY STEVEN HANDELMAN DESIGNS OR BE APPROVED BY ARCHITECT AND CITY ENGINEER
2. LOCATE WHERE INDICATED ON EXTERIOR ELEVATIONS

32 DECORATIVE ROOF KNEE BRACE
AR301 A-901 3" = 1'-0"

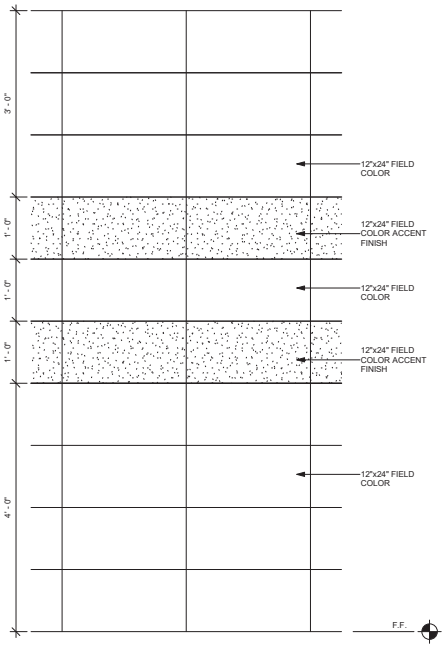


SECTION A

33 KNEE BRACE CONNECTION DETAILS
A-901 A-901 6" = 1'-0"



23 CERAMIC TILE-FLOOR AND WAINSCOT
A-901 3" = 1'-0"



13 TILE WAINSCOT PATTERN
A-901 1" = 1'-0"

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

DETAILS

PROJECT TITLE:

SHEET TITLE:

LICENSED ARCHITECT
Kathryn Hurd
C-38079
12 - 31 - 2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	As indicated
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	A-901

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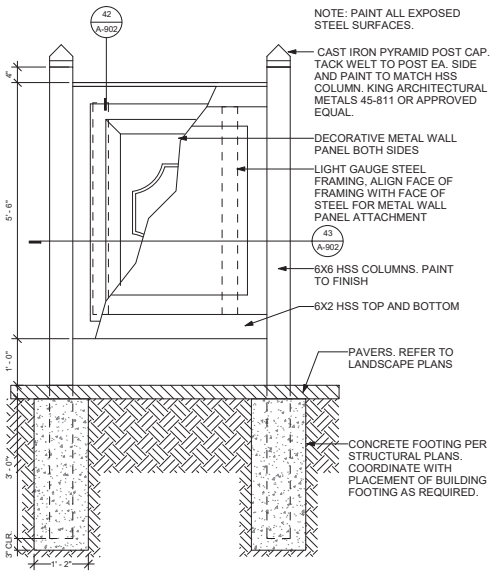
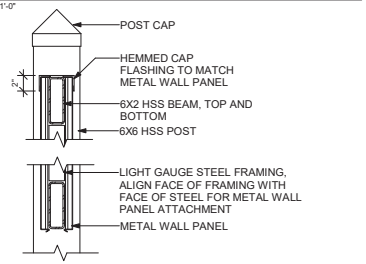
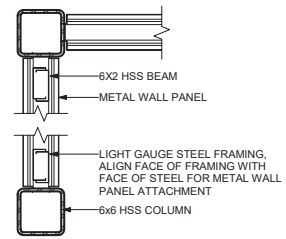


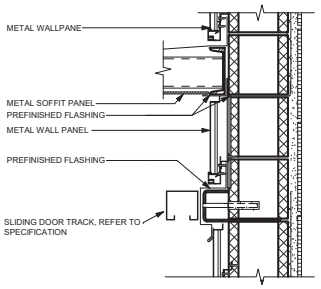
41 PRIVACY SCREEN ELEVATION
A-902 3/4" = 1'-0"



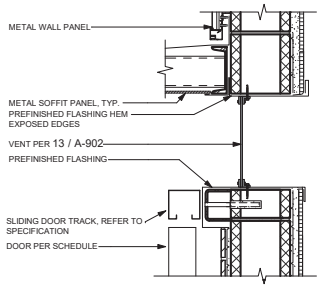
42 PRIVACY SCREEN VERTICAL SECTION
A-902 A-902 1 1/2" = 1'-0"



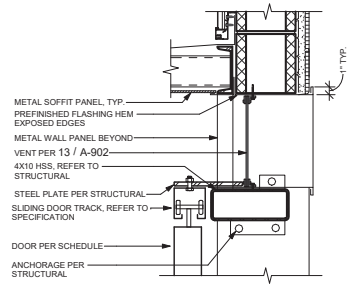
43 PRIVACY SCREEN HORIZONTAL SECTION
A-902 A-902 1 1/2" = 1'-0"



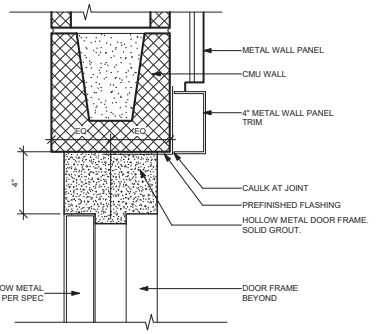
31 VENT SCREEN @ METAL PANELS
AR301 A-902 1 1/2" = 1'-0"

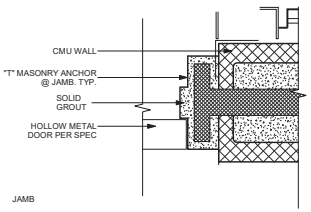


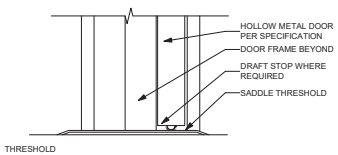
32 VENT SCREEN @BRICK WALL
AR301 A-902 1 1/2" = 1'-0"



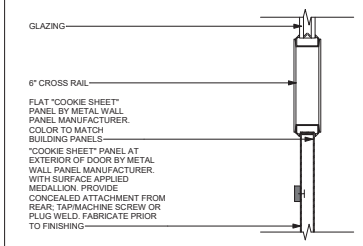
33 VENT SCREEN @DOOR
AR301 A-902 1 1/2" = 1'-0"



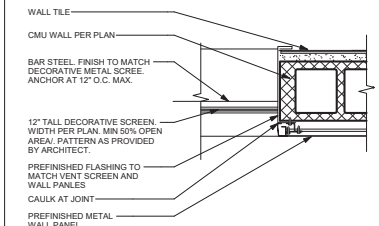




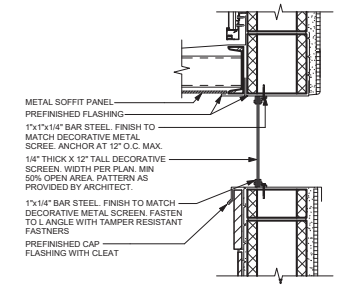
23 TYP. DOOR @ CMU WALL
A-902 3" = 1'-0"



11 STOREFRONT DOOR - CROSS RAIL
AK101 A-902 3" = 1'-0"



12 VENT SCREEN JAMB
A-902 1 1/2" = 1'-0"



13 VENT SCREEN
AR302 A-902 1 1/2" = 1'-0"

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

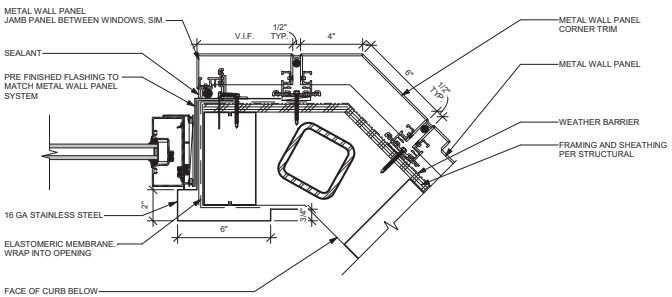
DETAILS

SHEET TITLE:

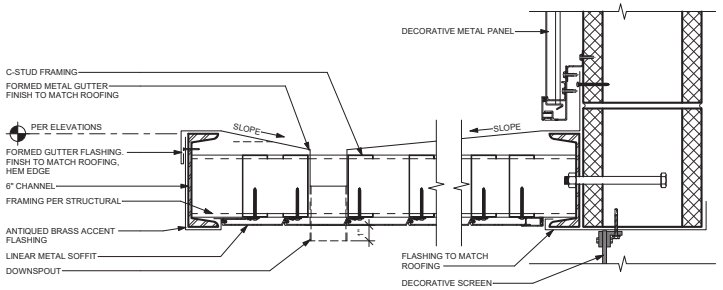
LICENSED ARCHITECT
Kathryn Hurd
C-38079
12-31-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	As indicated
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	A-902

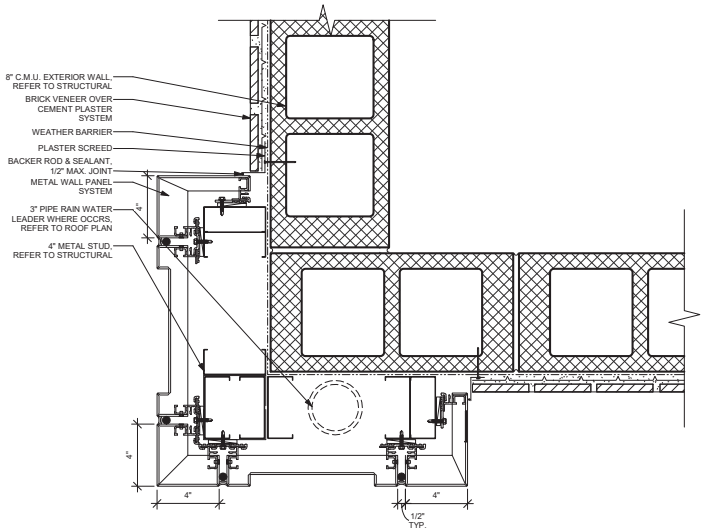
4/30/2024 10:03:35 AM



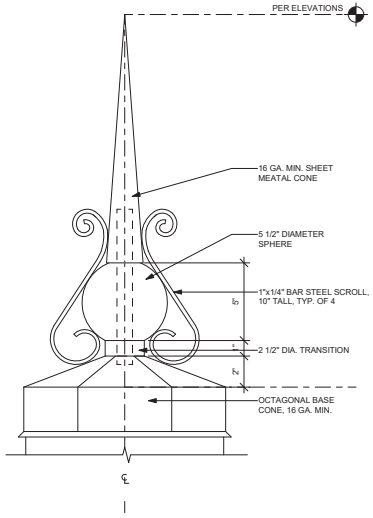
31 BUILDING CORNER - KIOSK
AK101 A-903 3" = 1'-0"



21 CANOPY FRAMING
AK102 A-903 3" = 1'-0"

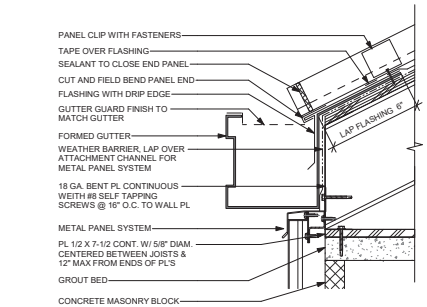


33 BUILDING CORNER - RESTROOM
AR101 A-903 3" = 1'-0"

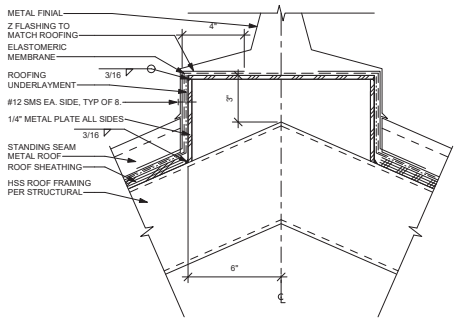


NOTES:
FINISH TO MATCH BUILDING ROOFING OR CITY STANDARD LIGHT FIXTURE BY STEVEN HANDELMAN DESIGNS. FINISH TO BE APPROVED BY ARCHITECT AND CITY ENGINEER PRIOR TO FABRICATION.

23 ROOF - FINIAL - KIOSK
A-903 3" = 1'-0"



12 GUTTER
AK601 A-903 3" = 1'-0"



13 STANDING SEAM ROOF - RIDGE - KIOSK
AK102 A-903 3" = 1'-0"

MISSION PLAZA ENHANCEMENTS

DETAILS

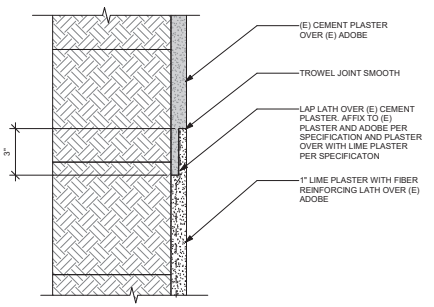
PROJECT TITLE:

SHEET TITLE:

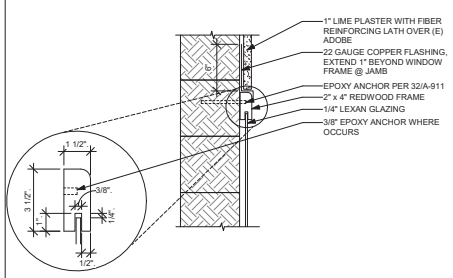
LICENSED ARCHITECT
Kathryn Hunt
C-38079
12-31-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
CHECKED BY:	KH
APPROVED BY:	KH
SCALE:	3" = 1'-0"
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	A-903

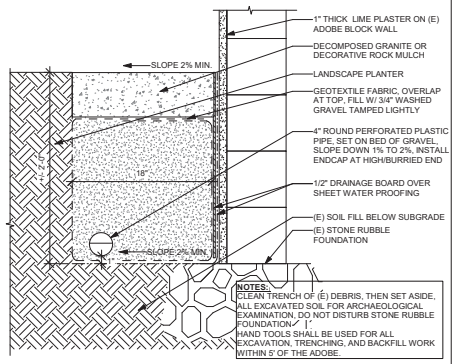
4/30/2024 10:03:35 AM



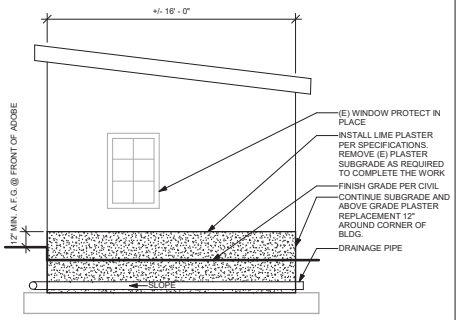
31 ADOBE PLASTER JOINT
A-911 A-911 3" = 1'-0"



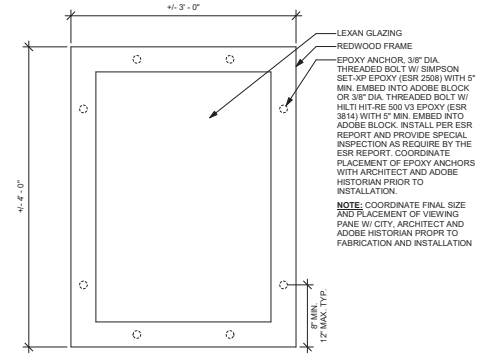
21 ADOBE WINDOW FRAME - HEAD
A-911 A-911 1 1/2" = 1'-0"



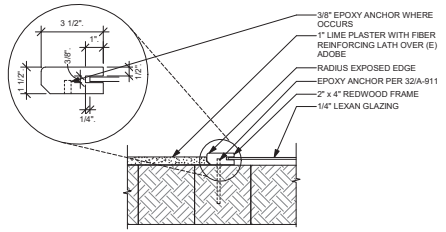
11 ADOBE FDN. DRAINAGE @ PLANTER
A-911 1 1/2" = 1'-0"



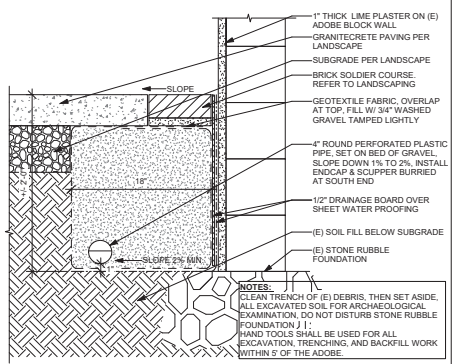
42 ADOBE WALL SOUTH ELEVATION
A-911 1/4" = 1'-0"



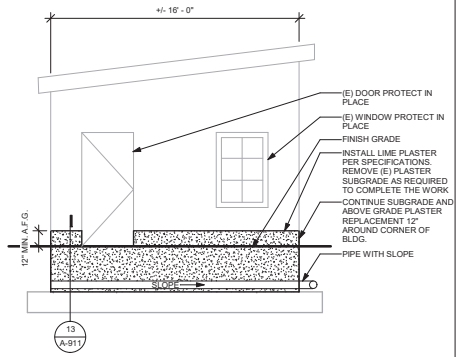
32 ADOBE WINDOW FRAME - EPOXY ANCHORS
A-911 1 1/2" = 1'-0"



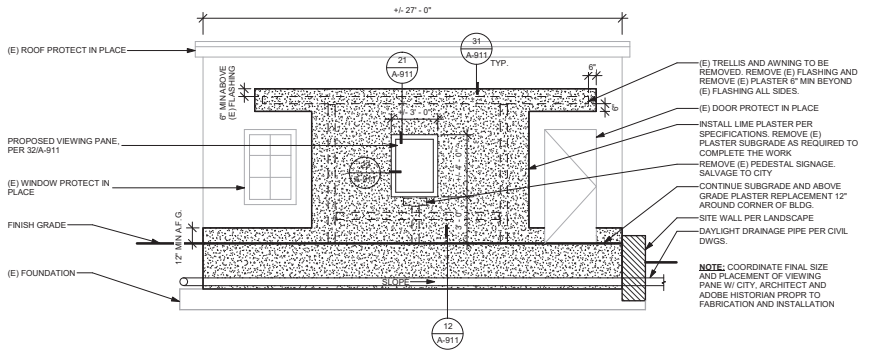
22 ADOBE WINDOW FRAME - JAMB
A-911 A-911 1 1/2" = 1'-0"



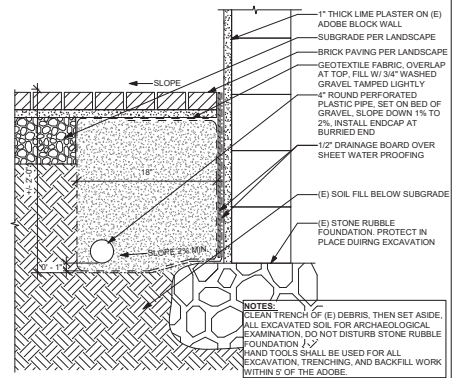
12 ADOBE FDN. DRAINAGE @ GRANICRETE PAVING
A-911 A-911 1 1/2" = 1'-0"



43 ADOBE WALL NORTH ELEVATION
A-911 1/4" = 1'-0"



33 ADOBE WALL WEST ELEVATION
A-911 1/4" = 1'-0"



13 ADOBE FDN. DRAINAGE @ BRICK PAVERS
A-911 A-911 1 1/2" = 1'-0"

4/30/2024 10:03:56 AM

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

ADOBE DETAILS

SHEET TITLE:

LICENSED ARCHITECT
Kathryn Hurd
C-38079
12-31-2025
DATE
STATE OF CALIFORNIA

DESIGNED BY:	DG
DRAWN BY:	DG
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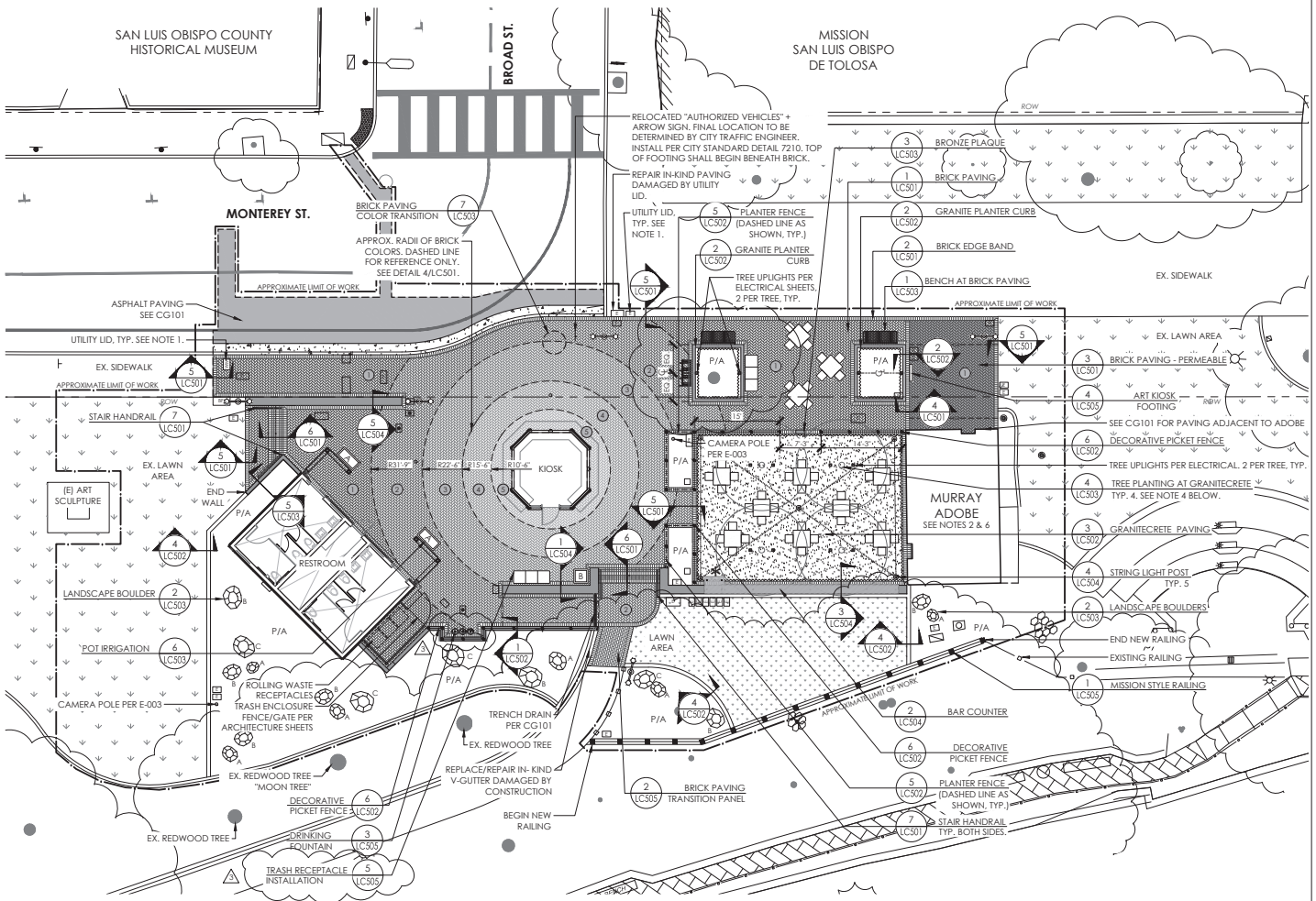
APPROVED BY:	KH
SCALE:	As indicated
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	
SHEET NO.	A-911



MATERIALS LEGEND

SYMBOL	DESCRIPTION
	BRICK PAVING TYPE 1 PATTERN: HERRINGBONE COLOR: OLD TOWN RED (SHADING DELINEATES PERMEABLE PAVING)
	BRICK PAVING TYPE 2 PATTERN: HERRINGBONE COLOR: MOUNTAIN ROSE
	BRICK PAVING TYPE 3 PATTERN: HERRINGBONE COLOR: DUSTY ROSE
	BRICK PAVING TYPE 4 PATTERN: HERRINGBONE COLOR: SUMMER WHEAT
	BRICK PAVING TYPE 5 PATTERN: HERRINGBONE COLOR: SUTTER GOLD
	BRICK EDGE BAND COLOR: BURNT ROSE
	GRANITECRETE COLOR: NATURAL GOLD

SYMBOL LEGEND

SYMBOL	DESCRIPTION	DETAIL
	BENCH	1 LC503
	TRIPLE STREAM WASTE RECEPTACLES. SEE NOTE 5.	1 LC503
	MOVEABLE BISTRO TABLE (OWNER FURNISHED, N.I.C.)	
A / B	PLANTER POT TYPE A / PLANTER POT TYPE B	
	POLE LIGHT	SEE E-002
	BIKE RACK	1 LC503
	DRINKING FOUNTAIN/BOTTLE FILLER	3 LC505
	ROOT BARRIER	
	SAWCUT LINE	
LIMIT OF WORK	LIMIT OF WORK	
ROW	RIGHT OF WAY	
P/A	PLANTING AREA	
*	ACCESSIBLE SEATING AT BAR COUNTER	
	EXISTING TREE, SEE TP101	

0 10 20 30 feet

1"=10'-0"

OCCUPANT LOAD ANALYSIS FOR PATIO

TOTAL PATIO AREA:	955 SF	
OCCUPANT LOAD FACTOR PER CBC 1004.5:	5 SF / PERSON	
TOTAL OCCUPANT LOAD:	191 PERSONS	
191 PERSONS x .2" /PERSON REQ WIDTH = 38.2"	76" PROVIDED	OK
PER CBC1007.1.1: MAXIMUM DIAGONAL DIMENSION OF PATIO	45 FT	
ALLOWABLE DISTANCE APART OF TWO EXITS:	NOT LESS THAN 1/2 OF 45 FT	
DISTANCE APART OF CENTER OF TWO EXITS:	22.6 FT	OK

NOTES

1. CONTRACTOR TO COORDINATE FINAL PLACEMENT OF ALL UTILITY LIDS (ELECTRICAL, WATER, SEWER, ETC.) WITH ASSOCIATED SUBCONTRACTOR AND LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. REFER TO SHEET A-911 FOR PRESERVATION WORK TO BE COMPLETED AT THE EXISTING ADOBE.
3. REFER TO SHEET TP101 AND TP501 FOR CONSTRUCTION PRACTICES AT EXISTING/RELOCATED TREES.
4. PROPOSED LARGE BOX SPECIMEN TREES AT GRANITECRETE PATIO SHALL BE INSTALLED PRIOR TO IRRIGATION PIPE AND ELECTRICAL CONDUIT. AFTER INSTALLATION OF TREES CONTRACTOR SHALL CONSULT WITH PROJECT ARBORIST TO CONDUCT AIR SPADE ROOT EXCAVATION TO IDENTIFY ROOTS TO BE PRESERVED. PIPE AND CONDUIT SHALL BE HAND TRENCHED AND NO ROOTS OVER 1" IN DIAMETER SHALL BE SEVERED WITHOUT PERMISSION OF THE PROJECT ARBORIST.
5. PERMANENT TRIPLE STREAM WASTE RECEPTACLES AS SHOWN IN THE LEGEND AND LISTED IN THE TECHNICAL SPECIFICATIONS SHALL BE COLLECTED BY PARKS MAINTENANCE. ROLLING TRIPLE WASTE BINS ADJACENT TO THE RESTROOM SHALL BE COLLECTED BY SAN LUIS GARBAGE.
6. A QUALIFIED HISTORIC ARCHITECT OR ARCHITECTURAL HISTORIAN WITH DEMONSTRATED EXPERIENCE WORKING WITH ADOBE STRUCTURES SHALL BE RETAINED BY THE CITY TO MONITOR AND PROVIDE PROTECTION GUIDANCE FOR ANY WORK IN THE IMMEDIATE VICINITY OF THE PERIMETER OF THE MURRAY ADOBE.

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

CONSTRUCTION PLAN

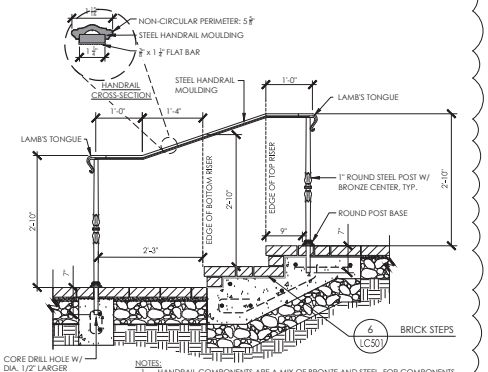
PROJECT TITLE:

SHEET TITLE:

100% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT MEGAN L. PELTIER LIC. #6482 — 8.31.24 Renewal Date — 7.12.23 Date — STATE OF CALIFORNIA

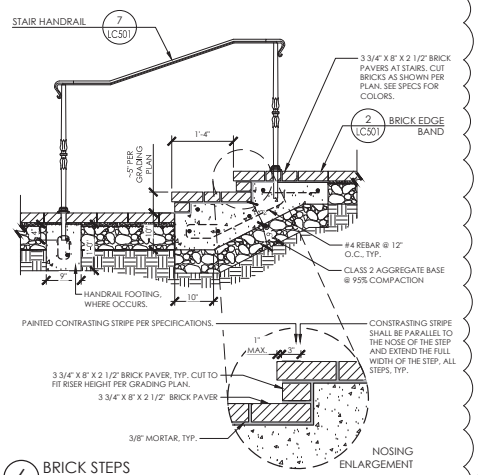
DESIGNED BY: MARISA PELTIER
DRAWN BY: MP
CHECKED BY: LM
APPROVED BY: MP
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO.: 91439-01
PLAN FILE NO. / LOCATION: 0256-03-CU20
SHEET NO.: LC101



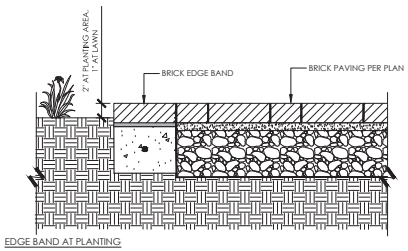
NOTES:

1. HANDRAIL COMPONENTS ARE A MIX OF BRONZE AND STEEL. FOR COMPONENTS THAT HAVE BRONZE ACCENTS MECHANICALLY ATTACHED, BRONZE SHALL BE SEPARATED PRIOR TO SHOP PRIMING. REATTACH PRIOR TO WELDING.
2. PROVIDE CONTINUOUS WELDS ON ALL COMPONENT CONNECTIONS. REMOVE EXCESS SLAG AND GRIND ALL CORNERS SMOOTH.
3. ALL HANDRAIL COMPONENTS THAT ARE STEEL ONLY SHALL BE PAINTED BLACK.
4. CONTRACTOR TO PROVIDE SHOP DRAWINGS SHOWING ALL HANDRAIL COMPONENTS AND LAYOUT PRIOR TO FABRICATION.
5. ALL HANDRAIL COMPONENTS ARE AVAILABLE FROM WWW.JULIUSBLUM.COM. SEE SPECIFICATIONS FOR ITEM NUMBERS.

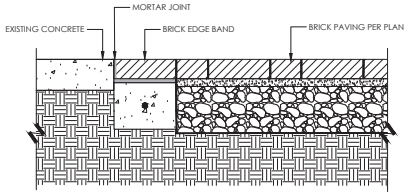
7 STAIR HANDRAIL
3/4" = 1'-0" RRM-0201-MI1-73



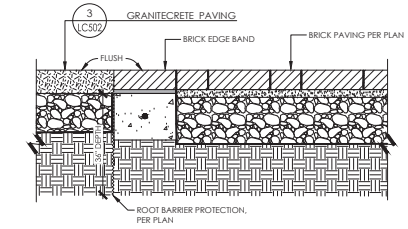
6 BRICK STEPS
3/4" = 1'-0" RRM-0201-MI1-71



EDGE BAND AT PLANTING



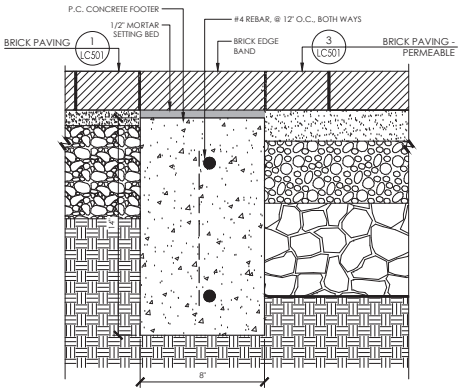
EDGE BAND AT EXISTING CONCRETE



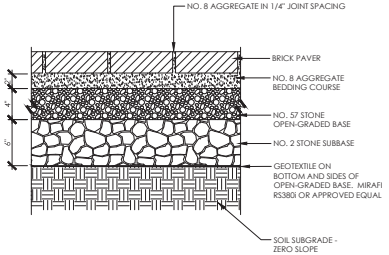
EDGE BAND AT GRANITECRETE

NOTE: CONCRETE FOOTING DEPTH BENEATH EDGE BAND VARIES PER PAVING TYPE.

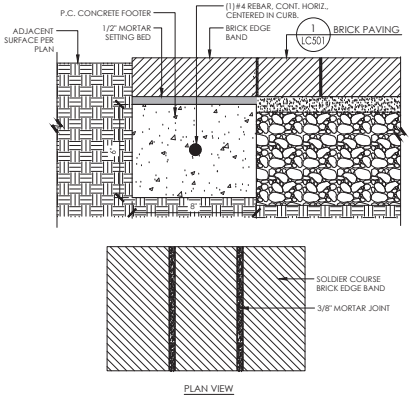
5 BRICK EDGE BAND CONDITIONS
1 1/2" = 1'-0" RRM-0201-MI1-87



4 BRICK EDGE BAND AT PERMEABLE BRICK
3" = 1'-0" RRM-0201-MI1-117

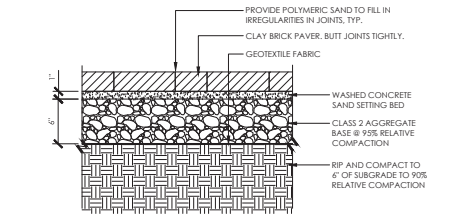


3 BRICK PAVING - PERMEABLE
1 1/2" = 1'-0" RRM-0201-MI1-116



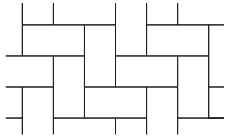
PLAN VIEW

2 BRICK EDGE BAND
3" = 1'-0" RRM-0201-MI1-88



NOTES:

1. TREAT EXISTING SOIL AND BACKFILL PRIOR TO PAVER INSTALLATION WITH GROWTH INHIBITOR.
2. SEAL ALL BRICK PAVING SURFACES WITH SEALER PER SPECIFICATIONS.
3. BRICK PIECES SMALLER THAN 2" ARE NOT PERMITTED FOR PAVING.



PLAN VIEW
HERRINGBONE PATTERN

1 BRICK PAVING
1 1/2" = 1'-0" RRM-0201-MI1-42

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

CONSTRUCTION DETAILS

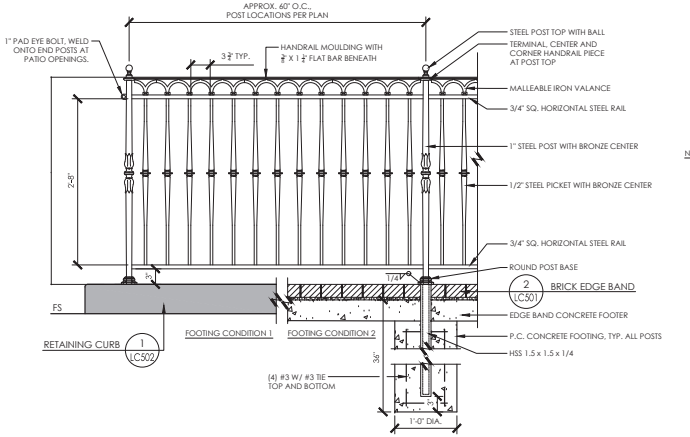
PROJECT TITLE:

SHEET TITLE:

100% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT
MELISSA L. PELTIER LIC. #5822
8.31.24
Renewal Date
STATE OF CALIFORNIA

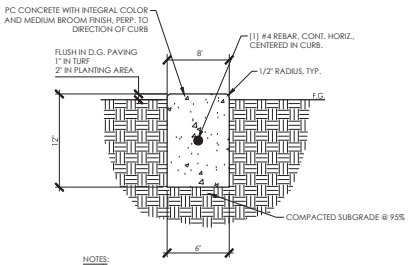
DESIGNED BY:	MARISA PELTIER
DRAWN BY:	MP
CHECKED BY:	LM
APPROVED BY:	MP
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	LC501



NOTES:
1. FENCE COMPONENTS ARE A MIX OF BRONZE AND STEEL. FOR COMPONENTS THAT HAVE BRONZE ACCENTS MECHANICALLY ATTACHED, BRONZE SHALL BE SEPARATED PRIOR TO SHOP PRIMING. REATTACH PRIOR TO WELDING.
2. PROVIDE CONTINUOUS WELDS ON ALL COMPONENT CONNECTIONS. REMOVE EXCESS SLAG AND GRIND ALL CORNERS SMOOTH.
3. ALL FENCE COMPONENTS THAT ARE STEEL ONLY SHALL BE PAINTED BLACK.
4. CONTRACTOR TO PROVIDE SHOP DRAWINGS SHOWING ALL HANDRAIL COMPONENTS AND LAYOUT PRIOR TO FABRICATION.
5. ALL FENCE COMPONENTS ARE AVAILABLE FROM WWW.JULIUSBLUM.COM. SEE SPECIFICATIONS FOR ITEM NUMBERS.

6 DECORATIVE PICKET FENCE
1" = 1'-0"

RRM-0201-MI1-82



NOTES:

A. PROVIDE CONTRACTION JOINT EVERY 10' MAX.

B. PROVIDE EXPANSION JOINT EVERY 20' MAX.

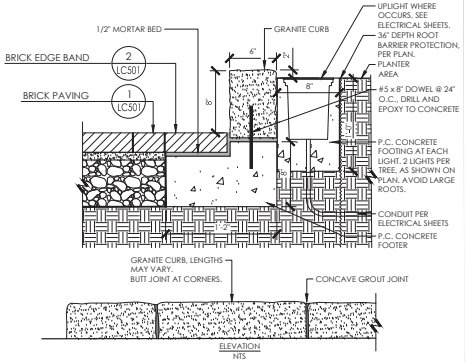
C. SPACE JOINTS EVENLY BETWEEN BEGINNING AND END POINTS.

D. TOP OF MOW CURB TO BE FLUSH WITH ADJACENT PAVING.

E. INTEGRAL COLOR SHALL BE CITY OF SLO STANDARD; DAVIS COLORS, ADOBE 61078.

4 8" MOW CURB
1 1/2" = 1'-0"

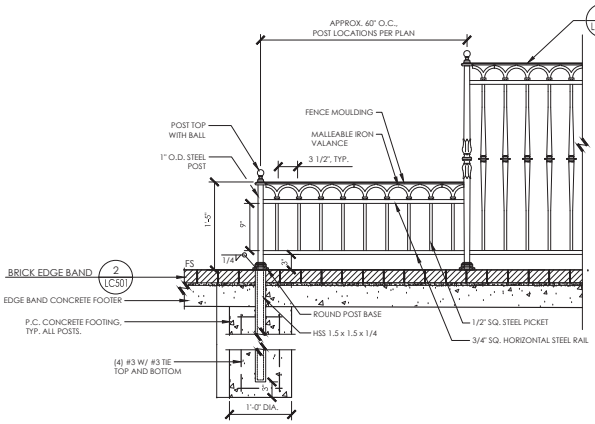
RRM-0201-MI1-61



NOTES:
1. GRANITE CURBS FOR THIS INSTALLATION ARE TO BE HISTORICAL CURBS LOCATED AT THE CITY CORP YARD. CURBS MAY DIFFER IN HEIGHT, LENGTH AND WIDTH. CONTRACTOR TO WORK WITH LANDSCAPE ARCHITECT TO SELECT APPROPRIATE PIECES. GRIND/CHIP/CUT CURBS AS NEEDED TO FORM A COHESIVE CURB INSTALLATION.

2 GRANITE PLANTER CURB
1 1/2" = 1'-0"

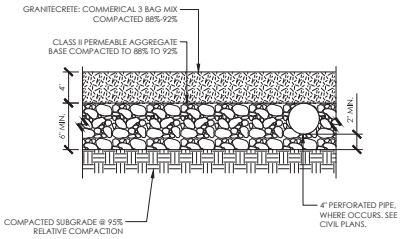
RRM-0201-MI1-85



NOTES:
1. FENCE COMPONENTS ARE A MIX OF BRONZE AND STEEL. FOR COMPONENTS THAT HAVE BRONZE ACCENTS MECHANICALLY ATTACHED, BRONZE SHALL BE SEPARATED PRIOR TO SHOP PRIMING. REATTACH PRIOR TO WELDING.
2. PROVIDE CONTINUOUS WELDS ON ALL COMPONENT CONNECTIONS. REMOVE EXCESS SLAG AND GRIND ALL CORNERS SMOOTH.
3. ALL FENCE COMPONENTS THAT ARE STEEL ONLY SHALL BE PAINTED BLACK.
4. CONTRACTOR TO PROVIDE SHOP DRAWINGS SHOWING ALL HANDRAIL COMPONENTS AND LAYOUT PRIOR TO FABRICATION.
5. ALLFENCE COMPONENTS ARE AVAILABLE FROM WWW.JULIUSBLUM.COM. SEE SPECIFICATIONS FOR ITEM NUMBERS.

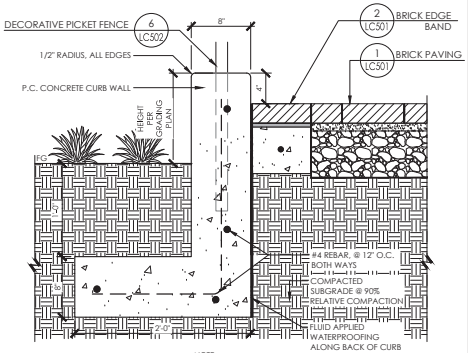
5 PLANTER FENCE
1" = 1'-0"

RRM-0201-MI1-107



3 GRANITECRETE PAVING
1 1/2" = 1'-0"

RRM-0201-MI1-26



NOTE:
1. CONCRETE CURB WALL SHALL BE INTEGRAL COLORED, SMOOTH TROWEL FINISH.
2. INTEGRAL COLOR SHALL BE CITY OF SLO STANDARD; DAVIS COLORS, ADOBE 61078.

1 RETAINING CURB
1 1/2" = 1'-0"

RRM-0201-MI1-40

MISSION PLAZA ENHANCEMENTS

CONSTRUCTION DETAILS

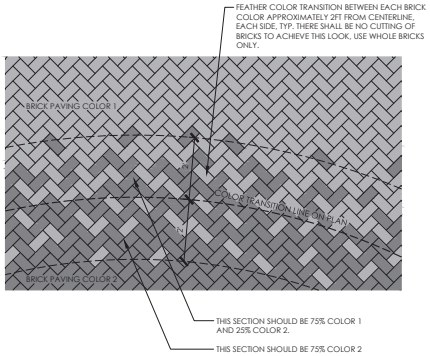
PROJECT TITLE:

SHEET TITLE:

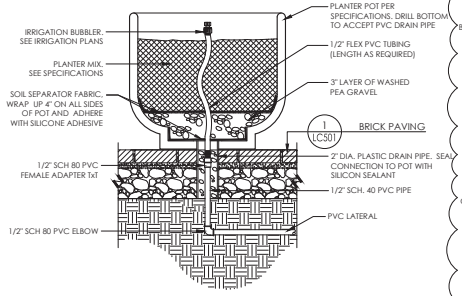
100% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT MARISA I. PELTIER LIC. #6482 — 8.31.24 Renewal Date — 7.12.23 Date — STATE OF CALIFORNIA

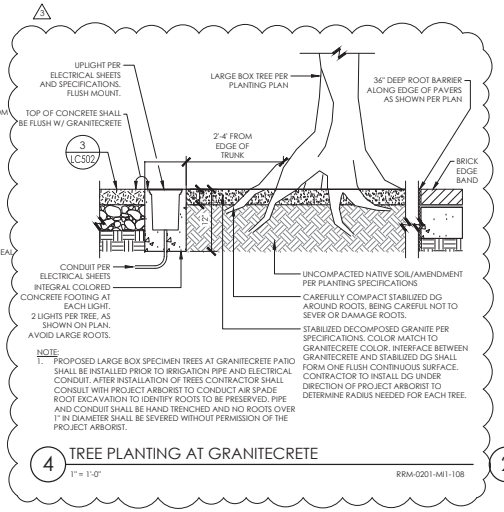
DESIGNED BY:	MARISA PELTIER
DRAWN BY:	MP
CHECKED BY:	LM
APPROVED BY:	MP
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	LC502



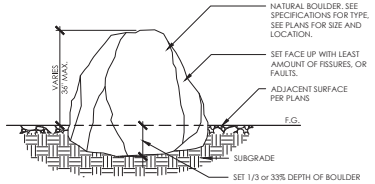
7 BRICK PAVING COLOR TRANSITION
1/2" = 1'-0" RRM-0201-MI1-106



6 POT IRRIGATION
1" = 1'-0" RRM-0201-MI1-48



4 TREE PLANTING AT GRANITECRETE
1" = 1'-0" RRM-0201-MI1-108



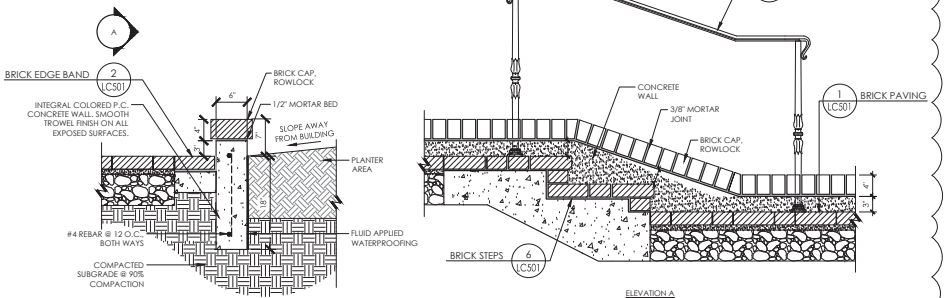
BOULDER SIZING:

PROVIDE QUANTITIES OF BOULDERS PER QUANTITIES SHOWN ON PLANS. BOULDER SIZES ARE LABELED ON PLANS PER THE SYMBOLS SHOWN BELOW.

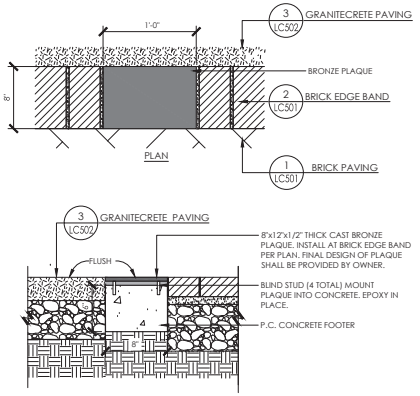
SYMBOL	SIZE RANGE (H, L & W)
A	36"
B	48"
C	60"

NOTES:
A. SUBMIT PHOTOGRAPHS OF BOULDERS FOR APPROVAL FROM OWNER PRIOR TO PURCHASING.
B. OWNER SHALL APPROVE FINAL PLACEMENT IN THE FIELD.

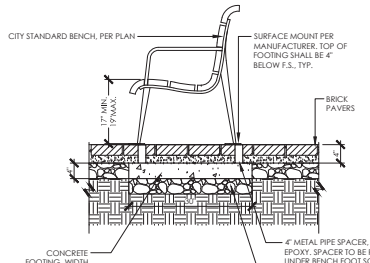
2 LANDSCAPE BOULDER
3/4" = 1'-0" RRM-0201-MI1-45



5 BRICK AND CONCRETE WALL
1" = 1'-0" RRM-0201-MI1-111



3 BRONZE PLAQUE
1 1/2" = 1'-0" RRM-0201-MI1-105



NOTE:
1. BENCHES SHALL BE CITY STANDARD, WITH (2) CENTER ARM RESTS.

1 BENCH AT BRICK PAVING
3/4" = 1'-0" RRM-0201-MI1-43

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

CONSTRUCTION DETAILS

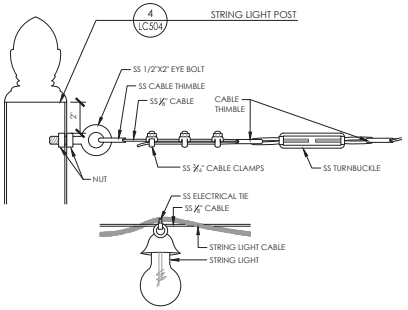
PROJECT TITLE:

SHEET TITLE:

100% CONSTRUCTION DOCUMENTS

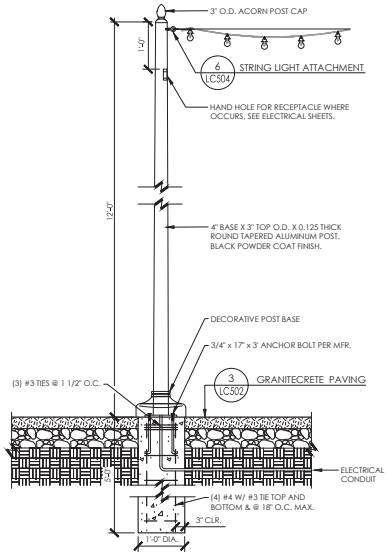
LICENSED LANDSCAPE ARCHITECT
MELISSA L. PELTIER LIC. #5822
8.31.24
Renewal Date
7.12.23
Date
STATE OF CALIFORNIA

DESIGNED BY:	MARISA PELTIER
DRAWN BY:	MP
CHECKED BY:	LM
APPROVED BY:	MP
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	LC503



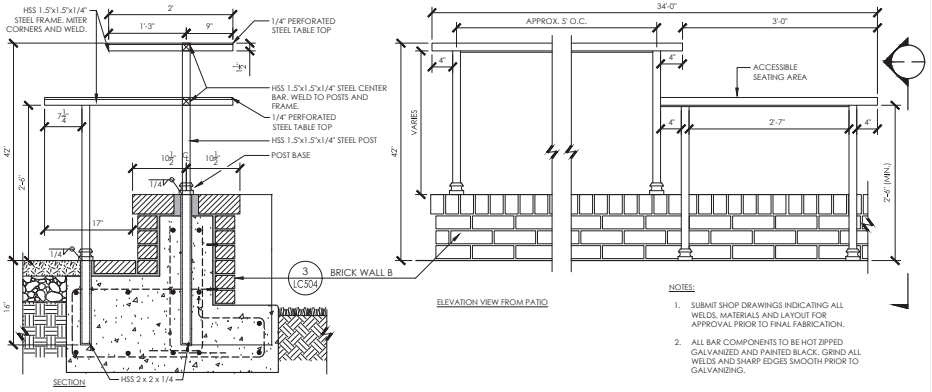
6 STRING LIGHT ATTACHMENT

1/4" = 1'-0" RRM-0201-MI1-53



4 STRING LIGHT POST

3/4" = 1'-0" RRM-0201-MI1-110

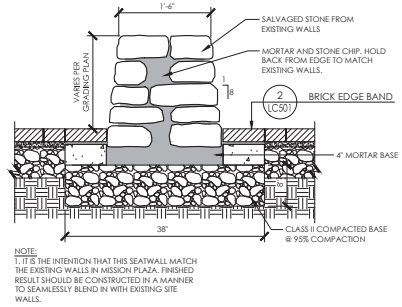


NOTES:

1. SUBMIT SHOP DRAWINGS INDICATING ALL WELDS, MATERIALS AND LAYOUT FOR APPROVAL PRIOR TO FINAL FABRICATION.
2. ALL BAR COMPONENTS TO BE HOT ZIPPED GALVANIZED AND PAINTED BLACK. GRIND ALL WELDS AND SHARP EDGES SMOOTH PRIOR TO GALVANIZING.

2 BAR COUNTER

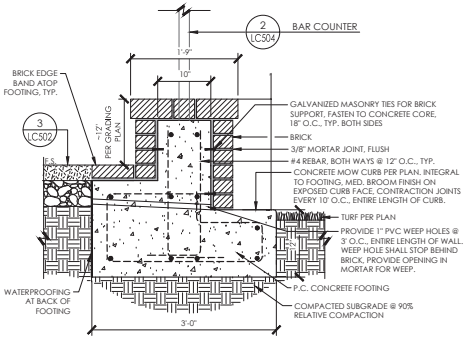
1" = 1'-0" RRM-0201-MI1-114



NOTE:
1. IT IS THE INTENTION THAT THIS SEATWALL MATCH THE EXISTING WALLS IN MISSION PLAZA. FINISHED RESULT SHOULD BE CONSTRUCTED IN A MANNER TO SEAMLESSLY BLEND IN WITH EXISTING SITE WALLS.

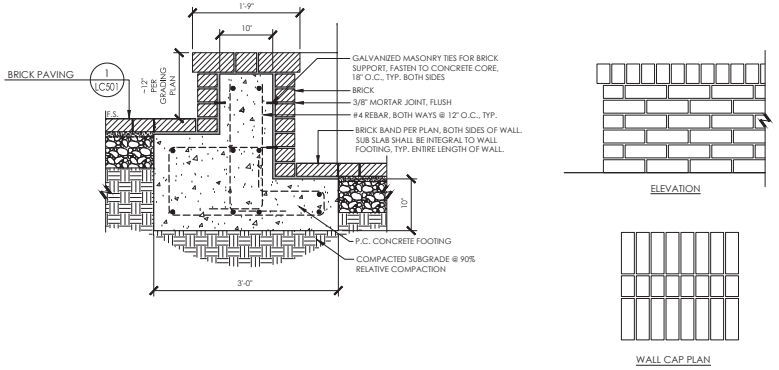
5 STONE SEATWALL

1" = 1'-0" RRM-0201-MI1-49



3 BRICK WALL B

1" = 1'-0" RRM-0201-MI1-113



1 BRICK WALL A

1" = 1'-0" RRM-0201-MI1-46

MISSION PLAZA ENHANCEMENTS

CONSTRUCTION DETAILS

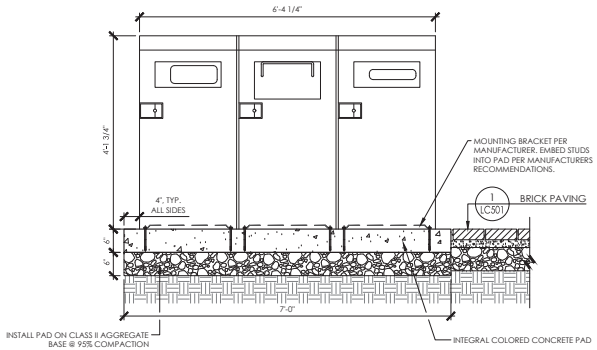
100% CONSTRUCTION DOCUMENTS

PROJECT TITLE:

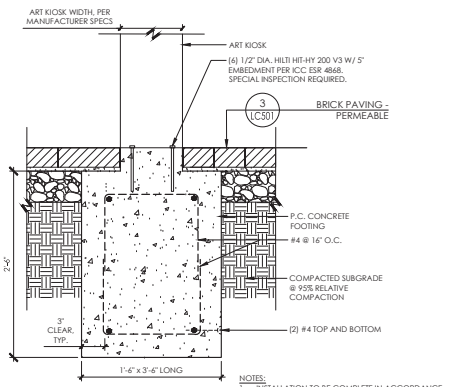
SHEET TITLE:

LICENSED LANDSCAPE ARCHITECT
MARISA L. PELTIER LIC. #6432
8.31.24
Renewal Date
7.12.23
Date
STATE OF CALIFORNIA

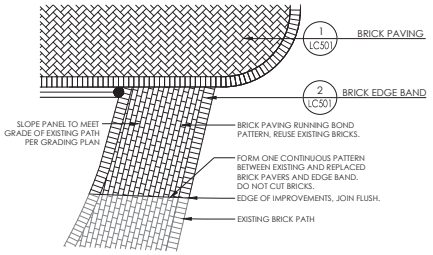
DESIGNED BY: MARISA PELTIER
DRAWN BY: MP
CHECKED BY: LM
APPROVED BY: MP
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO.: 91439-01
PLAN FILE NO. / LOCATION: 0256-03-CU20
SHEET NO.: LC504



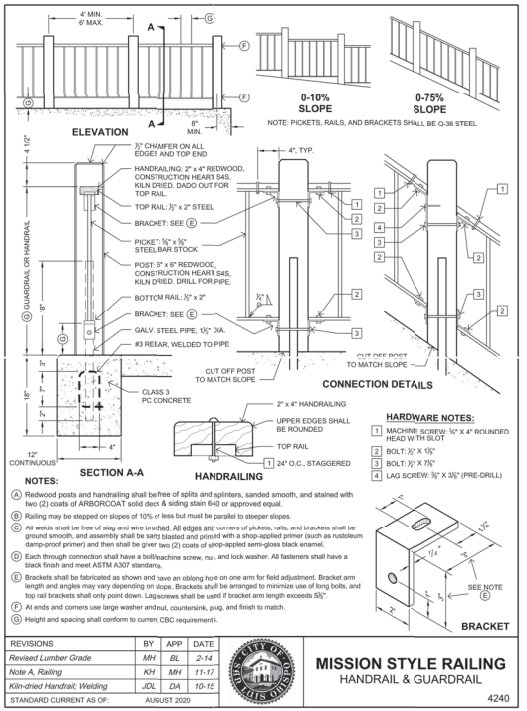
5 TRASH RECEPTACLE INSTALLATION
3/4" = 1'-0"
RRM-0201-MI1-120



4 ART KIOSK FOOTING
1 1/2" = 1'-0"
RRM-0201-MI1-119



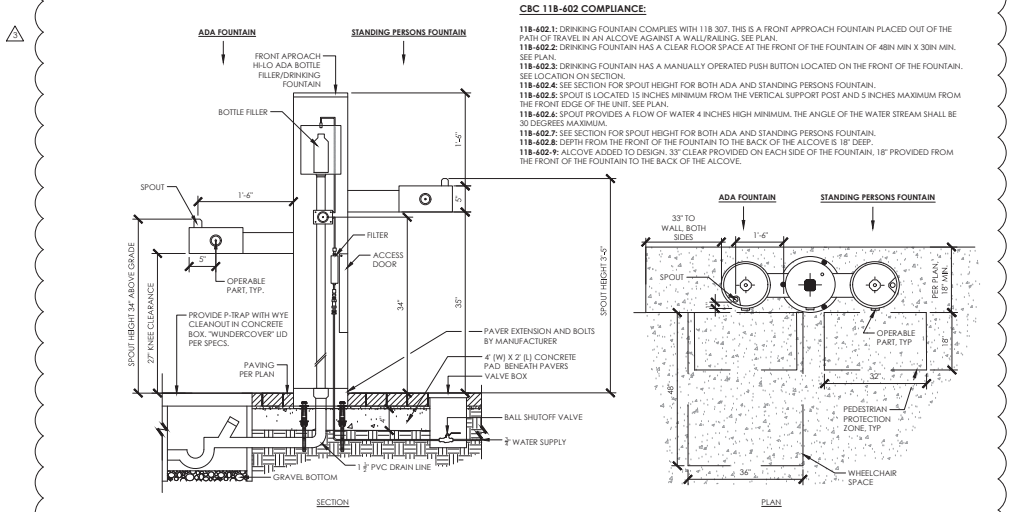
2 BRICK PAVING TRANSITION PANEL
3" = 1'-0"
RRM-0201-MI1-104



REVISIONS	BY	APP	DATE
Revised Lumber Grade	MH	BL	2-14
Note A, Railing	KH	MH	11-17
Kiln-dried Handrail; Welding	JDL	DA	10-15
STANDARD CURRENT AS OF:	AUGUST 2020		

MISSION STYLE RAILING
HANDRAIL & GUARDRAIL
4240

1 MISSION STYLE RAILING
1" = 1'-0"
RRM-0201-MI1-83



CBC 11B-602 COMPLIANCE:

11B-602.1: DRINKING FOUNTAIN COMPLIES WITH 11B 307. THIS IS A FRONT APPROACH FOUNTAIN PLACED OUT OF THE PATH OF TRAVEL IN AN ALCOVE AGAINST A WALL/RAILING. SEE PLAN.
11B-602.2: DRINKING FOUNTAIN HAS A CLEAR FLOOR SPACE AT THE FRONT OF THE FOUNTAIN OF 48IN MIN X 30IN MIN. SEE PLAN.
11B-602.3: DRINKING FOUNTAIN HAS A MANUALLY OPERATED PUSH BUTTON LOCATED ON THE FRONT OF THE FOUNTAIN. SEE LOCATION ON SECTION.
11B-602.4: SEE SECTION FOR SPOUT HEIGHT FOR BOTH ADA AND STANDING PERSONS FOUNTAIN.
11B-602.5: SPOUT IS LOCATED 15 INCHES MINIMUM FROM THE VERTICAL SUPPORT POST AND 5 INCHES MAXIMUM FROM THE FRONT EDGE OF THE UNIT. SEE PLAN.
11B-602.6: SPOUT PROVIDES A FLOW OF WATER 4 INCHES HIGH MINIMUM. THE ANGLE OF THE WATER STREAM SHALL BE 30 DEGREES MAXIMUM.
11B-602.7: SEE SECTION FOR SPOUT HEIGHT FOR BOTH ADA AND STANDING PERSONS FOUNTAIN.
11B-602.8: DEPTH FROM THE FRONT OF THE FOUNTAIN TO THE BACK OF THE ALCOVE IS 18" DEEP.
11B-602-9: ALCOVE ADDED TO DESIGN. 33" CLEAR PROVIDED ON EACH SIDE OF THE FOUNTAIN. 18" PROVIDED FROM THE FRONT OF THE FOUNTAIN TO THE BACK OF THE ALCOVE.

3 ACCESSIBLE DRINKING FOUNTAIN
1" = 1'-0"
RRM-0201-MI1-118

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

CONSTRUCTION DETAILS

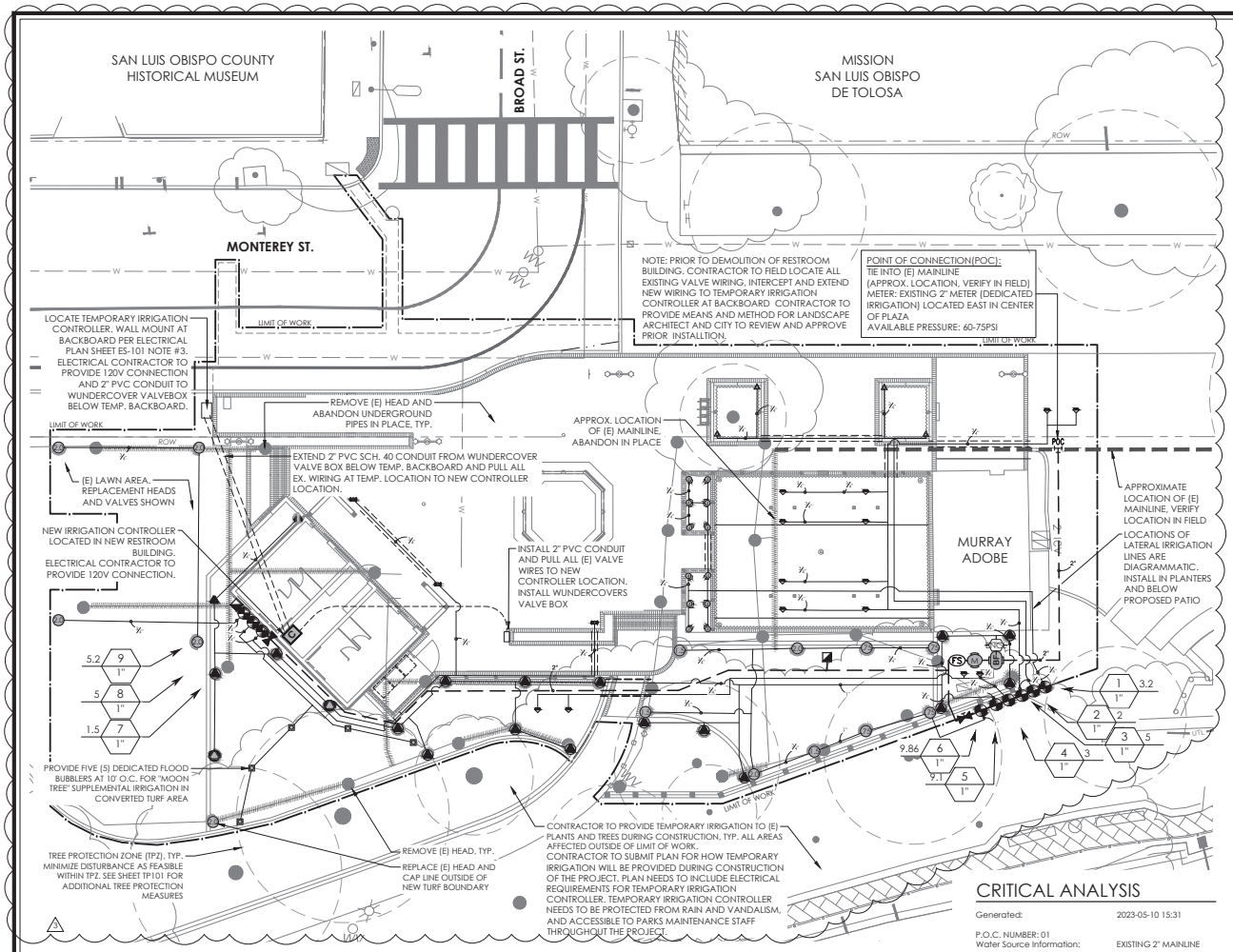
100% CONSTRUCTION DOCUMENTS

PROJECT TITLE:

SHEET TITLE:

LICENSED LANDSCAPE ARCHITECT
MEGAN L. PELTIER LIC. #6482
Mar 2024
8.31.24
Renewal Date
7.12.23
Date
STATE OF CALIFORNIA

DESIGNED BY: MARISA PELTIER
DRAWN BY: MP
CHECKED BY: LM
APPROVED BY: MP
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO.: 91439-01
PLAN FILE NO. / LOCATION: 0256-03-CU20
SHEET NO.: LC505



IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL	ARC	PSI	GPM	RADIUS	DETAIL
	HUNTER PROS-06-PRS30 04H	180	30	0.4	4'	8650/LI501
	HUNTER PROS-06-PRS30 04Q	90	30	0.2	4'	8650/LI501
	HUNTER MP CORNER PROS-12-PRS40-CV T	ADJ	40		14'	8650/LI501
	HUNTER MP STRIP PROS-12-PRS40-CV RST	RCS	40	0.22	5'x15'	8650/LI501
	HUNTER MP1000 PROS-12-PRS40-CV L	210-270	40		14'	8650/LI501
	HUNTER MP1000 PROS-12-PRS40-CV M	90-210	40		14'	8650/LI501
	HUNTER MP2000 PROS-12-PRS40-CV K	90-210	40		19'	8650/LI501
	HUNTER PCB 50	360	30	0.5	3'	6/LC503
	RAIN BIRD 1806-5 SERIES STREAM 5H-B	180	30	1	5'	8670/LI501
	RAIN BIRD 1806-5 SERIES STREAM 5Q-B	90	30	0.5	5'	8670/LI501
	RAIN BIRD RWS-M-B-C 1402	360	40	0.5	3'	1/LI502

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	GPM	RADIUS	DETAIL
P	HUNTER PGJ-06 .75 TURF ROTOR, 6IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	30	0.64	15'	8650/LI501
P	HUNTER PGJ-06 1.5 TURF ROTOR, 6IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	30	1.3	21'	8650/LI501
P	HUNTER PGJ-06 2.0 TURF ROTOR, 6IN. POP-UP. ADJUSTABLE AND FULL CIRCLE.	30	1.7	24'	8650/LI501

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	RAIN BIRD PEB 1IN., 1-1/2IN., 2IN. PLASTIC INDUSTRIAL VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION.	8620/LI501
	RAIN BIRD 44-LRC 1IN. BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, LOCKING THERMOPLASTIC RUBBER COVER, AND 2-PIECE BODY.	8630/LI501
	LANDSCAPE PRODUCTS INC. BGV 1/2", 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4" BRASS GATE VALVE, THREADED BONNET, NON-RISING STEM, PRESSURE RATED TO 200 PSI. SAME SIZE AS MAINLINE.	8640/LI501
M	BUCKNER-SUPERIOR 3200 1" NORMALLY CLOSED BRASS MASTER VALVE THAT PROVIDES DIRTY WATER PROTECTION AND NO MINIMUM FLOW FEATURE, WHICH ENSURES RELIABLE OPENING AND CLOSING OF THE VALVE IN EXTREME HIGH OR LOW FLOW SCENARIOS. AVAILABLE IN 3/4IN., 1IN.1-1/2IN.,2IN.,2-1/2IN. AND 3IN..	8550/LI502
BF	FEBCO 825Y 2" REDUCED PRESSURE BACKFLOW PREVENTER	8560/LI501
C	CALSENSE WALL MOUNT CONTROLLER EXISTING CALSENSE CONTROLLER TO BE RELOCATED AND REUSED.	8520/LI501
FS	FLOW SENSOR RAINMASTER BRASS/IMPELLER/PLASTIC FLOW SENSOR, CITY OF SLO SPEC	8550/LI502
MC	BACKFLOW ENCLOSURE LOCKABLE ENCLOSURE, PER CITY SPEC	8560/LI501
POC	POINT OF CONNECTION 2" EXISTING 2" MAINLINE	
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40	8610/LI501
	IRRIGATION MAINLINE: PVC SCHEDULE 40	8610/LI501
	PIPE SLEEVE: PVC SCHEDULE 40 SLEEVE SIZE SHALL BE 2X THE PIPE DIAMETER. EXTEND 18" BEYOND EDGE OF PAVING. PROVIDE SEPARATE SLEEVES FOR ALL CONTROL WIRES.	8610/LI501

Valve Callout
Valve Number
Valve Flow
Valve Size

CRITICAL ANALYSIS

Generated:	2023-05-10 15:31
P.O.C. NUMBER: 01	
Water Source Information:	EXISTING 2" MAINLINE
FLOW AVAILABLE	
Point of Connection Size:	2"
Flow Available	77.18 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	75 PSI
Pressure Available:	75 PSI
DESIGN ANALYSIS	
Maximum Multi-valve Flow:	40 GPM
Flow Available at POC:	77.18 GPM
Residual Flow Available:	37.18 GPM
Critical Station:	6
Design Pressure:	45 PSI
Friction Loss:	0.45 PSI
Fittings Loss:	0.04 PSI
Elevation Loss:	0 PSI
Loss through Valve:	1.7 PSI
Pressure Req. at Critical Station:	47.2 PSI
Loss for Fittings:	0.17 PSI
Loss for Main Line:	1.72 PSI
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	11.9 PSI
Loss for Master Valve:	10 PSI
Critical Station Pressure at POC:	70.9 PSI
Pressure Available:	75 PSI
Residual Pressure Available:	4.05 PSI

0 10 20 30 feet
1"=10'-0"

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

IRRIGATION PLAN

PROJECT TITLE:

SHEET TITLE:

100% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT
MARISA L. PELTIER LIC. #6482
Mark 2024
6.30.24
Renewal Date
7.12.23
Date
STATE OF CALIFORNIA

DESIGNED BY: MARISA PELTIER
DRAWN BY: JM
CHECKED BY: MP
APPROVED BY: MP
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO.: 91439-01
PLAN FILE NO. / LOCATION: 0256-03-CU20
SHEET NO.: LI101

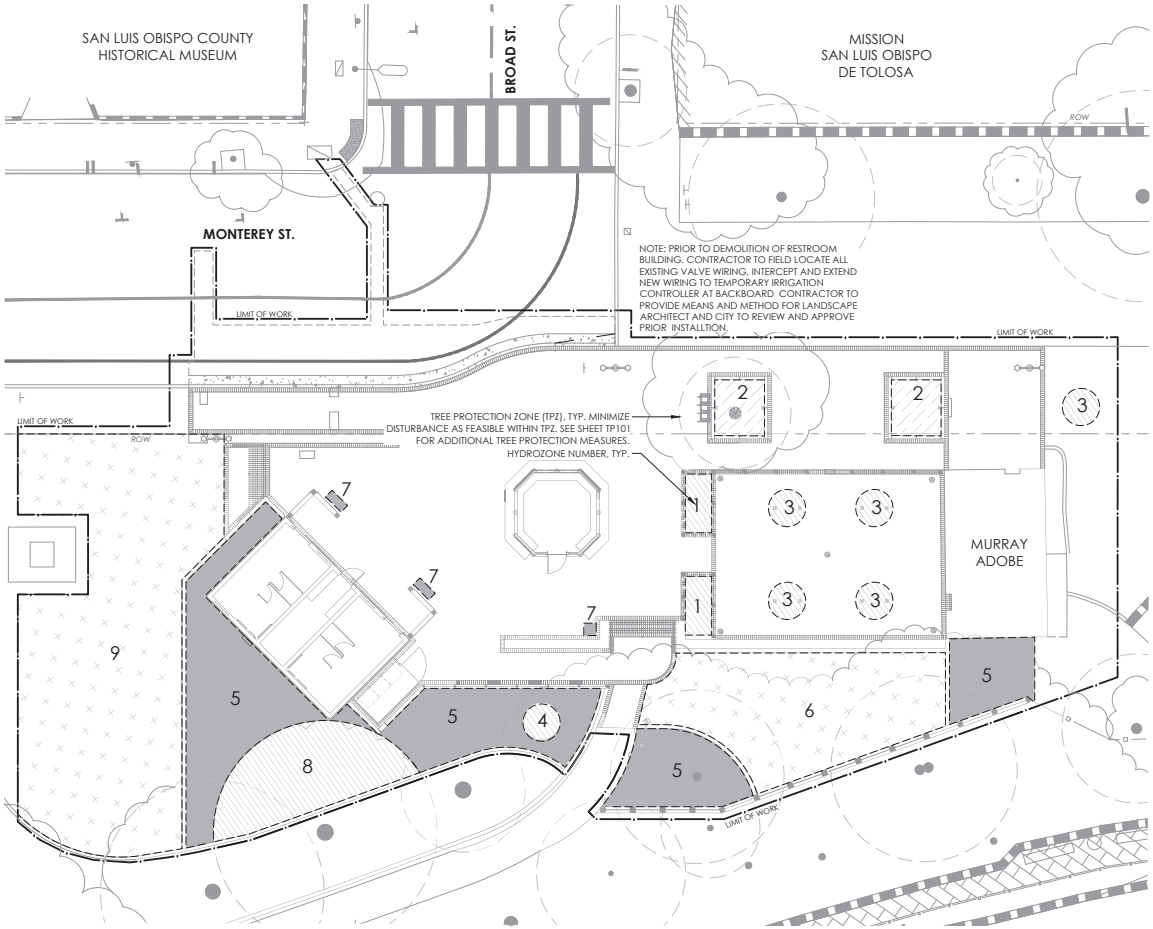
WATER USE CALCULATIONS

San Luis Obispo
Maximum Applied Water Allowance / Estimated Total Water Use

Non-Residential	
43.80	ET_o (inches/year)
946	Overhead Landscape Area (ft^2)
558	Drip Landscape Area (ft^2)
2507	SLA (ft^2)
4,011	ft^2

Hydrozone	Plant Water Use Type (low, moderate, high)	Plant Factor (PF)	Hydrozone Area (HA) (ft^2)	Enter Irrigation Type	(PF x HA (ft^2))/IE
Zone 1	Low	0.11	80	Spray Irrigation	11.73
Zone 2	Very Low	0.01	144	Spray Irrigation	1.92
Zone 3	Moderate	0.31	125	Drip Irrigation	47.84
Zone 4	Moderate	0.31	50	Drip Irrigation	19.14
Zone 5	Low	0.11	722	Spray Irrigation	105.89
Zone 6	High	0.61	757	SLA	
Zone 7	Low	0.11	15	Drip Irrigation	2.04
Zone 8	Moderate	0.31	368	Drip Irrigation	140.84
Zone 9	High	0.61	1750	SLA	
Zone 10					
Zone 11					
Zone 12					
Zone 13					
Zone 14					
Zone 15					
Zone 16					
Zone 17					
Zone 18					
Zone 19					
Zone 20					
		HA	4,011		329.40
		Total LA	4,011		

MAWA=	86,459.3	ETWU complies with MAWA
ETWU=	77,025.2	Gallons
	103.0	HCF (Hundred Cubic Feet) per year
	0.236	Acre-feet per year



HYDROZONE SCHEDULE

	VERY LOW - SHRUBS AND TREES	144 SQ FT
	LOW - SHRUBS AND TREES	817 SQ FT
	MODERATE - SHRUBS AND TREES	543 SQ FT
	HIGH - TURF	2,507 SQ FT

0 10 20 30 feet
1"=10'-0"

MISSION PLAZA ENHANCEMENTS

HYDROZONE PLAN

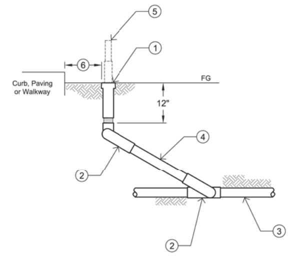
100% CONSTRUCTION DOCUMENTS

PROJECT TITLE:

SHEET TITLE:

LICENSED LANDSCAPE ARCHITECT
MARISA L. PELTIER LIC. #6423
8.31.24
Renewal Date
7.12.23
STATE OF CALIFORNIA

DESIGNED BY:	MARISA PELTIER
DRAWN BY:	JM
CHECKED BY:	MP
APPROVED BY:	MP
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	LI201



GENERAL NOTES:

A. Where system is or has the potential to hook up to non-potable water, rotor head shall have a Reclaimed Water cover.

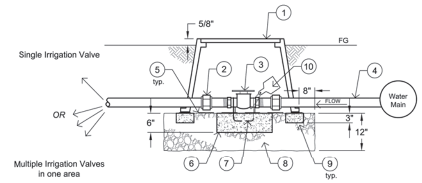
B. Pipe material shall be Class 200 PVC unless otherwise noted.

INSTALLATION NOTES:

1. Rotor or Spray Pop-up or Hi-pop Body, set even with finished grade.
2. Triple Swing Joint, Marlex (3)
3. Irrigation Lateral Line
4. Schedule 80 Nipple
5. Pop-up height to be above matured plant material height.
6. Distance must be 2 feet but may be reduced to 2 inches where overspray to adjacent impervious surface runs off to vegetated area.

REVISIONS	BY	APP	DATE
Added note 6	MH	BL	1-14
Revise offset from curb	DVB	BL	11-07
Pop-up height (Note 5)	JDL	BL	6-12
STANDARD CURRENT AS OF:	AUGUST 2020		

POP-UP HEAD 8650



GENERAL NOTES:

A. Isolation valves shall be installed for all irrigation valves.

B. Locate valves in shrub areas whenever possible.

C. Valve boxes shall be a maximum of 12" from walkways or curbs.

D. Valve boxes shall be set parallel to walkways or curbs.

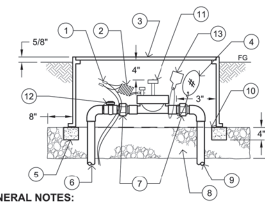
E. Valve size and pipe size must be equal.

INSTALLATION NOTES:

1. Plastic Valve Box with bolt-down lid. Bolts to be stainless steel: ENGRAVE "IO" ON LID.
   Carson Industries 1419-3B (purple) for Recycled Water Valves up to 2"
   Carson Industries 1324-3B (purple) for Recycled Water Valves 2½" and larger
2. PVC Union
3. Brass Ball Valve
4. Schedule 40 Pressure Line
5. Galvanized Cloth set under box: ½" grid
6. Concrete block below valve, extending 6" beyond outside dimensions of valve
7. #10 Reinforcing Bar looped over valve - Only for valves 2½" and larger
8. Gravel: ¾" to 1½" in size
9. Cement Blocks or Brick continuous for box support
10. Attach Recycled Water Warning Tag per Engineering Standard 8610 when used for recycled water.

REVISIONS	BY	APP	DATE
Add PVC Union; drafting edits	JDL	BL	6-12
Revised Notes and Detail	MH	BL	10-05
Revise Note 1; Add Note 10	SR	BL	3-06
STANDARD CURRENT AS OF:	AUGUST 2020		

ISOLATION VALVE 8640



GENERAL NOTES:

A. Locate valves in shrub areas whenever possible.

B. Valve boxes shall be a maximum of 12" from walkways or curbs.

C. Valve boxes shall be set parallel to walkways or curbs.

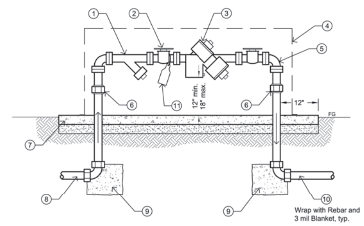
D. One valve per box.

INSTALLATION NOTES:

1. Connector:
   King One Step Model 70-566 30 Volt
   Rain Bird Snaptite with sealer #ST-03 Grey PT-S5
2. 14 gauge Direct Burial Wire with 12" expansion coil (1- valve, 1- common)
3. Plastic Valve Box with bolt-down lid, bolts to be stainless steel: ENGRAVE VALVE STATION NUMBER ON LID.
   Carson Industries 1419-3B (purple) for Recycled Water Valves up to 2"
   Carson Industries 1324-3B (purple) for Recycled Water Valves 2½" and larger
4. 2" diameter aluminum or plastic Valve Tag, attach with non-ferrous wire, engrave with valve station number.
5. Cement Block (4 total) under each box corner
6. Irrigation Lateral Line
7. PVC Union
8. Gravel - ¾" to 1½" in size
9. Irrigation Pressure Line
10. Galvanized Cloth set under box - ½" grid
11. Control Valve: Irritrol 100 Series
12. PVC Ball Valve
13. Attach Recycled Water Warning Tag per Engineering Standard 8810 when used for recycled water.

REVISIONS	BY	APP	DATE
Edit Note 11, add PVC Union	JDL	BL	6-12
Add note 12	KH	MH	6-20
Revise Note 2	SR	BL	6-11
STANDARD CURRENT AS OF:	AUGUST 2020		

ELECTRIC CONTROL VALVE & BOX 8620



GENERAL NOTES:

A. All pipe shall be schedule copper or brass unless otherwise specified.
B. Dissimilar metals shall be separated by an approved dielectric coupling.
C. Service assembly shall be installed as the first assembly after the meter.
D. Device shall be located within 10' of water meter and no connection or tees are allowed between the meter and the assembly.

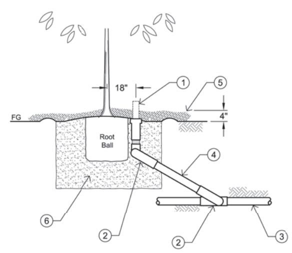
INSTALLATION NOTES:

1. WYE STRAINER: Barrel position 45° from horizontal for below ground installations
2. BALL VALVE: Brass
3. FOR POTABLE SERVICE: Backflow Assembly (reduced pressure type), FEBCO/WILKINS
   FOR RECYCLED SERVICE: Pressure Regulator. Where there is no backflow assembly, place wye strainer and regulator in paired boxes installed per Engineering Standard 8550.
4. LOCKING ENCLOSURE: Secure to pad per manufacturer's direction. Enclosure shall not be field-painted. All coatings shall be completed by manufacturer. Model: Strongbox #SBBC Series, expanded metal, dark green powder-coated, low profile, smooth touch, vandal resistant
5. ELBOW
6. UNION: Brass
7. CONCRETE PAD: Class 3, 60" x 24" x 4" on 14" Class 3 Base, with 2% cross-slope for drainage
8. SUPPLY LINE
9. THRUST BLOCK
10. IRRIGATION PRESSURE LINE
11. RECYCLED WATER WARNING TAG: Attach per Engineering Standard 8810 when used for recycled water.

BACKFLOW DEVICES SHALL BE INSPECTED BY THE LOCAL DEPARTMENT OF HEALTH SERVICES AND THE CITY OF SAN LUIS OBISPO UTILITIES DEPARTMENT

REVISIONS	BY	APP	DATE
Revised Note 1	MH	BL	11-09
Revised title; Drafting edits	JDL	MH	10-12
Revised Notes 3, 4 & 5	DVB	BL	10-07
STANDARD CURRENT AS OF:	AUGUST 2020		

IRRIGATION SERVICE ASSEMBLY 8560



GENERAL NOTES:

A. Where system is or has the potential to hook up to non-potable water, rotor head shall have a Reclaimed Water cover.

B. Pipe material shall be Class 200 PCV.

C. See Engineering Standards for tree planting.

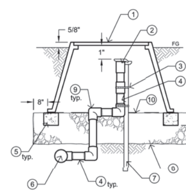
D. Minimum of one (1) bubbler per tree or as specified on the plans.

INSTALLATION NOTES:

1. Bubbler Pop-up, set even with finished grade: Rain Bird
2. Triple Swing Joint: Marlex (3)
3. Irrigation Laterel Line
4. Schedule 80 PVC Nipple
5. 4" deep Mulch
   5 gallon tree: 36" diameter around tree
   15 gallon tree: 48" diameter around tree
   24" box: 72" diameter around tree
6. Backfill per Standard Specifications

REVISIONS	BY	APP	DATE
New Standard	BL	JDW	1-04
Drafting edits	JDL	MH	6-13
Delete Note 7	SR	BL	
STANDARD CURRENT AS OF:	AUGUST 2020		

TREE BUBBLER 8670



GENERAL NOTES:

A. Locate valves in shrub areas whenever possible.

B. Valve boxes shall be a maximum of 12" from walkways or curbs.

C. Valve boxes shall be set parallel to walkways or curbs.

D. One valve per box.

E. Areas where recycled water may be used shall have purple box covers.

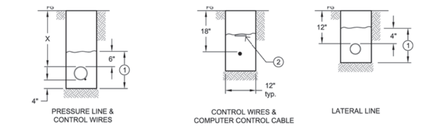
F. Pipe shall be Schedule 40 PVC unless otherwise noted.

INSTALLATION NOTES:

1. Round Plastic Valve Box: Carson #910-12B ENGRAVE "QC" ON LID.
2. Quick Coupler Valve: Rain Bird #44. use #44NP for Recycled Water
3. Stainless Steel Clamp
4. Schedule 80 Nipple
5. Cement Block (4 total) under each box corner when box is located in turf area
6. Tee connected to irrigation pressure line
7. ¼" x 1" x 30" Angle Iron
8. Gravel: ¾" to 1½" in size
9. Schedule 80 Ell
10. Galvanized Cloth set under box, ½" grid

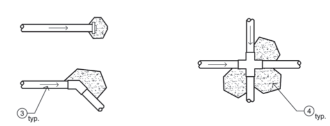
REVISIONS	BY	APP	DATE
New Standard	BL	JDW	1-04
Revise Notes E and 2	SR	BL	3-06
Drafting edits	JDL	MH	6-13
STANDARD CURRENT AS OF:	AUGUST 2020		

QUICK COUPLER VALVE and BOX 8630



X = 18" for sizes 2" and smaller in planter areas
X = 24" for sizes over 2" and conduit under pavement
X = 24" for conduit for high voltage wiring

TRENCH DETAILS



THRUST BLOCKS

GENERAL NOTES:

A. Pressure lines shall be per the Standard Specifications unless otherwise noted.

B. Lateral lines shall be Class 200 unless otherwise noted.

C. Control wires shall be taped together at 5' intervals. Where control wires share a trench with pressure lines, they shall be placed below the 4 o'clock and 8 o'clock position under the pressure line.

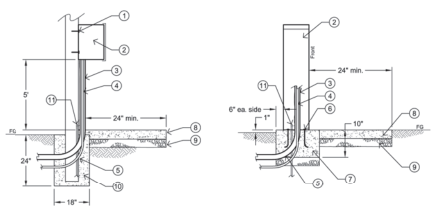
D. Thrust blocks shall be installed at mainline turns, elbows, tees, caps, plugs, changes in direction, at terminal points of all rubber gasket piping and at any other additional points shown on the plans.

INSTALLATION NOTES:

1. Select backfill compacted to 90%, with native above to grade compacted to 85%. Native material to be fine earth material free from clods, rocks, and other large matter. If existing soil is not acceptable, the Contractor shall import soil as backfill.
2. 3" Detectable Marker Tape marked "WATER" or "NON-POTABLE WATER" depending on the irrigation supply source. Thor Enterprises (distributed by T. Christy Enterprises)
3. Direction of flow
4. Class 3 PCC Thrust Block, sized as needed for pressure.

REVISIONS	BY	APP	DATE
New Standard	BL	JDW	1-04
Revise Lateral Line detail	DVB	BL	11-08
Revise Installation Note 1	JDL	BL	5-12
STANDARD CURRENT AS OF:	AUGUST 2020		

TRENCH DETAIL & THRUST BLOCKS 8610



GENERAL NOTES:

A. All exposed conduit shall be Schedule 80.

B. Install Controller and Telemetry equipment required for the site as specified by the City Parks Maintenance Division.

C. Attach Recycled Water adhesive warning decal per Engineering Standard 8810 to inside and outside of cabinet door when used to control recycled water.

NOTES:

1. ⅜" Ø x 4" Lag Bolts. Connect to building wall or, where wall is not available, mount to 4" x 6" Pressure Treated Douglas Fir post.
2. Controller / Stainless Steel Enclosure
3. 2" Ø PVC Conduit w/ Irrigation Control Wires
4. ¾" Ø PVC Conduit w/ 120 volt Power Source
5. PVC Sweep Ells for Conduit
6. 5/32" - ¼" Ø Anchor Bolts
7. Class 3 PCC Footing
8. 4" Class 3 PCC Pad
9. 4" Class 2 Aggregate Base
10. Class 3 PCC Post Footing when Post Mount is used
11. Ground Rod

REVISIONS	BY	APP	DATE
Drafting edits	JDL	MH	6-13
Add Note 12	SR	BL	3-06
Delete Note 12	DVB	BL	11-06
STANDARD CURRENT AS OF:	AUGUST 2020		

IRRIGATION CONTROLLER 8520

PROJECT TITLE: **MISSION PLAZA ENHANCEMENTS**

SHEET TITLE: IRRIGATION DETAILS

100% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT — MARISA L. PELTIER LIC. #6432 — Signature — 8.31.24 Renewal Date — 7.12.23 Date — STATE OF CALIFORNIA

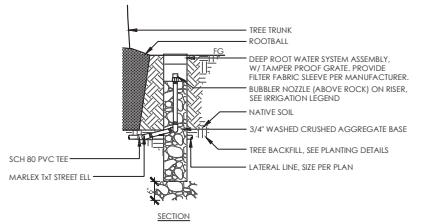
DESIGNED BY:	MARISA PELTIER
DRAWN BY:	JM
CHECKED BY:	MP
APPROVED BY:	MP
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	LI501

IRRIGATION NOTES

1. CONTRACTOR SHALL SLEEVE UNDER PAVING PER PLANS AND SPECIFICATIONS. TWICE(2X) THE SIZE OF PIPE ENCLOSED. EXTEND ALL SLEEVES 18" BEYOND EDGE OF PAVING
2. IRRIGATION PLAN IS DIAGRAMMATIC. FINAL LOCATION OF PIPING WILL BE DETERMINED AT THE TIME OF INSTALLATION. MAINLINE AND LATERALS SHALL BE PLACED IN THE SAME TRENCH WHEN POSSIBLE. ALL Q.C. VALVES ARE TO BE LOCATED 12" FROM SIDEWALKS, CURBS, ASPHALT & CONCRETE SURFACES.
3. ALL EQUIPMENT REQUIRED BUT NOT SPECIFIED ON THE DRAWING, TO COMPLETE THE WORK, SHALL BE PROVIDED BY THE IRRIGATION CONTRACTOR.
4. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND/OR SPECIFICATIONS.
5. CONTRACTOR SHALL COORDINATE POWER TO CONTROLLERS AND DEDICATE ONE (1) 20 AMP BREAKER FOR EACH CONTROLLER. THE AUTHORIZED REPRESENTATIVE SHALL REVIEW CONTROLLER LOCATIONS PRIOR TO INSTALLATION. 120 VOLT SERVICE AND HOOK-UP TO THE CONTROLLER SHALL BE COMPLETED BY A LICENSED ELECTRICAL CONTRACTOR. THIS COST IS TO BE A PART OF THE LANDSCAPE CONTRACTOR'S BID.
6. CONTRACTOR SHALL FAMILIARIZE THEMSELF WITH THE PLANS AND SITE CONDITIONS PRIOR TO BEGINNING WORK. SHOULD CONFLICTING INFORMATION BE FOUND ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE PROJECT LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH THE WORK IN QUESTION.
7. DO NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY AT NO EXPENSE TO THE OWNER.
8. CONTRACTOR SHALL ADJUST HEADS AS NEEDED TO MINIMIZE OVERSPRAY ONTO HARDSCAPE AREAS.
9. SPLICING OF 24 VOLT WIRES WILL NOT BE PERMITTED EXCEPT IN VALVE BOXES. LEAVE A 24" COIL OF EXCESS WIRE AT EACH SPLICE. LABEL ALL WIRES W/ WATERPROOF MARKERS AT ALL SPLICES AND VALVE MANIFOLDS.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL MATERIAL APPEARING ON PLAN.
11. ALL EXISTING UTILITIES, WATER LINES AND FIRE HYDRANTS SHALL REMAIN CONNECTED AND IN FULL CONTINUOUS OPERATION DURING AND FOLLOWING ALL CONTRACT WORK.
12. LANDSCAPE CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR PRIOR TO DEMOLITION OR PROTECTION OF EXISTING MAINLINE AND CONTROLLER WIRE FOR FUTURE USE.
13. IF THE INTENT IS TO DEMO ANY IRRIGATION EQUIPMENT IN NEW CONSTRUCTION AREA, LANDSCAPE CONTRACTOR SHALL SUPPLY ALL NEW MAINLINE AND CONTROL WIRE TO NEW REMOTE CONTROL VALVE AS DESIGNED PER THIS PLAN, TYPICAL.
14. ALL NEW IRRIGATION BOXES, AND ADDITIONAL BOXES NECESSARY FOR RETROFITS SHALL BE LOCATED IN PLANTING AREAS 18" MIN. AWAY FROM ADJACENT PAVING AND 5' MIN. AWAY FROM IMMEDIATE BUILDING ENTRIES.
15. CONTRACTOR SHALL NOT INSTALL ANY PLANTING UNTIL THE FOLLOWING ARE COMPLETED: 1. THE IRRIGATION SYSTEM SHALL BE FULLY OPERATIONAL. 2. HYDROSTATIC PRESSURE TESTS SHALL BE PERFORMED ON MAIN AND LATERAL LINES. 3. ALL ZONES SHALL PASS A COVERAGE TEST. 4. CONTROLLERS SHALL BE FULLY OPERATIONAL.
16. CITY IRRIGATION CONTROLLER WIRES SHALL ALL BE LOCATED WITHIN ELECTRICAL CONDUIT AND NOT DIRECT BURIED, TYPICAL.

IRRIGATION SPECIFICATIONS

REFER TO DIVISION III OF THE CURRENT CITY OF SAN LUIS OBISPO STANDARD SPECIFICATIONS & ENGINEERING STANDARDS.



NOTES :

A. USE PIPE TEFLON TAPE ON ALL PIPE THREADS. TIGHTEN THREADS UNTIL MODERATELY SNUG (DO NOT OVERTIGHTEN).

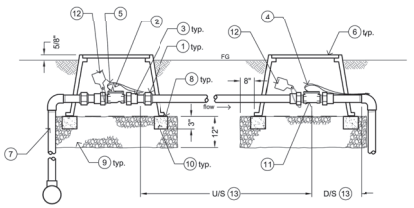
B. LOCATE TREE BUBBLER ON ROOT BALL SIDE OF ROOT CONTROL BARRIERS.

C. WHERE POSSIBLE, LOCATE TREE BUBBLER AWAY FROM ADJACENT HARDSCAPE AREAS TO DISCOURAGE ROOT GROWTH UNDER PAVING.

1 DEEP ROOT TREE BUBBLER

3/4" = 1'-0"

RRM-0201-MI1-59



GENERAL NOTES:

A. Locate valves in shrub areas whenever possible.
B. Valve boxes shall be a maximum of 12" from walkways or curbs.
C. Valve boxes shall be set parallel to walkways or curbs.
D. Flow meter size and pipe size must be equal.
E. No splices are allowed in wiring except at connectors shown (in box.)

INSTALLATION NOTES:

1. PVC Union
2. Master Valve - normally open
3. PVC Male Adapter
4. Flow Sensor Specialized Shielded Cable (EV-CAB-SEN) (1-Flow Meter, 1-Common)
   - Maximum distance between meter and controller is 2000' -
5. 14 gauge Master Valve Controller Wires (1-Valve, 1-Common)
6. Plastic Valve Box with bolt down lid. Belts to be stainless steel.
   Carson Industries 1419-3B (Purple) for Recycled Water Valves up to 2"
   Carson Industries 1324-3B (Purple) for Recycled Water Valve 2½" and larger
   ENGRAVE "MV" AND "FS" ON LID.
7. Irrigation Pressure Mainline
8. Galvanized Cloth set under box - ½" Grid
9. Gravel - ¾" to 1½" in size
10. Cement Blocks or Brick continuous for box support
11. Flow Sensor - RainMaster
12. Attach Recycled Water Warning Tab per Engineering Standard 8810 when used in recycled water system.
13. U/S distance equals ten (10) times the Flow Meter size.
    D/S distance equals five (5) times the Flow Meter size.

REVISIONS	BY	APP	DATE
Edit Note 11, add PVC Union	JDL	BL	6-12
Revise Notes 2 and 11	MH	BL	11-09
Update Note s 4 and 5	SR	BL	8-11
STANDARD CURRENT AS OF:	AUGUST 2020		

MASTER VALVE & FLOW SENSOR

8550

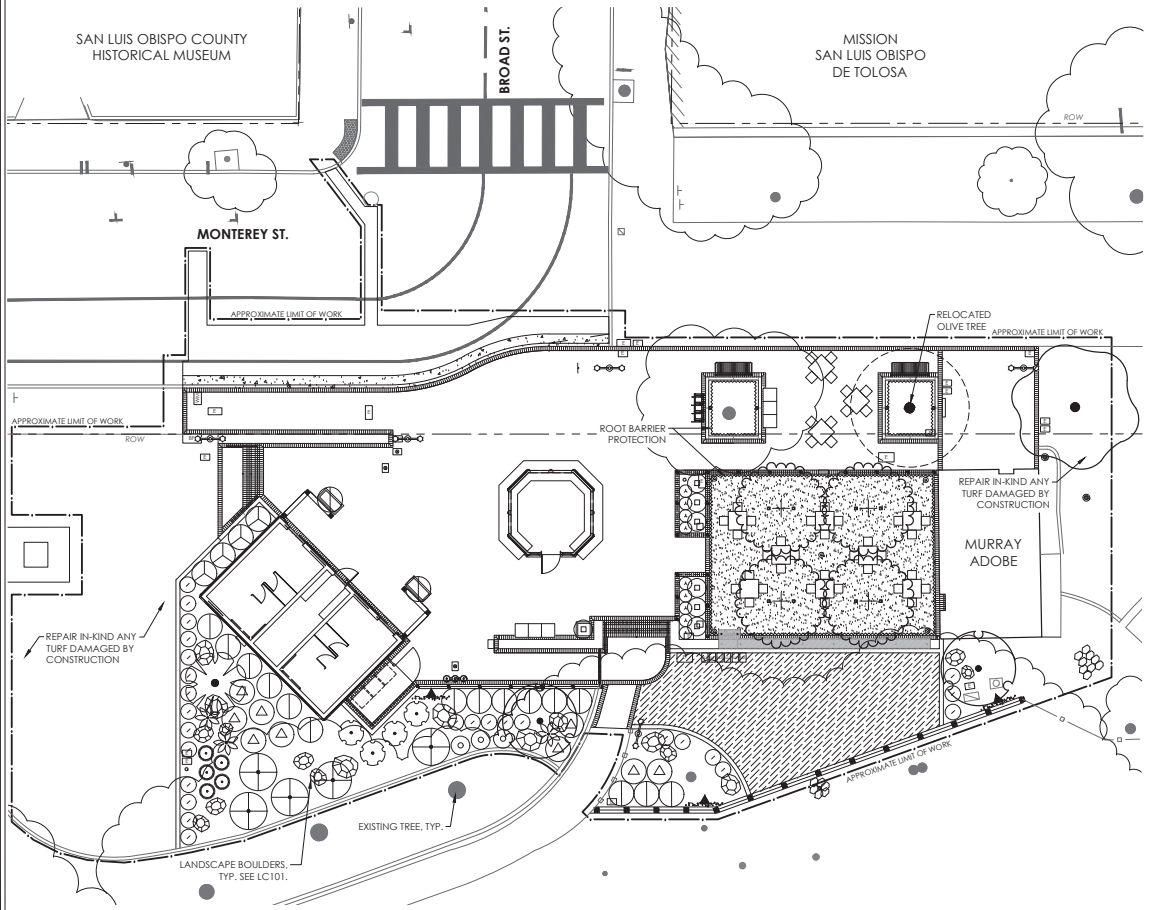
PROJECT TITLE:
MISSION PLAZA ENHANCEMENTS

SHEET TITLE:
IRRIGATION DETAILS, NOTES, AND SPECIFICATIONS

100% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT
MARISA L. PELTIER LIC. #6482
8.31.24
Renewal Date
7.12.23
Date
STATE OF CALIFORNIA

DESIGNED BY: MARISA PELTIER
DRAWN BY: JM
CHECKED BY: MP
APPROVED BY: MP
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
PLAN FILE NO. / LOCATION 0256-03-CU20
SHEET NO. LI502



PLANTING SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS
	1	ALOE 'HERCULES'	TREE ALOE	24"BOX	LOW
	2	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY EASTERN REDBUD	48"BOX	MODERATE
	1	JACARANDA MIMOSIFOLIA	JACARANDA MULTI-TRUNK	60"BOX	MODERATE
	4	OLEA EUROPAEA 'SWAN HILL' TM	MULTI-TRUNKED SWAN HILL OLIVE	96"BOX	LOW

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS
	5	ACACIA COGNATA 'COUSIN ITT'	COUSIN ITT LITTLE RIVER WATTLE	5 GAL	LOW
	3	AGAVE OVATIFOLIA	WHALE'S TONGUE AGAVE	5 GAL	LOW
	9	ANIGOZANTHOS 'BIG RED'	RED KANGAROO PAW	5 GAL	LOW
	3	BOUGAINVILLEA X 'BARBARA KARST'	BARBARA KARST BOUGAINVILLEA	15GA STAKED	LOW
	4	BOUGAINVILLEA X 'LA JOLLA'	LA JOLLA BOUGAINVILLEA	5 GAL	LOW
	9	BOUGAINVILLEA X 'ROSENKA'	ROSENKA BOUGAINVILLEA	5 GAL	LOW
	5	HESPERALOE PARVIFLORA 'PERPA' TM	BRAKELIGHTS RED YUCCA	5 GAL	LOW
	26	LOBELIA LAXIFLORA ANGUSTIFOLIA	MEXICAN LOBELIA	5 GAL	LOW
	3	LOMANDRA LONGIFOLIA 'PLATINUM BEAUTY'	VARIEGATED RUSH	5 GAL	LOW
	4	MAHONIA REPENS	CREEPING MAHONIA	5 GAL	LOW
	17	OLEA EUROPAEA 'MONTRA' TM	LITTLE OLLIE OLIVE	15 GAL	LOW
	7	ROSA FLORIBUNDA 'ICEBERG'	ICEBERG ROSE	5 GAL	MODERATE

GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS
	759 SF	LOLIUM PERENNE	PERENNIAL RYEGRASS	SOD	HIGH

PLANTING NOTES

1. THE CITY RESERVES THE RIGHT TO MAKE SUBSTITUTIONS, ADDITIONS, AND DELETIONS TO THE PLANTING LAYOUT AS WORK PROGRESSES.
2. CONTRACTOR SHALL INSTALL A 3" THICK LAYER OF MULCH IN ALL PLANTER AREAS PER SPECIFICATIONS.
3. ALL TREES MUST BE APPROVED AND TAGGED AT NURSERY BY ENGINEER.

0 10 20 30 feet
1"=10'-0"

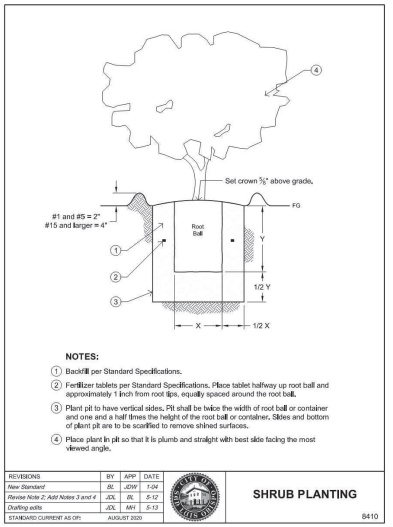
PROJECT TITLE: **MISSION PLAZA ENHANCEMENTS**

SHEET TITLE: PLANTING PLAN

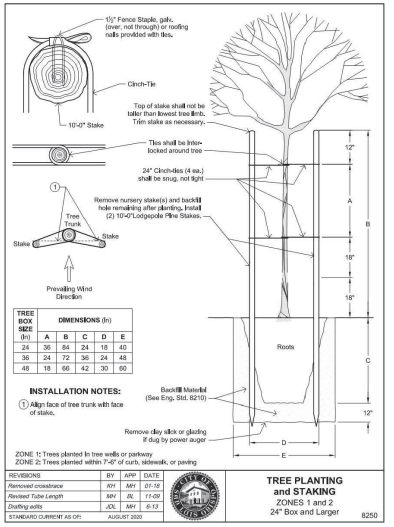
100% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT
MARISA L. PELTIER LIC. #6462
8.31.24
Renewal Date
7.12.23
STATE OF CALIFORNIA

DESIGNED BY: MARISA PELTIER
DRAWN BY: MP
CHECKED BY: MP
APPROVED BY: MP
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
PLAN FILE NO. / LOCATION 0256-03-CU20
SHEET NO. LP101



2 CITY STANDARD SHRUB PLANTING
NTS



1 CITY STANDARD TREE PLANTING AND STAKING
NTS

PROJECT TITLE:
MISSION PLAZA ENHANCEMENTS
SHEET TITLE:
PLANTING DETAILS
100% CONSTRUCTION DOCUMENTS

LICENSED LANDSCAPE ARCHITECT
MARISA I. PELTIER LIC. #5829
8.31.24
Renewal Date
7.12.23
Date
STATE OF CALIFORNIA

DESIGNED BY: MARISA PELTIER
DRAWN BY: MP
CHECKED BY: MP
APPROVED BY: MP
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
PLAN FILE NO. / LOCATION 0256-03-CU20
SHEET NO. LP501

SYMBOLS

- DETAIL REFERENCE BUBBLE WITH LEADER
- DETAIL REFERENCE BUBBLE
- FULL HEIGHT SECTION INDICATOR
- ELEVATION OF WALL OR FRAME
- NORTH ARROW
- TOP/BOTTOM OF ELEVATIONS
- SLOPE
- WELDED WIRE FABRIC (WWF LAYER)
- STEPPED SURFACE; FLOOR DEPRESSION
- SLOPED SURFACE
- STEPPED FOOTING
- BOTTOM STEPPED FOOTING
- INDICATES SPAN AND DIRECTION OF PREFABRICATED ROOF TRUSS (BY OTHERS)
- INDICATES SPAN AND DIRECTION OF ROOF RAFTER OR FLOOR JOIST WITH WEB STIFFENER
- INDICATES SPAN AND DIRECTION OF ROOF RAFTER OR FLOOR JOIST
- INDICATES EXTENTS OF FRAMING OR OTHER STRUCTURAL ELEMENT
- INDICATES HEADER @ OPENING PER HEADER SCHEDULE
- EARTH LAYER
- INDICATES SAND OR GROUT
- INDICATES GRAVEL
- STEEL IN CROSS SECTION
- INDICATES BEARING WALL
- SHADED AREA INDICATES CALIFORNIA FRAMING
- SHADED AREA INDICATES FOOTPRINT OF FLOOR ABOVE
- STEEL HSS TUBE COLUMN
- STEEL HSS OR PIPE COLUMN
- WIDE FLANGE STEEL COLUMN
- WOOD POST
- INDICATES SHEAR WALL STRAP / HOLDOWN TYPE PER SCHEDULE
- INDICATES PAD FOOTING TYPE PER SCHEDULE
- INDICATES CONTINUOUS FOOTING TYPE PER SCHEDULE
- ANGLE BRACE
- DOUBLE ANGLE BRACE
- DRAG STRUT CONNECTION
- FULL HEIGHT STIFFENER CONNECTION
- MOMENT CONNECTION
- MEMBER SPLICE
- TOP OF STEEL ± ELEVATION
- NUMBER OF EVENLY SPACED SHEAR STUDS
- SPECIAL STUD SPACING SEE TYPICAL STEEL DETAILS
- BEAM CAMBER AT MID-SPAN

WALL TYPES

- INDICATES PLYWOOD SIDE FOR SHEARWALL
- INDICATES BEARING WOOD WALL BELOW
- INDICATES BEARING WOOD WALL ABOVE
- INDICATES NON-BEARING WOOD WALL BELOW
- INDICATES NON-BEARING WOOD WALL ABOVE
- INDICATES EXISTING BEARING WOOD WALL
- INDICATES EXISTING NON-BEARING WOOD WALL
- INDICATES BEARING CMU WALL BELOW
- INDICATES BEARING CMU WALL ABOVE
- INDICATES NON-BEARING CMU WALL BELOW
- INDICATES NON-BEARING CMU WALL ABOVE
- INDICATES EXISTING BEARING CMU WALL
- INDICATES EXISTING NON-BEARING CMU WALL
- INDICATES BEARING CONCRETE WALL BELOW
- INDICATES BEARING CONCRETE WALL ABOVE
- INDICATES NON-BEARING CONCRETE WALL BELOW
- INDICATES NON-BEARING CONCRETE WALL ABOVE
- INDICATES EXISTING BEARING CONCRETE WALL
- INDICATES EXISTING NON-BEARING CONCRETE WALL

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ABBREVIATIONS

A & B	ABOVE AND BELOW
AB	ANCHOR BOLT
ABV	ABOVE
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURAL EXPOSED STRUCTURAL STEEL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	ENGINEERED WOOD ASSOCIATION (FORMERLY THE AMERICAN PLYWOOD ASSOCIATION)
APPVD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL; ARCHITECT
AWPA	AMERICAN WOOD PRESERVERS ASSOCIATION
AWS	AMERICAN WELDING SOCIETY
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT OR B	BOTTOM
BRC	BRACE
BRG	BEARING
BTWN	BETWEEN
CANT	CANTILEVER
CAM OR C	CAMBER
CC	CENTER TO CENTER
CG	CENTER OF GRAVITY
CIP	CAST-IN-PLACE
CJ	CONSTRUCTION JOINT; CONTROL JOINT
CL	CENTER LINE
CLR	CLEARANCE; CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPRESSION
CONC	CONCRETE
CONN	CONNECTION; CONNECT
CONSTR	CONSTRUCTION
CONT	CONTINUE; CONTINUOUS
CONTR	CONTRACTOR
CJP	COMPLETE JOINT PENETRATION WELD
CTR	CENTER
CTSK	COUNTERSINK; COUNTERSUNK
CU FT	CUBIC FOOT
d	PENNY (NAIL OR BAR DIA)
DBL	DOUBLE
DEPT	DEPARTMENT
DET	DETAIL
DF	DOUGLAS FIR/LARCH
DIA OR Ø	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION
DN	DOWN
DO	DO OVER
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMBED	EMBEDMENT
EN	EDGE NAIL
ENGR	ENGINEER
EQ	EQUAL OR EQUIVALENT
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXIST or (E)	EXISTING
EXT	EXTERIOR
FDN	FOUNDATION
FIN	FINISH
FJ	FLOOR JOIST
FLG	FLANGE
FLR	FLOOR
FN	FIELD NAIL
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FRMG	FRAMING
FT	FOOT; FEET
FTA	FLOOR TIE ABOVE
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GLB	GLUED LAMINATED BEAM
GR	GRADE
GRND	GROUND
H or HORIZ	HORIZONTAL
HDR	HEADER
HGR	HANGER
HP	HIGH POINT
HSH	HORIZONTALLY SLOTTED HOLES
HT	HEIGHT
ID	INSIDE DIAMETER
IF	INSIDE FACE
I-JST	I-JOIST
IN	INCH
INCL	INCLUDE
INFO	INFORMATION
INSP	INSPECTION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIPS
KS	KING STUD
KP	KING POST
KSI	KIPS PER SQUARE INCH
LB(S) OR #	POUND(S)
LF	LINEAL FOOT
LIN	LINEAL; LINEAR
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LSH	LONG SLOTTED HOLES
LSL	LAMINATED STRAND LUMBER
LT WT	LIGHTWEIGHT
LVL	LEVEL OR LAMINATED VENEER LUMBER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM; MINUTE
MISC	MISCELLANEOUS
(N)	NEW
N	NORTH
NO or #	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OSB	ORIENTED STRAND BOARD
P.A	POST ABOVE
PARA OR //	PARALLEL
PC	PRECAST; PIECE
PERP	PERPENDICULAR
PI	PLYWOOD INDEX
PL OR PL.	PLATE
PL	PROPERTY LINE
PLF	POUNDS PER LINEAL FOOT
PLCS	PLACES
PLY	PLYWOOD
PROP	PROPERTY
PT	PRESSURE TREATED
PW	PLATE WASHER
PJP	PARTIAL JOINT PENETRATION WELD
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PVMT	PAVEMENT
#	POUND; NUMBER
REF	REFERENCE
REINF	REINFORCE; REINFORCING
REQD	REQUIRED
RF	ROOF
RR	ROOF RAFTER
Ø	ROUND; DIAMETER
SCHED	SCHEDULE
SECT	SECTION
SEP	SEPARATION
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SOG	SLAB ON GRADE
SN	SHEAR NAIL
SPCG	SPACING
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
SSL	SHORT SLOTTED HOLES
STD	STANDARD
STGR	STAGGER
STIFF	STIFFENERS
STIRR	STIRRUP
STL	STEEL
STRUCT	STRUCTURAL
SW	SHEAR WALL
SYM	SYMMETRICAL
TB	TIE BEAM
T & B	TOP AND BOTTOM
T & G	TONGUE & GROOVE
TO	TOP OF
TOC	TOP OF CURB; TOP OF CONCRETE
TOF	TOP OF FOOTING
TEMP	TEMPERATURE; TEMPORARY
THRU	THROUGH
THK	THICKNESS/THICK
THR	THREADED
TOP or T	TOP
TOS	TOP OF STEEL/TOP OF SLAB
TOW	TOP OF WALL
TS	TRIMMER STUD
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UT	ULTRA-SONIC TEST
VERT	VERTICAL
VSH	VERTICAL SLOTTED HOLES
W/	WITH
W/O	WITHOUT
WO	WHERE OCCURS
WD	WOOD
WP	WORK POINT; WATERPROOF
WWF	WELDED WIRE FABRIC

STRUCTURAL STEEL SHAPES

W	W SHAPE
C	AMERICAN STD CHANNEL SHAPE
MC	MISC. CHANNEL SHAPE
L	ANGLE SHAPE
WT, ST, MT	STRUCT TEE SHAPE
PIPE	STANDARD PIPE SHAPE
PIPE-X	EXTRA STRONG PIPE SHAPE
PIPE-XX	DBL EXTRA STRONG PIPE SHAPE
HSS	HOLLOW STRUCTURAL SECTION

CITY OF SAN LUIS OBISPO

PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: SHEET INDEX, ABBREVIATIONS, & SYMBOLS

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS No. 6885 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-101

REINFORCING STEEL

1. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 19 OF THE CODE AND WITH THE PROVISIONS OF ACI 318-14, ASTM A706, GRADE 60 UNO. ASTM A615 GR 60 STEEL MAY BE SUBSTITUTED FOR ASTM A706 GR60 STEEL PER ACI 318-14 SECTION 20.2.2.5 PROVIDED THE FOLLOWING CONDITIONS ARE MET:
   A. THE ACTUAL YIELD STRENGTH BASED ON MILL TESTS DOES NOT EXCEED THE SPECIFIED YIELD STRENGTH BY MORE THAN 18,000 PSI.
   B. THE RATIO OF THE ACTUAL ULTIMATE TENSILE STRESS TO THE ACTUAL YIELD STRENGTH IS NOT LESS THAN 1.25.
   C. WHERE REINFORCEMENT COMPLYING WITH ASTM A615 IS TO BE WELDED, CHEMICAL TESTS SHALL BE PERFORMED TO DETERMINE WELDABILITY IN ACCORDANCE WITH SECTION 26.6.4 OF ACI 318-14.
2. BARS SHALL BE CLEAN OF RUST, GREASE, OR OTHER MATERIALS LIKELY TO IMPAIR BOND. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
3. WELDED WIRE REINFORCEMENT (WWR), PLAIN OR DEFORMED, SHALL CONFORM TO ASTM A185. WELDED DEFORMED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A1064. ALL WWR FOR STAIR PANS AND ALL WWR FOR CONCRETE FILL ON METAL DECK TO BE PLAIN WWR. PROVIDE LAPS PER ACI 318-14 SECTION 25.5.3 OR 25.5.4 MINIMUM. WWR SHALL BE SUPPORTED ON APPROVED CHAIRS.
4. REINFORCING BAR LAP SPLICES SHALL BE MADE AS INDICATED ON THE DRAWINGS. LAP ALL HORIZONTAL BARS AT CORNERS AND INTERSECTIONS. STAGGER ALL SPLICES UNLESS NOTED OTHERWISE ON PLANS.
   A. MINIMUM LAP SPLICE LENGTH FOR REINFORCING STEEL BARS IN CONCRETE SHALL BE PER ACI 318-14 SECTION 25.5.2 AND THE REINFORCING SCHEDULE ON THE DRAWINGS.
   B. MINIMUM LAP SPLICE LENGTH FOR REINFORCING STEEL BARS IN MASONRY SHALL BE PER ACI 530-13 SECTION 8.1.6.7.1 OR 9.3.3.4 AND THE REINFORCING SCHEDULE ON THE DRAWINGS.
5. ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE. ALL REINFORCING CONFORMING TO DIFFERING ASTM SPECIFICATIONS AND/OR OF DIFFERING GRADES SHALL BE CLEARLY MARKED TO DIFFERENTIATE THEM FROM OTHER REINFORCING STEEL IF CONCURRENTLY PRESENT ON SITE.
6. WHERE WELDING OF REINFORCING IS APPROVED BY THE STRUCTURAL ENGINEER, IT SHALL BE DONE BY AWS CERTIFIED WELDERS USING E80XX OR APPROVED ELECTRODES. WELDING PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF STRUCTURAL WELDING CODE- REINFORCING STEEL", AWS-D1.4-15. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706.
7. REINFORCING STEEL SHALL BE ACCURATELY PLACED AND ADEQUATELY SUPPORTED BEFORE THE CONCRETE IS PLACED AND SHALL BE SECURED AGAINST DISPLACEMENT DURING CONSTRUCTION WITHIN PERMITTED TOLERANCES. ADEQUATE SUPPORTS ARE ALSO NECESSARY TO KEEP THE REINFORCING STEEL AT THE PROPER DISTANCE FROM THE FORMS. USE WIRE BAR SUPPORTS, PRECAST CONCRETE SUPPORTS, SPACERS, BOLSTERS, REINFORCEMENT OR OTHER MEANS OF SUPPORT PER THE "CRSI MANUAL OF STANDARD PRACTICE", LATEST EDITION.
8. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE "CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.
9. COMPLETE AND DETAILED REINFORCING PLACEMENT DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE ARCHITECT FOR APPROVAL BY THE SEOR PRIOR TO FABRICATION IN ACCORDANCE WITH THE SPECIFICATIONS AND APPLICABLE CODES. THESE DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE PRIOR TO PLACING OF CONCRETE. THE REINFORCING PLACEMENT DRAWINGS SHALL INCLUDE ALL PRIMARY REINFORCEMENT, LAP SPLICES, TIES, DOWELS, HEADED U-DOWELS, EMBED PLATES, ANCHOR BOLTS, ETC. AREAS OF CONGESTION SHALL BE DETAILED SUFFICIENTLY TO DEMONSTRATE THAT PLACEMENT OF REBAR MEETS SPACING REQUIREMENTS OF ACI 318-14.
10. MILL TEST REPORTS FOR GRADE 60 BARS SHALL BE SUBMITTED TO THE INSPECTOR OF RECORD PRIOR TO PLACEMENT OF CONCRETE PER ACI 318-14 SECTION 26.13.2.3 OF THE CODE.
11. WHEN REQ'D, INSPECTION OF CONCRETE SHALL INCLUDE INSPECTION DURING INSTALLATION OF REINFORCING STEEL. INSPECTION SHALL BE SCHEDULED SO THAT PLACEMENT OF REINFORCING STEEL, CONDUIT, SLEEVES, AND EMBEDDED ITEMS MAY BE CORRECTED PRIOR TO PLACEMENT OF OVERLYING GRIDS OR REINFORCING STEEL.
12. CONCRETE PROTECTION FOR REINFORCEMENT

THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT IN CAST-IN-PLACE CONCRETE (NON-PRESTRESSED):	MINIMUM COVER, IN.
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3
B. CONCRETE EXPOSED TO EARTH OR WEATHER: NO.6 THROUGH NO. 18 BAR NO.5 BAR, W31 OR D31 WIRE & SMALLER	2 1 ½"
C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: SLABS, WALLS, JOISTS: NO.14 AND NO. 18 BARS NO.11 BAR & SMALLER BEAMS, COLUMNS: PRIMARY REINFORCEMENT TIES, STIRRUPS, SPIRALS	 1 ½" ¾" 1 ½"

13. MECHANICAL BAR SPLICE CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-14 SECTION 25.5.7 USE OF MECHANICAL CONNECTIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. SPLICES MUST BE TESTED AS INDICATED IN THE CONCRETE REINFORCEMENT SPECIFICATION. ACCEPTABLE PRODUCTS INCLUDE:

    LENTON STANDARD COUPLERS (IAPMO-ES 0129)
    LENTON FORM SAVERS, TYPE SA (IAPMO-ES 0129)
    LENTON WELDABLE HALF COUPLERS (IAPMO-ES 0129)
    LENTON LOCK COUPLERS PER (IAPMO-ES 0129)

    NOTE THAT REBAR ATTACHED TO PLATE USING LENTON WELDABLE HALF COUPLERS SHALL BE ASTM A706 PER IAPMO-ES 0129.

    ALL MECHANICAL BAR SPLICE CONNECTIONS IN SPECIAL STRUCTURAL WALLS, SPECIAL MOMENT FRAMES AND CONCRETE DIAPHRAGMS SHALL BE TYPE 2 CONFORMING TO THE REQUIREMENTS OF ACI 318-14 SECTION 18.2.7 & 18.12.7.4

EXISTING CONDITIONS

1. ALL INFORMATION SHOWN ON THE PLANS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE FROM PLANS SUPPLIED BY THE OWNER, BUT WITHOUT GUARANTEE OF ACCURACY.
2. WHERE ACTUAL CONDITIONS ARE NOT IN ACCORDANCE WITH THE INFORMATION PRESENTED, THE ARCHITECT AND/OR STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY. NO MODIFICATIONS OF THE PLANS FOR NEW CONSTRUCTION SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT.

EXISTING UNDERGROUND UTILITIES

1. THE ARCHITECT AND ENGINEERS ARE NOT RESPONSIBLE FOR THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES WHETHER OR NOT SHOWN ON THE DRAWINGS. DRAWINGS, IF ANY, IS APPROXIMATE. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THE SITE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND/OR STRUCTURAL ENGINEER SHOULD ANY SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES WHICH MAY RESULT FROM HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ALL EXISTING UNDERGROUND UTILITIES.
3. AN UNDERGROUND SERVICE ALERT INQUIRY IDENTIFICATION NUMBER MUST BE OBTAINED AT LEAST TWO WORKING DAYS BEFORE STARTING WORK WITH THIS PERMIT.
   A. FOR PROJECTS IN SOUTHERN CALIFORNIA TELEPHONE NO. 1-800-422-4133.
   B. FOR PROJECTS IN NORTHERN CALIFORNIA TELEPHONE NO. 1-800-227-2600.

CONCRETE

1. ALL CONCRETE CONSTRUCTION SHALL CONFORM WITH CHAPTER 19 OF THE CODE AND WITH THE PROVISIONS OF ACI 318-14.
2. CONCRETE MATERIALS SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

MATERIAL	ASTM STANDARD
PORTLAND CEMENT (TYPE II)[A]	C150
CONCRETE AGGREGATES (HARDROCK)	C33
CONCRETE AGGREGATES (LIGHTWEIGHT)[C]	C330
WATER[B]	C1602
COAL FLY ASH OR POZOLLAN (CLASS F)	C618
NATURAL OR MANUFACTURED SAND	C33
SLAG	C989

   A. FOR SOILS WITH HIGH CONCENTRATIONS OF SULFATES (EXPOSURES S2 OR S3 PER ACI 318-14 TABLE 19.3.2.1) PORTLAND CEMENT SHALL BE TYPE V. VERIFY WITH PROJECT GEOTECHNICAL REPORT.
   B. WATER SHOULD ONLY BE ADDED AT THE BATCH PLANT. IN NO CASE SHALL THE DESIGN WATER/ CEMENT RATIO BE EXCEEDED.
   C. PUMICE AGGREGATE SHALL NOT BE USED.
3. CONCRETE MIXES SHALL BE PROPORTIONED BASED ON SECTION 26.4.3 OF ACI 318-14, WHICH REFERENCES ACI 301-10 ARTICLE 4.2.3. MIX DESIGNS SHALL INCLUDE DOCUMENTATION OF MIX AVERAGE COMPRESSIVE STRENGTH THROUGH FIELD TEST DATA OR TRIAL MIXTURES IN ACCORDANCE WITH ACI 301-10 ARTICLE 4.2.3.4. SCHEDULE OF STRUCTURAL CONCRETE STRENGTHS AND LOCATIONS (UNO):

LOCATION IN STRUCTURE	MINIMUM STRENGTH (PSI)	DENSITY (PCF)	MAX SLUMP (INCH)	MAX WATER/CEMENT RATIO	SLAG/ FLY ASH[A] (MAX)
CONCRETE FOUNDATIONS, GRADE BEAMS, TIE BEAMS	4,000	150	4	0.5	0.15
CONCRETE BASEMENT WALLS/STEM WALLS	4,000	150	4	0.5	0.15
CONCRETE SLAB ON GRADE	3,000	150	4	0.45	0.15
STAIRS ON GRADE, CURBS AND OTHER NON-STRUCTURAL CONCRETE	3,000	150	4	0.5	0.15
SITE WALLS	3,000	150	4	0.5	0.15

   A. AS MEASURED BY CEMENTITIOUS WEIGHT
4. READY MIXED CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C94 OF C685.
5. DEPOSITING AND CONVEYING OF CONCRETE SHALL CONFORM TO SECTION 26.5 OF ACI 318-14 AND PROJECT SPECIFICATIONS.
6. ALL CONCRETE SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED SHALL BE CLEANED AND ROUGHENED TO 1/4" AMPLITUDE.
7. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
8. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. CORING IN CONCRETE IS NOT PERMITTED WITHOUT SEOR APPROVAL. NOTIFY THE SEOR IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS. SEE THE DRAWINGS FOR ADDITIONAL RESTRICTIONS ON THE PLACEMENT OF OPENINGS IN SLABS AND WALLS.
9. PIPES EMBEDDED IN CONCRETE:
   A. CONCRETE
      a. PIPES LARGER THAN 1-1/2" DIAMETER SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY SEOR.
      b. NO CONDUITS SHALL BE PLACED IN CONCRETE FILL OVER METAL DECK.
      c. PIPES SHALL NOT DISPLACE OR INTERRUPT REINFORCING BARS.
      d. DO NOT STACK CONDUITS. SPACE EMBEDDED PIPES AND CONDUITS AT A MINIMUM OF 3 DIAMETERS CLEAR FROM OTHER EMBEDDED PIPES/CONDUITS AND REBAR.

FOUNDATION

1. GEOTECHNICAL INFORMATION AND FOUNDATION DESIGN IS BASED ON THE FOLLOWING GEOTECHNICAL REPORTS AND SUPPLEMENTS/ADDENDUMS. COPIES OF THE REPORTS AND SUPPLEMENTAL LETTERS SHALL BE AVAILABLE AT THE JOBSITE AT ALL TIMES.

REPORT/ADDENDUM TITLE	PREPARED BY	DATE	PROJECT #
GEOTECHNICAL ENGINEERING REPORT MISSION PLAZA RESTROOM AND CAFE SAN LUIS OBISPO MISSION PLAZA SAN LUIS OBISPO, CALIFORNIA	EARTH SYSTEMS PACIFIC 4378 OLD SANTA FE ROAD SAN LUIS OBISPO, CA 93401	OCTOBER 21, 2022	305341-001

2. SPREAD OR CONTINUOUS FOOTINGS:

ELEMENT	ALLOWABLE BEARING CAPACITY (PSF) [A]	ALLOWABLE LATERAL RESISTANCE [B]	
		PASSIVE RESISTANCE (PSF/FT BELOW GRADE)	FRICTION RESISTANCE (COEFFICIENT OF FRICTION)
BUILDING FOUNDATION	2,000	350 150 (2:1 SLOPING DOWN)	0.35
RET WALL	1,500		

   NOTES:
   A. THE ALLOWABLE CAPACITY MAY BE INCREASED BY ONE-THIRD WHEN CONSIDERING LOADS OF SHORT DURATION SUCH AS WIND OR SEISMIC FORCES.
   B. THE ALLOWABLE LATERAL RESISTANCE CAN BE TAKEN AS THE SUM OF THE FRICTIONAL RESISTANCE AND PASSIVE RESISTANCE WITH THE LESSER REDUCED BY 33 PERCENT.
   C. THE UPPER 0 FOOT OF SOIL NOT PROTECTED BY PAVEMENT SHALL BE NEGLECTED WHEN CALCULATING PASSIVE RESISTANCE.
   D. COMPACTED FILL SHOULD BE PREPARED PER SECTION 6.0 GEOTECHNICAL EVALUATION REPORT
4. SLAB ON GRADE SUPPORT SHALL BE PER THE GEOTECHNICAL INVESTIGATION REPORT AND TYPICAL DETAILS IN THE CONSTRUCTION DOCUMENTS.
5. WHERE NOT SHOWN ON THE DRAWINGS, CONTRACTOR TO PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED AND SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS, AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
6. CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER AND/OR SEEPAGE.
7. EXCAVATION FOR FOOTINGS SHALL BE APPROVED BY THE INSPECTOR OR GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE AND REINFORCING.
8. ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE OR GROUT HAS ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL BRACE OR PROTECT ALL BUILDING AND PIT WALLS BELOW GRADE FROM LATERAL LOADS UNTIL ATTACHING FLOORS ARE COMPLETELY IN PLACE AND HAVE ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS AND INSTALLATION OF SUCH BRACING.
9. EXCAVATIONS SHALL BE CUT SQUARE AND SMOOTH, WITH LEVEL BOTTOMS.
10. FOOTING BACKFILL AND UTILITY TRENCH BACKFILL WITHIN BUILDING AREA SHALL BE MECHANICALLY COMPACTED IN LAYERS IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION REPORT AND APPROVED BY THE GEOTECHNICAL ENGINEER. FLOODING WILL NOT BE PERMITTED. ALL FILLS USED TO SUPPORT FOUNDATIONS SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER REPRESENTATIVE PER SECTION 1705.6 OF THE CODE.
11. ALL ABANDONED FOOTINGS, UTILITIES, ETC., SHALL BE REMOVED. NEW FOOTINGS MUST EXTEND INTO UNDISTURBED SOILS.

DIMENSIONS

1. DIMENSIONS SHALL BE DEFINED TO INCLUDE BOTH HORIZONTAL DIMENSIONS AND VERTICAL DIMENSIONS (ELEVATIONS).
2. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS.
3. SEE ARCHITECTURAL DRAWINGS FOR DIMENSION NOT NOTED ON STRUCTURAL DRAWINGS.
4. SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS FOR FINISH FLOOR ELEVATIONS.
5. SEE ARCHITECTURAL DRAWINGS FOR ALL TOP OF SHEATHING AND/OR ROOF ELEVATIONS.
6. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES OR INCONSISTENCIES.

DESIGN INFORMATION

1. FLOOR LIVE LOADS: (2019 CBC SECTION 1603.1.1)

FLOOR LIVE LOADS			
OCCUPANCY OR USE	UNIFORM (PSF)	CONC. (LBS)	REFERENCE
TOILET ROOMS	60	—	ASCE 7-16 TABLE C4.3-1

2. ROOF LIVE LOADS (2019 CBC SECTION 1603.1.2)

ROOF LIVE LOADS			
OCCUPANCY OR USE	UNIFORM (PSF)	CONC. (LBS)	REFERENCE
ROOF ORDINARY FLAT, PITCHED AND CURVED ROOFS (THAT ARE NOT OCCUPIABLE)	20	—	2019 CBC TABLE 1607.1

3. ROOF SNOW LOADS (2019 CBC SECTION 1603.1.3):

SNOW DESIGN DATA		
PARAMETER	VALUE	REFERENCE
GROUND SNOW LOAD	P_g = 0 PSF	ASCE 7-16 7.2

4. WIND DESIGN DATA (2019 CBC SECTION 1603.1.4) :

WIND DESIGN DATA		
PARAMETER	VALUE	REFERENCE
ULTIMATE DESIGN WIND SPEED (3-SEC GUST)	V_{ULT} = 90 MPH	2019 CBC FIG. 1609.3
NOMINAL DESIGN WIND SPEED (3-SEC GUST)	V_{ASD} = 70 MPH	2019 CBC 1609.3.1
EXPOSURE CATEGORY	C	2019 CBC 1609.4.3
INTERNAL PRESSURE COEFFICIENT:	GCpi = ± 0.18	ASCE 7-16 TABLE 26.13-1

COMPONENTS & CLADDING WIND PRESSURES (PSF)				
LOCATION		COMPONENT TRIBUTARY AREA (SQ FT)		
		10	100	500
ROOF	ZONE 1	-1.8	-0.8	-0.8
	ZONE 2e	-1.8	-0.8	-0.8
	ZONE 2n	-2.0	-1.2	-1.0
	ZONE 2r	-1.8	-0.8	-0.8
	ZONE 3e	-2.5	-1.5	-1.0
	ZONE 3r	-2.0	-1.2	-1.0
	ALL ZONES	0.9	0.5	0.5
OVERHANG	ZONE 1	-2.6	-1.6	-1.6
	ZONE 2e	-2.6	-1.6	-1.6
	ZONE 2n	-2.8	-2.0	-1.8
	ZONE 2r	-2.6	-1.6	-1.6
	ZONE 3e	-3.3	-2.3	-1.8
	ZONE 3r	-2.8	-2.0	-1.8
WALL	ZONE 4	-24.9	-21.6	-19.0
	ZONE 5	-30.7	-23.9	-19.0
	POSITIVE	22.9	19.0	17.1

5. EARTHQUAKE DESIGN DATA (2019 CBC SECTION 1603.1.5):

SITE AND OCCUPANCY PARAMETERS		
PARAMETER	VALUE	REFERENCE
RISK CATEGORY	II	2019 CBC TABLE 1604.5
SEISMIC IMPORTANCE FACTOR	I = 1.0	ASCE 7-16 TABLE 1.5-2
MAPPED SPECTRAL RESPONSE ACCELERATIONS:	S_s = 1.059g S_1 = 0.39g	2019 CBC 1613.2.1
SITE CLASS	D	2019 CBC 1613.2.2
SPECTRAL RESPONSE COEFFICIENTS:	S_{DS} = 0.847g S_{D1} =	2019 CBC 1613.2.4

BUILDING PARAMETERS			
PARAMETER	VALUE		REFERENCE
SEISMIC DESIGN CATEGORY	SDC = D		2019 CBC 1613.2.5
BASIC SEISMIC FORCE RESISTING SYSTEM	SPECIAL REINFORCED MASONRY SHEAR WALLS RESTROOM	KIOSK	ASCE 7-16 TABLE 12.2-1
RESPONSE MODIFICATION FACTOR	R = 2	1.25	
SYSTEM OVERSTRENGTH FACTOR	Ω_0 = 2½	1.25	
DEFLECTION AMPLIFICATION FACTOR	C_d = 1 ½	1.25	
DESIGN BASE SHEAR	V = 20.8k	4.62k	ASCE 7-16 12.8.1
SEISMIC RESPONSE COEFFICIENTS	C_s = 0.380	0.608	ASCE 7-16 12.8.1.1
ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE PROCEDURE		ASCE 7-16 12.8

6. GEOTECHNICAL INFORMATION (2019 CBC SECTION 1603.1.6):
   REFER TO FOUNDATION GENERAL NOTES
7. FLOOD DESIGN DATA: (2019 CBC SECTION 1603.1.7)
   THIS PROJECT IS NOT IN A FLOOD PLAIN

GENERAL

1. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING CODES AND STANDARDS:
   A. 2019 CALIFORNIA BUILDING CODE, PART 2, VOLUME 2 OF 2, AND TITLE 24 C.C.R. 2019 EDITION AND LATEST REVISIONS (INCLUDING SUPPLEMENTS AND ERRATA) HEREIN REFERRED TO AS "THE CODE".
   B. ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING THE STATE OF CALIFORNIA DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (CAL/OSHA).
   C. CODES & STANDARDS REFERENCED IN THE CODE OR LISTED IN THESE NOTES AND SPECIFICATIONS.
2. ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.
3. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES. IN NO INSTANCE SHALL DIMENSIONS BE SCALED FROM THE DRAWINGS.
5. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
   A. SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS, EXCEPT AS NOTED
   B. SIZE AND LOCATION OF ALL INTERIOR AND EXTERIOR NON-BEARING PARTITIONS UNLESS NOTED AND/OR DETAILED ON THE STRUCTURAL DRAWINGS
   C. SIZE AND LOCATION OF ALL CONCRETE CURBS, EQUIPMENT PADS, PITS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGE IN LEVEL, CHAMFERS, GROOVES, INSERTS, ETC
   D. SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS EXCEPT AS SHOWN
   E. FLOOR AND ROOF FINISHES
   F. MISCELLANEOUS DRAINAGE AND WATERPROOFING
   G. ALL FIREPROOFING REQUIREMENTS INCLUDING FIREPROOFING OF STRUCTURAL STEEL
   H. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS
6. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
   A. PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC., EXCEPT AS SHOWN OR NOTED.
   B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
   C. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
   D. SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES, ANCHOR BOLTS FOR MOTOR MOUNTS.
7. SEE CIVIL DRAWINGS FOR THE FOLLOWING:
   A. HEIGHT AND/OR ELEVATION OF:
      a. FINISHED SURFACE
      b. TOP OF WALL
      c. TOP OF GRADE
      d. FINISHED GRADE
      e. SLOPE
   B. SITE CONCRETE WALKWAYS, CURBS & PAVING
8. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT ETC., THE CONTRACTOR IS RESPONSIBLE FOR PROVISION OF TEMPORARY SHORING AND OTHER CONSTRUCTION AIDS, INCLUDING ALL ENGINEERING OF SUCH SYSTEMS, FOR TEMPORARY SUPPORT OF NEW AND/OR EXISTING STRUCTURAL ELEMENTS AS REQUIRED FOR ERECTION AND OTHER CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION (UNO). OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS OR CONCERN CONSTRUCTION MEANS AND METHODS OR CONSTRUCTION SAFETY.
9. BACKFILL SHALL NOT BE PLACED BEHIND EXTERIOR AND INTERIOR RETAINING WALLS UNTIL THE CONCRETE / CMU HAS ACHIEVED FULL DESIGN STRENGTH. FOR BRACED WALLS SUPPORTED BY STRUCTURAL DIAPHRAGMS, BACKFILL SHALL NOT BE PLACED BEHIND THE WALL UNTIL THE DIAPHRAGM HAS BEEN INSTALLED , AND FOR CONCRETE DIAPHRAGMS, HAS ACHIEVED FULL DESIGN STRENGTH.
10. THE CONTRACT STRUCTURAL DRAWINGS SHOW THE BUILDING IN ITS FINAL INTENDED POSITION. CONTRACTOR SHALL MAKE PROVISIONS IN THE LAYOUT OF THE BUILDING TO TAKE INTO ACCOUNTS SHRINKAGE, CREEP, SHORTENING, ETC.,
11. OPENINGS, POCKETS, ETC., LARGER THAN 6" SHALL NOT BE PLACED IN CONCRETE SLABS, DECKS, WALLS, UNLESS SPECIALLY DETAILED ON THE STRUCTURAL DRAWINGS. NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC., LARGER THAN 6" NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT WHICH ARE LOCATED IN STRUCTURAL MEMBERS.
12. ASTM SPECIFICATIONS ON THE DRAWINGS SHALL BE THE VERSION REFERENCED IN CHAPTER 35 OF THE CODE OR AS REFERENCED IN THE APPLICABLE DESIGN STANDARD.
13. CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, THE STRUCTURAL ENGINEER AND GEOTECHNICAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
14. CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IF PLACED ON FRAMED ROOF OR FLOOR. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. THE CONTRACTOR TO DESIGN AND PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
15. CONTRACTOR SHALL COORDINATE SHORING WITH DRAWINGS OF RECORD TO INSURE PROVISIONS FOR POCKETS, BLOCKOUTS, OFFSETS, STEPPED FOOTINGS AND ANY OTHER ITEMS AFFECTED BY THE SHORING
16. AN UNDERGROUND SERVICE ALERT INQUIRY IDENTIFICATION NUMBER MUST BE OBTAINED AT LEAST TWO WORKING DAYS BEFORE STARTING WORK WITH THIS PERMIT.
   A. FOR PROJECTS IN SOUTHERN CALIFORNIA TELEPHONE NO. 1-800-422-4133.
   B. FOR PROJECTS IN NORTHERN CALIFORNIA TELEPHONE NO. 1-800-227-2600.
17. EDGE OF SLAB DIMENSIONS TO BE COORDINATED AND VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO FABRICATION.

CITY OF SAN LUIS OBISPO

PROJECT TITLE:
MISSION PLAZA ENHANCEMENTS

SHEET TITLE:
GENERAL NOTES

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS No. S 6685 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-102

TESTING CRITERIA FOR POST-INSTALLED ANCHORS IN CONCRETE / MASONRY

1. CONDUCT TESTING OF POST- INSTALLED ANCHORS PER SECTION 1901.3.4 OF THE CODE.
2. WHERE THE MANUFACTURER'S INSTALLATION INSTRUCTIONS OR APPLICABLE ICC-ES EVALUATION SERVICES REPORT CALL FOR THE APPLICATION OF AN INSTALLATION TORQUE, THE SPECIFIED TORQUE SHALL BE APPLIED WITH A CALIBRATED TORQUE WRENCH. THE SPECIFIED INSTALLATION TORQUE SHALL NOT BE EXCEEDED.
3. THE SPECIAL INSPECTOR SHALL BE ON THE JOBSITE DURING ANCHOR INSTALLATIONS AS REQUIRED PER CHAPTER 17 OF THE CODE, UNLESS OTHERWISE NOTED IN ICC-ES ESR, TO VERIFY ANCHOR, ANCHOR DIMENSIONS, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, HOLE DIMENSIONS, ANCHOR SPACING, EDGE DISTANCES, SLAB THICKNESS, ANCHOR EMBEDMENT, AND INSTALLATION TORQUE.
4. TEST LOAD: REQUIRED TEST LOADS SHALL BE DETERMINED BY ONE OF THE FOLLOWING METHODS:
   - A. TWICE THE MAXIMUM ALLOWABLE TENSION LOAD OR ONE AND A QUARTER (1 1/4) TIMES THE MAXIMUM DESIGN STRENGTH PROVIDED BY THE ICC REPORT OR DETERMINED PER ACI 318. THE TENSION TEST LOAD NEED NOT TO EXCEED 80 PERCENT OF THE NOMINAL YIELD STRENGTH OF THE ANCHOR (0.8 As Fy). SEE STRUCTURAL DETAILS FOR DESIGN-BASED TENSION TEST LOADS FOR ADHESIVE ANCHORS.
   - B. THE MANUFACTURER'S RECOMMENDED INSTALLATION TORQUE AS APPROVED BY THE ICC REPORT.
5. TENSION OR TORQUE TESTING OF POST-INSTALLED ANCHORS SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE IOR AND ENFORCEMENT AGENCY.
6. THE SPECIAL INSPECTOR SHALL SELECT ANCHORS FOR TESTING AT RANDOM.
7. TEST FREQUENCY:

APPLICATION	QUANTITY
STRUCTURAL	100% OF BOLTS
NON-STRUCTURAL (SUCH AS EQUIPMENT ANCHORAGE)	50%; ALTERNATE BOLTS IN A GROUP (TEST AT LEAST HALF OF THE ANCHORS IN GROUP)
SILL PLATE BOLTING	10% OF BOLTS

   EXCEPTIONS:
   - A. UNDERCUT ANCHORS THAT ALLOW VISUAL CONFIRMATION OF FULL SET SHALL NOT REQUIRE TESTING.
   - B. WHERE THE FACTORED DESIGN TENSION ON ANCHORS IS LESS THAN 100 LBS AND THOSE ANCHORS ARE CLEARLY NOTED ON THE APPROVED CONSTRUCTION DOCUMENTS.
   - C. WHERE ADHESIVE ANCHOR SYSTEMS ARE USED TO INSTALL REINFORCING DOWEL BARS IN HARDENED CONCRETE, ONLY 25 PERCENT OF THE DOWELS SHALL BE TESTED IF ALL OF THE FOLLOWING CONDITIONS ARE MET:
     - THE DOWELS ARE USED EXCLUSIVELY TO TRANSMIT SHEAR FORCES ACROSS JOINTS BETWEEN EXISTING AND NEW CONCRETE.
     - THE NUMBER OF DOWELS IN ANY ONE MEMBER EQUALS OR EXCEEDS 12.
     - THE DOWELS ARE UNIFORMLY DISTRIBUTED ACROSS SEISMIC FORCE RESISTING MEMBERS (SUCH AS SHEAR WALLS, COLLECTORS, AND DIAPHRAGMS).
   - D. TESTING OF SHEAR DOWELS ACROSS COLD JOINTS IN SLAB ON GRADE, WHERE THE SLAB IS NOT PART OF THE LATERAL FORCE-RESISTING SYSTEM SHALL NOT BE REQUIRED.
   - E. TESTING IS NOT REQUIRED FOR POWER ACTUATED FASTENERS USED TO ATTACH TRACKS OF INTERIOR NON-SHEAR WALL PARTITIONS FOR SHEAR ONLY, WHERE THERE ARE AT LEAST THREE FASTENERS PER SEGMENT OF TRACK.
8. TEST METHODS: TEST LOADS MAY BE APPLIED BY ANY METHOD THAT WILL EFFECTIVELY TRANSMIT A MEASURABLE TENSION LOAD TO THE ANCHOR. ACCEPTABLE METHODS INCLUDE:
   - A. USE OF HYDRAULIC JACK, WHEREBY EITHER UNCONFINED OR CONFINED TESTING SHALL BE ACCEPTABLE;
   - B. USE OF CALIBRATED SPRING LOADED DEVICES; OR
   - C. USE OF A CALIBRATED TORQUE WRENCH FOR TORQUE-CONTROLLED EXPANSION ANCHORS.
9. TEST ACCEPTANCE CRITERIA: ACCEPTANCE CRITERIA FOR POST-INSTALLED ANCHORS SHALL BE BASED ON THE ICC REPORT OR MANUFACTURER'S WRITTEN INSTRUCTION AS ACCEPTABLE TO OSHPD. FIELD TESTS SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:
   - A. HYDRAULIC RAM METHOD: ANCHORS TESTED WITH A HYDRAULIC JACK OR SPRING LOADED DEVICES SHALL MAINTAIN THE TEST LOAD FOR A MINIMUM OF 15 SECONDS AND SHALL EXHIBIT NO DISCERNABLE MOVEMENT DURING THE TENSION TEST, E.G. AS EVIDENCED BY LOOSENING OF THE WASHER UNDER THE NUT. SCREW ANCHORS MAY BE LOOSENED A MAXIMUM ONE FULL TURN TO FACILITATE THE POSITIONING OF A TENSION TEST COLLAR.
   - B. TORQUE WRENCH METHOD: ANCHORS TESTED WITH A CALIBRATED TORQUE WRENCH MUST ATTAIN THE SPECIFIED TORQUE WITHIN HALF (1/2) TURN OF THE NUT.

     EXCEPTIONS:
     - WEDGE OR SLEEVE TYPE: ONE-QUARTER (1/4) TURN OF THE NUT FOR A 3/8 INCH ANCHOR ONLY.
     - THREADED TYPE: ONE-QUARTER (1/4) TURN OF THE SCREW AFTER INITIAL SEATING OF THE SCREW HEAD.
10. IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME TYPE, INSTALLED BY THE SAME TRADE, AND NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME INITIAL TEST FREQUENCY.
11. REQUIRED TORQUE TEST LOADS SHALL BE EQUAL TO THE MANUFACTURER'S RECOMMENDED INSTALLATION TORQUE PROVIDED IN THE ICC-ESR FOR THE SPECIFIC ANCHOR. TEST TORQUE VALUES ARE SUMMARIZED IN THE TABLE BELOW:

SIMPSON			
LOCATION IN STRUCTURE	INSTALLATION TORQUE (FT-LBS)		
INCHES	SIMPSON STRONG-BOLT2 (ICC-ES ESR 3037)	SIMPSON WEDGE-ALL (ICC-ES ESR 1396)	SIMPSON TORQ-CUT SELF-UNDERCUTTING ANCHOR (ICC-ES ESR 2705)
1/4	4	-	-
3/8	30	30	-
1/2	60	35	90
5/8	90	55	185
3/4	150	120	240

POST-INSTALLED ANCHORS IN CONCRETE / MASONRY

1. POST-INSTALLED ANCHOR CAPACITIES IN CONCRETE SHALL BE DETERMINED PER SECTION 1901.3 OF THE CODE AND ACI 318-14 CHAPTER 17 USING STRENGTH DESIGN.
2. POST INSTALLED ANCHORS IN CONCRETE AND MASONRY SHALL BE PREQUALIFIED FOR SEISMIC APPLICATIONS IN ACCORDANCE WITH THE FOLLOWING INSTALLATION OF POST-INSTALLED ANCHORS SHALL BE IN ACCORDANCE WITH THE LISTED APPLICABLE ICC EVALUATION REPORT.

SUBSTRATE MATERIAL	ANCHOR TYPE	ANCHOR PRODUCT	ICC EVALUATION REPORT	ACCEPTANCE CRITERIA
CONCRETE	EXPANSION ANCHORS	SIMPSON STRONGBOLT 2	ICC ESR-3037	AC193
CMU	EXPANSION ANCHORS	SIMPSON STRONGBOLT 2	IAPMO ES ER 240	AC01 OR AC106
CONCRETE	SCREW ANCHOR	SIMPSON TITEN HD	ICC ESR-2713	AC193
CMU	SCREW ANCHOR	SIMPSON TITEN HD	ICC ESR-1056	AC106
CONCRETE	ADHESIVE ANCHORS	SIMPSON SET-XP	ICC ESR-2508	AC193
CMU	ADHESIVE ANCHOR	SIMPSON SET-XP	IAPMO ES ER 265	AC58
CONCRETE	POWER ACTUATED FASTENER**	SIMPSON PDPAW	ICC ESR-2138	AC70

**LIMITATIONS OF USE OF POWER ACTUATED FASTENERS:
PER SECTION 13.4.5 OF ASCE 7-16 POWER ACTUATED FASTENERS IN CONCRETE OR STEEL SHALL NOT BE USED FOR SUSTAINED TENSION LOADS OR FOR BRACE APPLICATIONS IN SEISMIC UNLESS APPROVED FOR SEISMIC LOADING. POWER ACTUATED FASTENERS IN MASONRY SHALL NOT BE PERMITTED UNLESS APPROVED FOR SEISMIC LOADING.

EXCEPTION: POWER ACTUATED FASTENERS IN CONCRETE USED FOR SUPPORT OF ACOUSTICAL TILE OR LAY-IN PANEL SUSPENDED CEILING APPLICATIONS AND DISTRIBUTED SYSTEMS WHERE THE SERVICE LOAD ON ANY INDIVIDUAL FASTENER DOES NOT EXCEED 90 LB.

3. EXPANSION ANCHOR EMBEDMENTS IN THE DRAWINGS ARE MINIMUM "EFFECTIVE EMBEDMENTS" (hef) AS SHOWN IN THE ICC REPORT CORRESPONDING TO THE ANCHOR.
4. LOCATE ALL EXISTING REINFORCEMENT BY NON-DESTRUCTIVE MEANS (X-RAY, PACOMETER, GPR, ETC.) PRIOR TO DRILLING OR INSTALLING POST-INSTALLED ANCHORS. COORDINATE POST-INSTALLED ANCHOR LOCATIONS WITH LOCATIONS OF EXISTING REINFORCEMENT. DO NOT CUT OR DAMAGE EXISTING REINFORCEMENT.
5. ALL POST-INSTALLED ANCHORS USED IN DRY INTERIOR CONDITIONS SHALL BE CARBON STEEL, U.N.O
6. ALL POST-INSTALLED ANCHORS USED AT EXTERIOR CONDITIONS, EXPOSED TO THE ELEMENTS, OR USED IN A DAMP ENVIRONMENT (I.E. KITCHENS) SHALL BE STAINLESS STEEL, U.N.O.
7. WHERE POST-INSTALLED MECHANICAL ANCHORS ARE USED FOR NON-VIBRATION ISOLATED MECHANICAL EQUIPMENT RATED OVER 10 HP, THEY SHALL BE QUALIFIED IN ACCORDANCE WITH ACI 355.2.
8. IF THE CONCRETE CRACKS DURING THE INSTALLATION OF AN ANCHOR, THE ANCHOR SHALL BE REMOVED OR ABANDONED. FOR ABANDONED ANCHORS AND ABANDONED ANCHOR HOLES:
   - A. FILL ALL EMPTY ABANDONED ANCHOR HOLES WITH A DRY-PACK MORTAR.
   - B. FOR ABANDONED EXPANSION ANCHORS WHICH CANNOT BE REMOVED WITHOUT DAMAGING THE SUBSTRATE, CUT/BURN OFF THE END OF THE BOLT FLUSH WITH THE FACE OF CONCRETE/MASONRY AND THEN DRIVE ABANDONED ANCHOR TO BOTTOM OF HOLE. FILL REMAINDER OF HOLE WITH A DRY-PACK MORTAR.
   - C. FOR ABANDONED ADHESIVE OR UNDERCUT ANCHORS WHICH CANNOT BE REMOVED WITHOUT DAMAGING THE SUBSTRATE, BURN OFF THE END OF THE BOLT/ROD 1" BELOW THE SURFACE OF CONCRETE/MASONRY AND FILL REMAINDER OF HOLE WITH A DRY-PACK MORTAR.
   - D. ABANDONED ANCHOR HOLES (WHETHER FILLED WITH DRY-PACK OR CONTAINING ABANDONED ANCHORS) MAY NOT BE LOCATED ANY CLOSER THAN 3x DIAMETER CENTER-TO-CENTER TO ANY ANCHOR IN SERVICE. ANCHORS NOT MEETING THIS MINIMUM SPACING MAY HAVE REDUCED CAPACITY AND SHALL BE REVIEWED WITH THE SEOR.

SUBSTRATE MATERIAL	ANCHOR TYPE	ANCHOR PRODUCT	ICC EVALUATION REPORT	ACCEPTANCE CRITERIA
CONCRETE	EXPANSION ANCHORS	HILTI KB-TZ	ICC ESR-1917	AC193
CONCRETE	SCREW ANCHOR	HILTI KH-EZ	ICC ESR-3027	AC193
CONCRETE	ADHESIVE ANCHORS	HILTI HIT-HY 200	ICC ESR-3187	AC308
CONCRETE	POWER ACTUATED FASTENER**	HILTI X-U	ICC ESR-2269	AC70

COLD-FORMED STEEL (LIGHT GAGE METAL FRAMING)

1. ALL LIGHT GAGE METAL FRAMING CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 2211 OF THE CODE AND AISI S100-16 "SPECIFICATIONS FOR DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS".
2. MEMBER IDENTIFICATION SHALL BE AS SHOWN:
   - A. MEMBER DEPTH:
     (EXAMPLE: 6" = 600/100 INCHES)
     ALL MEMBER DEPTHS ARE TAKEN IN 1/100 INCH INCREMENTS. FOR "T" SECTIONS, MEMBER DEPTH IS THE INSIDE TO INSIDE DIMENSION.
   - B. STYLE:
     (EXAMPLE: STUD OR JOIST SECTION = "S")
     THE FOUR ALPHA CHARACTERS USED TO DESIGNATE THE TYPE OF SECTION ARE:
     - S = STUD OR JOIST SECTIONS
     - T = TRACK SECTIONS
     - U = CHANNEL SECTIONS
     - F = FURRING CHANNEL SECTIONS
   - C. FLANGE WIDTH:
     (EXAMPLE: 1 5/8" = 1.625" = 162/100 INCHES)
     ALL MEMBER FLANGE WIDTH ARE TAKEN IN 1/100 INCH INCREMENTS.
   - D. MATERIAL THICKNESS:
     (EXAMPLE: 0.054" = 54 MIL = 54/1,000 INCHES)
     MATERIAL THICKNESS IS THE MINIMUM BASE METAL THICKNESS IN MILS. MINIMUM BASE METAL THICKNESS REPRESENTS 95% OF THE DESIGN THICKNESS.

(A) (B) (C) (D)
600 S 162 - 54

3. ALL CALCULATED MEMBER PROPERTIES PER AISI SPECIFICATIONS ARE BASED ON THE FOLLOWING THICKNESSES:

MINIMUM THICKNESS	REFERENCE GAGE	DESIGN THICKNESS
33 MIL	20 GA - STRUCTURAL	0.0346"
43 MIL	18 GA	0.0451"
54 MIL	16 GA	0.0566"
68 MIL	14 GA	0.0713"
97 MIL	12 GA	0.1017"
118 MIL	10 GA	0.1242"

4. ALL LIGHT GAGE METAL FRAMING SHALL CONFORM WITH THE FOLLOWING:

GALVANIZED STUDS & TRACKS: 12 (97), 14 (68) OR 16 (54) GAGE (MILS)	ASTM A653 SQ, GR 50 (Fy = 50,000 PSI)
GALVANIZED STUDS & TRACKS: 18 (43), 20 (33) GAGE (MILS)	ASTM A653 SQ, GR 33 (Fy = 33,000 PSI)
GALVANIZED BACKING PLATES:	ASTM A653 SQ, GR 50 (Fy = 50,000 PSI)
GALVANIZED END CLOSURES, BRIDGING AND ACCESSORIES	ASTM A653 SQ, GR 33 (Fy = 33,000 PSI)

5. ALL LIGHT GAGE METAL FRAMING SHALL BE GALVANIZED.
6. DOUBLE VERTICAL STUDS SHALL BE STITCH WELDED TOGETHER ON BOTH FLANGES WITH 1/16" GROOVE WELDS x 1" LONG AT 12" ON CENTER, U.N.O. ON DRAWINGS.
7. TOP AND BOTTOM TRACK GAGE THICKNESS SHALL MATCH THE GAGE THICKNESS OF THE WALL STUDS, U.N.O.
8. MINIMUM STUD PROPERTIES SHALL BE PER AISI S100-16.
   THE FOLLOWING ARE ACCEPTABLE MANUFACTURERS:
   - CLARK DIETRICH (ICC ESR 4782 AND 4784P)
   - CEMCO (ICC ESR 3016)
   - APPROVED EQUAL
9. ALL SHEET METAL SCREWS SHALL PROTRUDE 1/4" MIN THROUGH METAL FRAMING.
10. THE CONTRACTOR IS PROHIBITED FROM USING TORCHES TO BURN HOLES IN TRACKS OR STUDS.
11. PUNCHED OPENINGS IN THE PARTITION WALL STUDS AND EXTERIOR WALL STUDS NEED TO BE LOCATED A MINIMUM OF 1.5 TIMES THE DEPTH OF THE STUD FROM THE CONNECTION AT THE FLOOR, CONNECTION AT THE UNDERSIDE OF THE DECK, AND CONNECTIONS OF HEADERS AND SILLS TO JAMBS.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED BY AN APPROVED AND LICENSED FABRICATOR IN ACCORDANCE WITH AISC 360-16 AND CHAPTER 22 OF THE CODE.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE ASTM DESIGNATION AS INDICATED BELOW (UNO):

W SHAPES, WT SHAPES	A992
ANGLES, CHANNELS	A36
HSS	A500 GRB
SIMPLE SHEAR TAB CONNECTION PLATES (AS NOTED ON DWG'S)	A36
HIGH STRENGTH BOLTS (AS NOTED ON DRAWINGS)	A325/F1852, A490SC/F2280SC A325SC/F1852SC
ANCHOR RODS (AS NOTED ON DRAWINGS)	F1554 GR36
COMMON/MACHINE BOLTS	A307 GR A

3. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STEEL FOR REVIEW AND APPROVAL BY THE AOR AND SEOR PRIOR TO FABRICATION.
4. BOLT HOLES USED IN STEEL SHALL BE 1/16" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, EXCEPT AS NOTED.
5. ALL STRUCTURAL STEEL SURFACES THAT ARE ENCASED IN CONCRETE, MASONRY, SPRAY ON FIREPROOFING, OR ARE ENCASED BY BUILDING FINISH, SHALL BE LEFT UNPAINTED, EXCEPT AS REQUIRED FOR DESIGNATION OF PROTECTED ZONES.
6. PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED TO REINFORCED CONCRETE/MASONRY USING POST-INSTALLED ANCHORS, CONTRACTOR SHALL LOCATE ALL REINFORCEMENT AND CONFIRM CONSTRUCTABILTY OF ANCHOR LOCATIONS. SHOULD CONFLICTS WITH REINFORCEMENT OCCUR, CONTRACTOR SHALL COORDINATE AND SUBMIT ALTERNATE ANCHOR LOCATIONS AND REVISED STEEL FABRICATIONS TO SEOR FOR REVIEW AND APPROVAL. DO NOT CUT OR DAMAGE EXISTING REINFORCEMENT.
7. ALL STRUCTURAL STEEL AND MISCELLANEOUS METAL EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANIZED AFTER FABRICATION, UNLESS CALLED OUT TO BE PAINTED ON THE CONSTRUCTION DOCUMENTS. PROTECT FIELD WELDS EXPOSED TO THE WEATHER VIA PRIME AND PAINT OR BRUSH / COLD GALVANIZING. REFER TO ARCH DRAWINGS FOR STEEL FINISH. ALL ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) SHALL CONFORM TO REQUIREMENTS OF AISC 303-16.
8. ALL WELDING IS TO BE DONE BY CERTIFIED WELDERS USING E70XX ELECTRODES (UNO). ALL WELDS SHALL BE IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS AND THE CODE FOR WELDING IN BUILDING CONSTRUCTION (AWS D1.1-10) OF THE AMERICAN WELDING SOCIETY. SEE SPECIAL INSPECTIONS SECTION FOR WELDING INSPECTION REQUIREMENTS. ALL WELDING FOR ELEMENTS OF THE LATERAL FORCE RESISTING SYSTEM SHALL PER AWS D1.8-09.
9. THE CONTRACTOR SHALL SUBMIT ALL WELDING PROCEDURE SPECIFICATIONS FOR REVIEW AND APPROVAL BY SEOR. THE SUBMITTED WELDING PROCEDURES SHALL INCLUDE ONLY THOSE PROCEDURES RELEVANT TO THIS PROJECT. ALL WELDED JOINTS SHALL BE PREQUALIFIED PER AWS OR BE QUALIFIED BY TEST PER AWS. A PROCEDURE QUALIFICATION RECORD (PQR) SHALL BE INCLUDED WITH THE WPS IF THE WELDING PROCEDURE OR JOINT IS QUALIFIED BY TESTING. THE ELECTRODE MANUFACTURER AND PRODUCT/TRADE NAME SHALL BE IDENTIFIED IN THE WPS IN ADDITION TO THE AWS ELECTRODE CLASSIFICATION NAME. A COPY OF THE ELECTRODE MANUFACTURER'S TECHNICAL DATA SHEETS WITH THE RECOMMENDED WELDING PARAMETERS SHALL BE SUBMITTED WITH THE WPS.
10. 100 PERCENT ULTRASONIC TESTING IS REQUIRED FOR ALL COMPLETE JOINT PENETRATION GROOVE WELDS.
11. IF INTERMIXING OF WELD FILLER MATERIAL IS REQUIRED AT SPECIFIC WELDED JOINTS, AND IF ONE OF THE FILLER METALS IS FCAW-S, SUBMIT A WELDING PROCEDURE SPECIFICATION (WPS) AND QUALIFY BY TESTING.
12. DISCONTINUITIES IN WELDS CREATED BY ERRORS OR BY FABRICATION OR ERECTION OPERATIONS, SUCH AS TACK WELDS, ERECTION AIDS, AIR ARC GOUGING AND FLAME CUTTING SHALL BE REPAIRED AS REQUIRED BY SEOR.

STEEL HEADED STUDS

1. ALL HEADED STUDS WELDED TO BEAMS OR CONCRETE CONNECTIONS SHALL BE NELSON STUDS (ICC-ESR 2856), OR APPROVED EQUAL. STUD MATERIAL SHALL BE IN ACCORDANCE WITH AWS D1.1-10, "STRUCTURAL WELDING CODE-STEEL"
2. NELSON SHEAR CONNECTOR STUDS SHALL BE AUTOMATICALLY END WELDED IN THE SHOP OR IN THE FIELD WITH EQUIPMENT AND PROCEDURES RECOMMENDED BY NELSON STUD WELDING, INC. AND COMPLY WITH AISC 360-16 SECTION M2, ITEM 4 AND AWS D1.1-10. WELDING SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE.
3. ALL SURFACES TO RECEIVE NELSON STUDS SHALL BE CLEAN, UNPAINTED AND FREE OF HEAVY RUST AND MILL SCALE, DIRT, SAND OIL, WATER OR OTHER DELETERIOUS MATERIALS.

STEEL HEADED STUDS

1. ALL HEADED STUDS WELDED TO BEAMS OR CONCRETE CONNECTIONS SHALL BE NELSON STUDS (ICC-ESR 2856), OR APPROVED EQUAL. STUD MATERIAL SHALL BE IN ACCORDANCE WITH AWS D1.1-10, "STRUCTURAL WELDING CODE-STEEL"
2. NELSON SHEAR CONNECTOR STUDS SHALL BE AUTOMATICALLY END WELDED IN THE SHOP OR IN THE FIELD WITH EQUIPMENT AND PROCEDURES RECOMMENDED BY NELSON STUD WELDING, INC. AND COMPLY WITH AISC 360-16 SECTION M2, ITEM 4 AND AWS D1.1-10. WELDING SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE.
3. ALL SURFACES TO RECEIVE NELSON STUDS SHALL BE CLEAN, UNPAINTED AND FREE OF HEAVY RUST AND MILL SCALE, DIRT, SAND OIL, WATER OR OTHER DELETERIOUS MATERIALS.

MASONRY

1. MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF "SPECIFICATION FOR MASONRY STRUCTURES" (TMS 402-16) PUBLISHED BY THE MASONRY SOCIETY AND WITH CHAPTER 21 OF THE CODE.
2. CONCRETE MASONRY UNITS SHALL COMPLY WITH SECTION 2103.1 OF THE CODE AND BE HOLLOW LOAD BEARING CONFORMING TO ASTM C90 AND MEET THE FOLLOWING REQUIREMENTS:

WALL DESIGN STRENGTH	NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS	DENSITY
f'm = 2,000 PSI	2,000 PSI MINIMUM	MEDIUM WIEGHT
f'm = 2,500 PSI	3,250 PSI MINIMUM	MEDIUM WIEGHT

3. MORTAR SHALL CONFORM TO SECTION 2103.2 OF THE CODE AND ASTM C270 AND HAVE THE FOLLOWING PROPERTIES AND STRENGTHS:

WALL DESIGN STRENGTH	MORTAR TYPE	MORTAR 28 DAY COMPRESSIVE STRENGTH
f'm = 2,000 PSI	S	2,000 PSI MINIMUM
f'm = 2,500 PSI	M	2,500 PSI MINIMUM

SEE NOTES UNDER "TEST AND INSPECTION REQUIREMENTS" FOR TESTING REQUIREMENTS.

4. GROUT SHALL COMPLY WITH SECTION 2103.3 OF THE CODE AND ASTM C476. GROUT SHALL MEET THE FOLLOWING REQUIREMENTS:

WALL DESIGN STRENGTH	COMPRESSIVE STRENGTH	GROUT 28 DAY MIX DESIGN
f'm = 2,000 PSI	2,000 PSI	3 PARTS SAND 2 PARTS PEA GRAVEL 1 PART PORTLAND CEMENT 8-11 INCH SLUMP
f'm = 2,500 PSI	-	SUBMIT MIX DESIGN

SEE NOTES UNDER "TEST AND INSPECTION REQUIREMENTS" FOR TESTING REQUIREMENTS.

5. MORTAR AND GROUT COMPONENTS SHALL CONFORM WITH THE FOLLOWING:

COMPONENT	ASTM	NOTES
SAND	ASTM C144	
LIME	ASTM C207	
PORTLAND CEMENT	ASTM C150	TYPE I or II, LOW ALKALI, < 6 MONTHS OLD
PEA GRAVEL	ASTM C301	

6. ADMIXTURES SHALL NOT BE USED IN GROUT EXCEPT BY SPECIFIC CONSENT OF SEOR.
   SEE NOTES UNDER "TEST AND INSPECTION REQUIREMENTS" FOR TESTING REQUIREMENTS.
7. REINFORCING BARS - SEE NOTES UNDER "REINFORCING STEEL" FOR REQUIREMENTS.
8. PROVIDE A MINIMUM OF 1/2" CLEAR BETWEEN MAIN REINFORCING AND MASONRY UNITS.
9. ALL CELLS SHALL BE GROUTED SOLID.
10. DESIGN f'm = 2,000 PSI FOR CMU CONSTRUCTION, TYPICAL. PRISM TESTING SHALL BE PERFORMED AS PER THE REQUIREMENTS OF PROJECT SPECIFICATIONS. SEE ALSO NOTES UNDER "TEST AND INSPECTION REQUIREMENTS" FOR REQUIREMENTS.
11. USE RUNNING BOND PATTERN UNO BY ARCHITECT. USE OPEN ENDED UNITS FOR STACKED BOND PATTERN.
12. USE OF "HIGH-LIFT" GROUT CONSTRUCTION IS SUBJECT TO APPROVAL BY SEOR AND JURISDICTION. MAX GROUT LIFT HEIGHT SHALL BE 5'-4" IN ACCORDANCE WITH TMS 602-16 ARTICLE 3.5D. GROUT LIFT HEIGHT MAY BE INCREASED TO 12'-8" IF THE FOLLOWING CONDITIONS ARE MET:
    - A. MASONRY HAS CURED FOR AT LEAST 4 HOURS
    - B. GROUT SLUMP IS MAINTAINED BETWEEEN 10" - 11"
    - C. NO BOND BEAMS OCCUR BETWEEN TOP AND BOTTOM OF POUR HEIGHT
    - D. CLEANOUTS ARE PROVIDED AT 32" MAX OC FOR CLEANING AND INSPECTION PRIOR TO GROUTING PER TMS 602-16 ARTICLE 3.2F.
13. CONSOLIDATE GROUT AT TIME OF PLACEMENT USING MECHANICAL VIBRATION OR USE A SELF CONSOLIDATING GROUT
14. EMBEDDED PIPES AND CONDUITS
    - A. CONDUITS, PIPES AND SLEEVES MAY BE EMBEDDED IN MASONRY ONLY IF COMPLYING WITH THE FOLLOWING REQUIREMENTS:
      - a. THEY SHALL BE SPACED NO CLOSER THAN 3 DIAMETERS ON CENTER
      - b. THE MAXIMUM AREA OF VERTICAL PIPES, CONDUITS, OR SLEEVES PLACED IN MASONRY COLUMNS OR PILASTERS SHALL NOT EXCEED 2 PERCENT OF THE CROSS SECTION
      - c. THE MAXIMUM NUMBER OF PIPES ALLOWED IN A CELL FOR WALLS IS THE FOLLOWING:

WALL THICKNESS	REINFORCED CELL	UN-REINFORECED CELL
8"	(2) 1/2" Ø (1) 3/4" Ø	(3) 1/2" Ø (2) 3/4" Ø (1) 1" Ø
12"	(4) 1/2" Ø (3) 3/4" Ø (2) 1" Ø (1) 1 1/4" Ø	(5) 1/2" Ø (4) 3/4" Ø (3) 1" Ø (2) 1 1/4" Ø

      - d. WRAP PIPES AND FITTINGS WITH 1/4" FOAM TAPE MIN.
    - B. PIPES SHALL NOT BE EMBEDDED IN MASONRY WHEN:
      - a. CONTAINING LIQUID GAS OR VAPORS AT TEMPERATURES HIGHER THAN 150° F
      - b. UNDER PRESSURE IN EXCESS OF 55 PSI
      - c. CONTAINING WATER OR OTHER LIQUIDS SUBJECT TO FREEZING
    - C. ALUMINUM PIPES SHALL NOT BE EMBEDDED IN CMU

CITY OF SAN LUIS OBISPO

PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: GENERAL NOTES

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS S 5685 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-103

SUBMITTALS

1. THE FOLLOWING SUBMITTALS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER:
   A. STEEL INCLUDING MISC. METALS
      a. SHOP DRAWINGS FOR FABRICATION AND ERECTION
      b. WPS's (INCLUDING PQR'S AS APPLICABLE)
      c. REINFORCING STEEL
      d. SHOP DRAWINGS FOR FABRICATION AND PLACEMENT
2. BEFORE SUBMITTING EACH SUBMITTAL, (INCLUDES SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND SIMILAR SUBMITTALS), THE CONTRACTOR SHALL HAVE:
   A. REVIEWED AND COORDINATED EACH SUBMITTAL WITH OTHER SUBMITTALS AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS. THIS INCLUDES THE CONTRACTOR REVIEWING AND VERIFYING THAT THE SUBMITTAL IS COORDINATED AMONG ALL CONSTRUCTION TRADES;
   B. DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, QUANTITIES, DIMENSIONS , SPECIFIED PERFORMANCE AND DESIGN CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR INFORMATION
   C. DETERMINED AND VERIFIED ALL INFORMATION RELATIVE TO THE CONTRACTOR'S RESPONSIBILITIES FOR MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS.
   D. REVIEWED AND VERIFIED THAT THE ARCHITECTS OR ENGINEER'S COMMENTS FROM PREVIOUS SUBMITTAL ROUNDS HAVE BEEN ADDRESSED.
3. EACH SUBMITTAL SHALL BEAR A STAMP OR SPECIFIC WRITTEN CERTIFICATION THAT THE CONTRACTOR HAS SATISFIED THEIR OBLIGATIONS UNDER THE CONTRACT DOCUMENTS WITH RESPECT TO THE CONTRACTOR'S REVIEW AND APPROVAL OF THAT SUBMITTAL.
4. THE CONTRACTOR'S OBLIGATION TO PERFORM AND COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS SHALL BE ABSOLUTE.
   a. REVIEW AND APPROVAL OF SHOP DRAWINGS BY THE ARCHITECT AND/OR ENGINEER DOES NOT CONSTITUTE APPROVAL OF A CHANGE REQUEST, SUBSTITUTION OR MODIFICATION TO THE CONTRACT DRAWINGS.
   b. THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED OF CHANGE REQUESTS, SUBSTITUTIONS OR MODIFICATIONS TO THE CONTRACT DRAWINGS IN WRITING BEFORE AND SEPARATE FROM THE SUBMITTAL PRIOR TO SUBMISSION.
5. FABRICATION FOR ITEMS IN THESE DOCUMENTS SHALL NOT COMMENCE UNTIL THE SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE ENGINEER.

STRUCTURAL OBSERVATIONS

1. IN ACCORDANCE WITH SECTION 1704.6 OF THE CODE STRUCTURAL OBSERVATIONS SHALL BE PERFORMED FOR THE FOLLOWING ELEMENTS OF CONSTRUCTION:
   A. FOUNDATION REINFORCING
      SHEATHING NAILING FOR THE WOOD LATERAL FORCE-RESISTING SYSTEM, INCLUDING DIAPHRAGMS AND
2. THE OBJECTIVE OF THE STRUCTURAL OBSERVATION IS TO BECOME FAMILIAR WITH THE PROGRESS AND QUALITY OF THE CONTRACTOR'S WORK AND DETERMINE IF THE WORK IS BEING COMPLETED IN GENERAL CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS
   A. STRUCTURAL OBSERVATIONS ARE NOT INSPECTIONS AND SHALL NOT BE USED AS A REPLACEMENT FOR THE SPECIAL INSPECTIONS REQUIRED BY THE CODE OR REFERENCED STANDARD OR FOR SPECIAL INSPECTIONS REQUIRED IN THIS DOCUMENT.
   B. THE PERSON COMPLETING THE STRUCTURAL OBSERVATIONS DOES NOT HAVE RESPONSIBILITY FOR ANY ACTS OR OMISSIONS BY THE CONTRACTOR OR OF ANY OTHER ENTITY PROVIDING MATERIALS OR SERVICES ON THE PROJECT.
3. ADEQUATE NOTIFICATION SHALL BE PROVIDED TO THE STRUCTURAL ENGINEER PERFORMING OBSERVATIONS, A MINIMUM OF (2) WORKING DAYS, PRIOR TO OBSERVATION OF THE WORK.

STATEMENT OF SPECIAL INSPECTIONS

1. THIS STATEMENT OF SPECIAL INSPECTIONS HAS BEEN PREPARED PURSUANT TO SECTION 1704.3 OF THE CODE . THIS SECTION DETAILS BOTH REQUIRED SPECIAL INSPECTIONS AND TESTS INCLUDING TESTING PER SECTION 1705 OF THE CODE. THE FOLLOWING SHALL BE OBSERVED DURING THEIR IMPLEMENTATION:
   A. GENERAL:
      a. STRUCTURAL VERIFICATIONS, INSPECTIONS AND TESTS SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 17 OF THE CODE AND/OR THE APPLICABLE REFERENCE STANDARD.
   B. OWNER REQUIREMENTS:
      a. THE OWNER OR OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN SECTION 1705 OF THE CODE AND IN THIS STATEMENT OF INSPECTIONS.
   C. SPECIAL INSPECTOR QUALIFICATIONS:
      a. THE SPECIAL INSPECTIONS SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING HIS OR HER COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING. THE EXPERIENCE OR TRAINING SHALL BE CONSIDERED RELEVANT WHEN THE DOCUMENTED EXPERIENCE OR TRAINING IS RELATED IN COMPLEXITY TO THE SAME TYPE OF SPECIAL INSPECTION ACTIVITIES FOR PROJECTS OF SIMILAR COMPLEXITY AND MATERIAL QUANTITIES.
   D. CONTRACTOR REQUIREMENTS:
      a. SPECIAL INSPECTION IS IN ADDITION TO THE CONTRACTOR'S QUALITY CONTROL INSPECTIONS AND TESTING. THE CONTRACTOR'S QUALITY CONTROL INSPECTIONS AND TESTING SHALL OCCUR PRIOR TO SPECIAL INSPECTION AND REPORTS SHALL BE AVAILABLE TO THE SPECIAL INSPECTOR.
      b. THE CONTRACTOR SHALL ENSURE THAT THE WORK FOR WHICH SPECIAL INSPECTION IS REQUIRED REMAINS ACCESSIBLE AND EXPOSED FOR SPECIAL INSPECTION PURPOSES UNTIL COMPLETION OF THE REQUIRED SPECIAL INSPECTION.
      c. ANY CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE MAIN WIND OR SEISMIC FORCE RESISTING SYSTEM SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.
   E. SPECIAL INSPECTOR REPORT REQUIREMENTS:
      a. THE SPECIAL INSPECTOR SHALL KEEP RECORD OF INSPECTIONS
      b. THE SPECIAL INPSECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND TO THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD.
      c. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS.
      d. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
      e. IF NOT CORRECTED DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD PRIOR TO THE COMPLETION OF THAT PHASE OF WORK.
      f. A FINAL REPORT DOCUMENTING SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED SHALL BE SUBMITTED TO THE BUILDING OFFICIAL.

SHOP FABRICATION

1. SHOP FABRICATION REQUIRES SPECIAL INSPECTION IN ACCORDANCE WITH CODE SECTION 1704.2.5. EXCEPTION: SHOP SPECIAL INSPECTIONS ARE NOT REQUIRED WHEN WORK IS DONE ON THE PREMISES OF FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK IN ACCORDANCE WITH CODE SECTION 1704.2.5.1. THE FOLLOWING ACCREDITATIONS MEET THE REQUIREMENTS OF THIS EXCEPTION:
   A. STEEL BUILDINGS (OR STEEL ELEMENTS IN OTHER BUILDINGS)
      a. FOR GENERAL STEEL BUILDINGS OR ELEMENTS, THE FABRICATOR SHALL BE AN AISC CERTIFIED FABRICATOR IN ACCORDANCE WITH THE AISC CERTIFICATION PROGRAM FOR STRUCTURAL STEEL FABRICATORS (AISC 201-06).
      b. OTHER ACCREDITATION DEEMED ACCEPTABLE BY THE AUTHORITY HAVING JURISDICTION.
      c. IF FABRICATION IS PERFORMED BY AN APPROVED FABRICATOR A CERTIFICATE OF COMPLIANCE MUST BE PROVIDED TO THE BUILDING INSPECTOR THAT THE MATERIALS SUPPLIED AND WORK PERFORMED BY THE FABRICATOR ARE IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS.
      d. IF FABRICATION IS NOT PERFORMED BY AN APPROVED FABRICATOR WELDING INSPECTION REPORTS MUST BE SUBMITTED TO THE BUILDING OFFICIAL BY AN APPROVED TESTING AGENCY.
         e.g. NONDESTRUCTIVE TESTING (NDT) MAY BE PERFORMED BY THE FABRICATOR, HOWEVER THE QA AGENCY SHALL REVIEW THE FABRICATOR'S NDT REPORTS.

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

GENERAL NOTES

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS No. S 6885 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-104

REQUIRED VERIFICATION AND INSPECTIONS

SOILS
CODE TABLE 1705.6

SPECIAL INSPECTION OR TEST	CONTINUOUS	PERIODIC
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	—	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	—	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	—	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	—
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	—	X

REQUIRED VERIFICATION AND INSPECTIONS

MASONRY
LEVEL 2 QUALITY ASSURANCE
MINIMUM TESTS

PRIOR TO CONSTRUCTION, VERIFY CERTIFICATES OF COMPLIANCE USED IN MASONRY CONSTRUCTION IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5

VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5 & 1.6 FOR SELF-CONSOLIDATING GROUT

VERIFICATION OF f'_m AND f'_{AAC} IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.4 B PRIOR TO CONSTRUCTION, EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE

MINIMUM **SPECIAL** INSPECTION

INSPECTION TASK	FREQUENCY [(a)]		REFERENCE FOR CRITERIA	
	CONT	PERIODIC	TMS 402	TMS 602
1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS		X		Art. 1.5
2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
a. PROPORTIONS OF SITE-PREPARED MORTAR		X		Art. 2.1, 2.6 A
b. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		X		Art. 2.4 B, 2.4 H
c. GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, ANCHOR BOLTS AND PRESTRESSING TENDONS AND ANCHORAGES		X	Art. 3.4, 3.6A	
d. PRESTRESSING TECHNIQUE		X		Art. 3.6 B
e. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X [(b)]	X [(c)]		Art. 2.1 C
f. SAMPLE PANEL CONSTRUCTION		X	Art. 1.6 D	
3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
a. GROUT SPACE		X		Art. 3.2 D, 3.2 F
b. PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGES		X	SEC. 10.8, 10.9	Art. 2.4, 3.6
c. PLACEMENT OF REINFORCEMENT, CONNECTORS AND ANCHOR BOLTS		X	SEC. 6.3.1, 6.3.6, 6.3.7	Art. 3.2 E, 3.4,
d. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS		X		Art. 2.6 B, 2.4 G.1.b
4. VERIFY DURING CONSTRUCTION:				
a. MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTALS		X		Art. 1.5
b. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION		X		Art. 3.3 B
c. SIZE AND LOCATION OF STRUCTURAL ELEMENTS		X		Art. 3.3 F
d. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION		X	SEC. 1.2.1(e), 6.1.4.3, 6.2.1	
e. WELDING OF REINFORCEMENT	X		SEC. 6.1.6.2	
f. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F)		X		Art. 1.8 C, 1.8 D
g. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	X			Art. 3.6 B
h. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X			Art. 3.5, 3.6 C
i. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X [(b)]	X [(c)]		Art. 3.3 B.9, 3.3 F.1.b
5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS		X		Art. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

(a) FREQUENCY REFERS TO THE FREQUENCY OF SPECIAL INSPECTION, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODIC DURING THE TASK LISTED, AS DEFINED IN THE TABLE
(b) REQUIRED FOR THE FIRST 5000 SQ FT OF AAC MASONRY
(c) REQUIRED AFTER THE FIRST 5000 SQ FT OF AAC MASONRY

REQUIRED VERIFICATION AND INSPECTIONS

WOOD
CODE CHAPTER 17 AND REFERENCED 2018 NDS AND AWC SDPWS-2015

SPECIAL INSPECTION OR TEST	CONTINUOUS	PERIODIC	CBC REFERENCE
3. WOOD LATERAL FORCE-RESISTING SYSTEM WITH FASTENER SPACING OF THE SHEATHING LESS THAN OR EQUAL TO 4" OC. - WOOD DIAPHRAGMS - DRAG STRUTS	—	X	1705.12.2
4. WOOD LATERAL FORCE-RESISTING SYSTEM WITH FASTENER SPACING OF THE SHEATHING GREATER THAN 4" OC (NOT REQUIRED) - WOOD DIAPHRAGMS - DRAG STRUTS	—	—	1705.12.2
6. METAL PLATE CONNECTED WOOD WITH OVERALL HEIGHTS OF 60 INCHES OR GREATER - PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACING IN ACCORDANCE WITH APPROVED TRUSS SUBMITTAL PACKAGE	—	X	1705.5.2

REQUIRED VERIFICATION AND INSPECTIONS CONT.

STEEL ELEMENTS OF COMPOSITE CONSTRUCTION
DECK AND HEADED STUDS

INSPECTION TASKS PRIOR TO CONCRETE PLACEMENT *(AISC 360-16 N.6.1)*			
1. PLACEMENT AND INSTALLATION OF STEEL DECK	P	P	—
2. PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	P	P	—
2. DOCUMENT ACCEPTANCE OR REJECTION OF STEEL ELEMENTS	P	P	—

0 - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
P - PERFORM THESE TAKS FOR EACH WELDED JOINT OR MEMBER, EACH BOLTED CONNECTION, OR STEEL ELEMENT.

REFER TO CONCRETE TABLE FOR REQUIRED GROUTING INSPECTIONS BELOW BASE PLATES.

REQUIRED VERIFICATION AND INSPECTIONS

CONCRETE CONSTRUCTION
CODE TABLE 1705.3

SPECIAL INSPECTION OR TEST	CONTINUOUS	PERIODIC	REFERENCED STANDARD	CBC REFERENCE
1. INSPECT REINFORCMENT AND VERIFY PLACEMENT.	—	X	ACI 318: CH 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706 b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" AND c. INSPECT ALL OTHER WELDS	— — X	X X —	AWS D1.4 ACI 318: 26.6.4	—
3. INSPECT ANCHORS CAST IN CONCRETE	—	X	ACI 318: 17.8.2	—
5. VERIFY USE OF REQUIRED MIX DESIGN	—	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	—	ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12	1908.10
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	—	X	ACI 318: 26.5.3-26.5.5	1908.9
12. INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	—	X	ACI 318: 26.11.1.2 (b)	—

SPECIAL INSPECTIONS LISTED FOR CONCRETE ALSO APPLY TO GROUTING OPERATIONS.

REQUIRED VERIFICATION AND INSPECTIONS

STEEL
WELDING

INSPECTION TASKS PRIOR TO WELDING *(AISC 360-16 N.5.4-1)*	QC	QA	AWS 2015 D1.1 REFERENCE
1. WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE	P	P	6.3
2. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAIALABLE	P	P	6.2
3. WPS AVAILABLE	P	P	-
4. MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O	6.2
5. WELDER IDENTIFICATION SYSTEM	O	O	6.4
6. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY) - JOINT PREPARATION - DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) - CLEANLINESS (CONDITION OF STEEL SURFACES) - TACKING (TACK WELD QUALITY AND LOCATION) - BACKING TYPE AND FIT (IF APPLICABLE)	O	O	6.5.2 5.22 5.15 5.18 5.10, 5.22.1.1
7. FIT-UP OF GROOVE WELDS OF HSS T-, Y-, AND K-JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY) - JOINT PREPARATION - DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) - CLEANLINESS (CONDITION OF STEEL SURFACES) - TACKING (TACK WELD QUALITY AND LOCATION)	P	O	- - - -
8. CONFIGURATION AND FINISH OF ACCESS HOLES	O	O	6.5.2, 5.1.7 & AISC 360-16 J1.6
9. FIT-UP OF FILLET WELDS - DIMENSIONS (ALIGNMENT, GAPS AT ROOT) - CLEANLINESS (CONDITION OF STEEL SURFACES) - TACKING (TACK WELD QUALITY AND LOCATION)	O	O	5.22.1 5.15 5.18
10. CHECK WELDING EQUIPMENT	O	—	6.2, 5.11
INSPECTION TASKS DURING WELDING *(AISC 360-16 N.5.4-2)*			
1. CONTROL AND HANDLING OF WELDING CONSUMABLES -PACKAGING -EXPOSURE CONTROL	O	O	6.2 5.3.1 5.3.2 (SMAW) 5.3.3 (SAW)
2. NO WELDING OVER CRACKED TACK WELDS	O	O	5.18
3. ENVIRONMENTAL CONDITIONS - WIND SPEED WITHIN LIMITS - PRECIPITATION AND TEMPERATURE	O	O	5.12.1 5.12.2
4. WPS FOLLOWED - SETTINGS ON WELDING EQUIPMENT - TRAVEL SPEED - SELECTED WELDING MATERIALS - SHIELDING GAS TYPE/FLOW RATE - PREHEAT APPLIED - INTERPASS TEMPERATURE MAINTAINED (MIN/MAX) - PROPER POSITIONS (F, V, H, OH)	O	O	6.3.3, 6.5.2, 5.5, 5.21 5.6, 5.7
5. WELDING TECHNIQUES - INTERPASS AND FINAL CLEANING - EACH PASS WITHIN PROFILE LIMITATIONS - EACH PASS MEETS QUALITY REQUIREMENTS	O	O	6.5.2, 6.5.3, 5.24 5.30.1
6. PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	P	P	-
INSPECTION TASKS AFTER WELDING *(AISC 360-16 N.5.4-3)*			
1. WELDS CLEANED	O	O	5.30.1
2. SIZE, LENGTH AND LOCATION OF WELDS	P	P	6.5.1
3. WELDS MEET VISUAL ACCEPTANCE CRITERIA - CRACK PROHIBITION - WELD/BASE-METAL FUSION - CRATER CROSS SECTION - WELD PROFILES - WELD SIZE - UNDERCUT - POROSITY	P	P	6.5.3 TABLE 6.1(1) TABLE 6.1(2) TABLE 6.1(3) TABLE 6.1(4), 5.24 TABLE 6.1(6) TABLE 6.1(7) TABLE 6.1(8)
4. ARC STRIKES	P	P	5.29
5. k-AREA	P	P	AISC 360-16 CA3.1c & J10.8
6. WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES [(b)]	P	P	-
7. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P	P	5.10, 5.31
8. REPAIR ACTIVITIES	P	P	6.5.3, 5.26
9. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P	6.5.4, 6.5.5
10. NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR	O	O	-

STEEL
BOLTING

INSPECTION TASKS PRIOR TO BOLTING *(AISC 360-16 N.5.6-1)*	QC	QA	2014 RCSC SPEC. REFERENCE
1. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P	2.1, 9.1
2. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O	FIGURE C-2.1, 9.1 (SEE ASTM STANDARDS)
3. CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)	O	O	2.3.2, 2.7.2, 9.1
4. CORRECT BOLTING DETAILS SELECTED FOR THE JOINT DETAIL.	O	O	4, 8
5. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS.	O	O	3, 9.1, 9.3
6. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED.	P	O	7, 9.2
7. PROTECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	O	O	2.2, 8, 9.1
INSPECTION TASKS DURING BOLTING *(AISC 360-16 N.5.6-2)*			
1. FASTENER ASSEMBLIES, PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED.	O	O	8.1, 9.1
2. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRE-TENSIONING OPERATION	O	O	8.1, 9.1
3. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O	8.2, 9.2
4. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES.	O	O	8.2, 9.2
INSPECTION TASKS AFTER BOLTING *(AISC 360-16 N.5.6-3)*			
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P	—

CITY OF SAN LUIS OBISPO

PROJECT TITLE: **MISSION PLAZA ENHANCEMENTS**

SHEET TITLE: SPECIAL INSPECTIONS & TESTS

DESIGNED BY: C. CECIL
DRAWN BY: A. MERCADO
CHECKED BY: M. DOREMUS
APPROVED BY:
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
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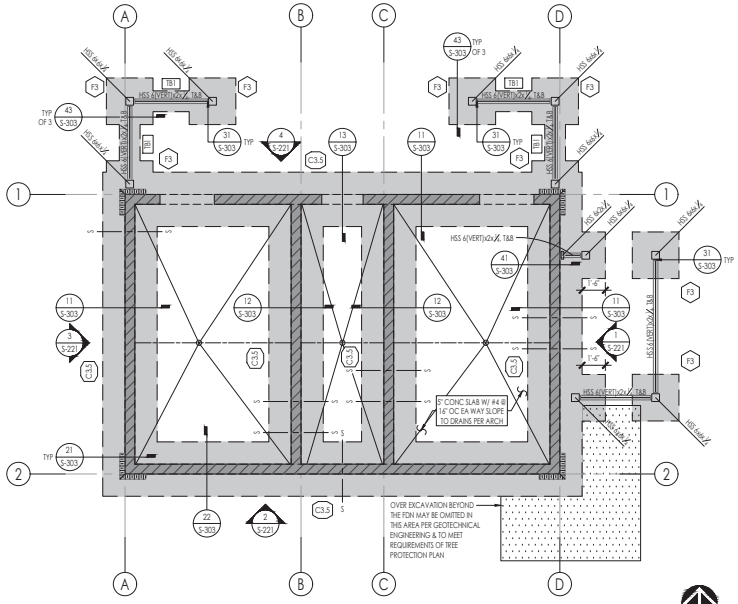
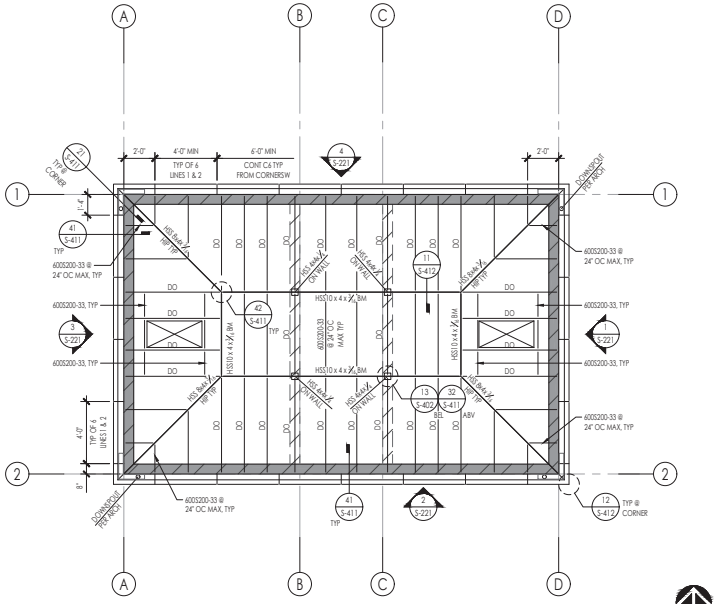
SHEET NO. S-105



1 RESTROOM FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



2 RESTROOM ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

FOUNDATION PLAN NOTES

1. REFER TO THE FOLLOWING SHEETS FOR TYPICAL DETAILS:

DESCRIPTION	SHEET (S)
SYMBOLS AND ABBREVIATIONS	S-101
STRUCTURAL GENERAL NOTES	S-102 - S-104
TESTING AND INSPECTION	S-105
TYPICAL CONCRETE DETAILS	S-301 -S-302
TYPICAL MASONRY DETAILS	S-303, S-401-403
TYPICAL STEEL DETAILS	S-404 - S-407

2. SEE ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR ELEVATIONS. REFERENCE FINISHED FLOOR ELEVATION = 0'-0" CORRESPONDS TO FINISHED FLOOR ELEVATION.
3. ALL DIMENSIONS SHOWN ARE FROM FACE OF CONCRETE/MASONRY, FACE OF SHEATHING, OR CENTERLINE OF COLUMN. ALL COLUMNS ARE CENTERED IN STUD WALLS, UNO.
4. FOR ANY DIMENSIONAL INFORMATION NOT SHOWN, SEE ARCHITECTURAL DRAWINGS.
5. SEE ARCHITECTURAL DRAWINGS FOR ANY EMBEDDED ITEMS AND ALL EXTERIOR CONCRETE PAVING.
6. SEE PLANS AND ARCHITECTURAL DRAWINGS FOR DEPRESSIONS AND/OR SLOPES IN CONCRETE SLABS.
7. SEE ARCHIECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS IN BEARING AND NON-BEARING WALLS.
8. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF INTERIOR NON-BEARING PARTITIONS.
9. SEE ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL EMBEDDED ITEMS AND SLAB PENETRATIONS.
10. FOR TYPICAL SLAB-ON-GRADE REQUIREMENTS, INCLUDING SLAB JOINTS, SEE DETAIL 31/S-301.
11. THE BUILDING PAD SHALL BE PREPARED AS OUTLINED IN DETAIL 53/S-301. THE BUILDING OFFICIAL SHALL REQUIRE PAD CERTIFICATION BY A GEOTECHNICAL ENGINEER AT THEIR DISCRETION.
12. BOTTOM OF FOOTING SHALL BE, UNLESS DEEPER FOUNDATIONS ARE REQUIRED BY THE BUILDING OFFICIAL:
    A. 30" BELOW LOWEST ADJACENT GRADE AT PERIMETER, WHICHEVER IS DEEPER, UNO.
    B. 30" BELOW LOWEST ADJACENT GRADE AT INTERIOR GRADE BEAMS, WHICHEVER IS DEEPER, UNO.

SYMBOL LEGEND

- INDICATES CONCRETE CURB PER DETAIL 21/S-303
- INDICATES CONC MASONRY WALL PER DETAIL 11/S-303
- INDICATES STEPPED FOOTING PER DETAIL 33/S-301
- INDICATES SLAB CONTROL JOINT PER 11/S-302

SCHEDULES

PAD FOOTING SCHEDULE

TYPE	WIDTH	LENGTH	THICKNESS	MIN EMBED BELOW LOWEST PAD GRADE	TOP REINF	BOT REINF	DETAIL
F3	3'-0"	3'-0"	2'-0"	SEE NOTE 12	(4) #5, EW	(4) #5 , EW	43/S-303

TIE BEAM SCHEDULE

TYPE	WIDTH	THICKNESS	MIN EMBED BELOW LOWEST PAD GRADE	LONG REINF	TRANS REINF	DETAIL
TB1	1'-4"	1'-0"	SEE NOTE 12	(2) #4 @ TOP (2) #4 @ BOT	#3 @ 24" OC	32/S-303

CONTINUOUS FOOTING SCHEDULE

MARK	WIDTH	THICKNESS	MIN EMBED BELOW LOWEST ADJ GRADE	LONG REINF	STIRRUP	DETAIL
C3.5	3'-6"	1'-3"	SEE NOTE 12	(3) #5 T&B	#3 @ 12" OC	11/2 /S-303

ROOF FRAMING NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND ELEVATIONS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING, ALL DIMENSIONS TO BE VERIFIED PRIOR TO CONSTRUCTION.
    A. GRID DIMENSIONS AND HORIZONTAL CONTROL
    B. ALL DIMENSIONS, ELEVATIONS, FINISH SURFACE, SLOPES, DRAINS, SLAB DEPRESSIONS, ETC
    C. LOCATION AND EXTENT OF EXTERIOR WALL ASSEMBLIES AND OPENINGS
    D. ALL NON STRUCTURAL WALLS
2. REFER TO THE FOLLOWING SHEETS FOR TYPICAL DETAILS:

DESCRIPTION	SHEET (S)
SYMBOLS AND ABBREVIATIONS	S-101
STRUCTURAL GENERAL NOTES	S-102 - S-104
TESTING AND INSPECTION	S-105
TYPICAL CONCRETE DETAILS	S-301 -S-302
TYPICAL MASONRY DETAILS	S-303, S-401-403
TYPICAL STEEL DETAILS	S-404 - S-407

3. SEE ARCHITECTURAL DRAWINGS FOR ALL TOP OF SHEATHING AND TOP OF WALL ELEVATIONS.
4. SEE ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF PIPES, DUCTS AND OTHER ROOF PENETRATIONS. FOR ROOF PENETRATIONS NOT SHOWN ON ROOF FRAMING PLAN, SEE DETAIL 23, 33/S-406 FOR TYPICAL OPENINGS, UNO.
5. ALL INTERIOR WALLS NOT SHOWN ON THE STRUCTURAL FRAMING PLANS BUT SHOWN ON THE ARCHITECTURAL DRAWINGS SHALL BE CONSTRUCTED PER NON-BEARING PARTITION WALL DETAILS 11-43/S-404, UNO.
6. DIAPHRAGM TYPES:
   ALL ROOF DIAPHRAGMS SHALL BE TYPE A, UNO
   REFER TO 12/S-406
7. FRAMING MEMBERS AND COMPONENTS SHALL NOT BE CUT, NOTCHED, DRILLED OR OTHERWISE ALTERED IN ANY WAY WITHOUT WRITTEN CONCURRENCE AND APPROVAL OF A REGISTERED DESIGN PROFESSIONAL.
8. ALTERATIONS RESULTING IN THE ADDITION OF LOADS TO ANY MEMBER (E.G. HVAC EQUIPMENT, WATER HEATER) SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE FRAMING IS CAPABLE OF SUPPORTING SUCH ADDITIONAL LOADING.

SYMBOL LEGEND

- INDICATES CONC MASONRY WALL BELOW

CITY OF SAN LUIS OBISPO

MISSION PLAZA RESTROOM & CAFE

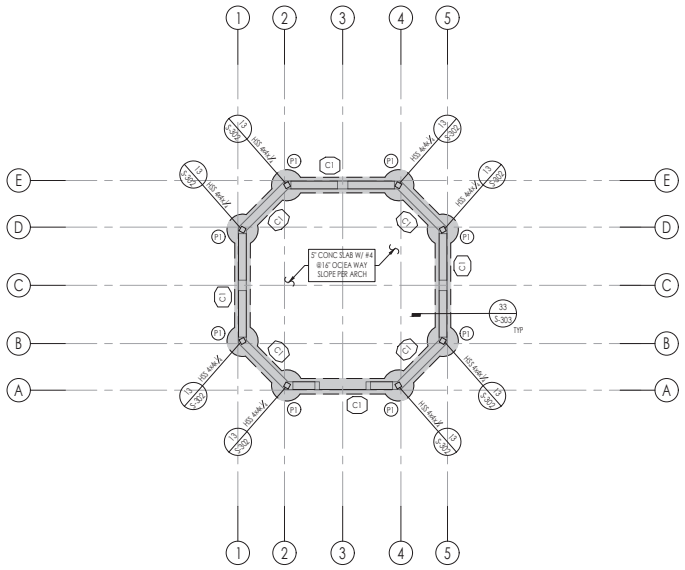
PROJECT TITLE:

RESTROOM FOUNDATION & ROOF FRAMING PLAN

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DORE MUS No. S 6885 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-201



1 KIOSK FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

FOUNDATION PLAN NOTES

1. REFER TO THE FOLLOWING SHEETS FOR TYPICAL DETAILS:

DESCRIPTION	SHEET (S)
SYMBOLS AND ABBREVIATIONS	S-101
STRUCTURAL GENERAL NOTES	S-102 - S-104
TESTING AND INSPECTION	S-105
TYPICAL CONCRETE DETAILS	S-301- S-303

2. SEE ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR ELEVATIONS. REFERENCE FINISHED FLOOR ELEVATION = 0'-0" CORRESPONDS TO FINISHED FLOOR ELEVATION.
3. ALL DIMENSIONS SHOWN ARE FROM FACE OF CONCRETE/MASONRY, FACE OF SHEATHING, OR CENTERLINE OF COLUMN. ALL COLUMNS ARE CENTERED IN STUD WALLS, UNO.
4. FOR ANY DIMENSIONAL INFORMATION NOT SHOWN, SEE ARCHITECTURAL DRAWINGS.
5. SEE ARCHITECTURAL DRAWINGS FOR ANY EMBEDDED ITEMS AND ALL EXTERIOR CONCRETE PAVING.
6. SEE PLANS AND ARCHITECTURAL DRAWINGS FOR DEPRESSIONS AND/OR SLOPES IN CONCRETE SLABS.
7. SEE ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS IN BEARING AND NON-BEARING WALLS.
8. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF INTERIOR NON-BEARING PARTITIONS.
9. SEE ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL EMBEDDED ITEMS AND SLAB PENETRATIONS.
10. FOR TYPICAL SLAB-ON-GRADE REQUIREMENTS, INCLUDING SLAB JOINTS, SEE DETAIL 11/S-302.
11. THE BUILDING PAD SHALL BE PREPARED AS OUTLINED IN DETAIL 42/S-301. THE BUILDING OFFICIAL SHALL REQUIRE PAD CERTIFICATION BY A GEOTECHNICAL ENGINEER AT THEIR DISCRETION.
12. BOTTOM OF FOOTING SHALL BE, UNLESS DEEPER FOUNDATIONS ARE REQUIRED BY THE BUILDING OFFICIAL:
    A. 30" BELOW PAD OR ADJACENT GRADE AT PERIMETER, WHICHEVER IS DEEPER, UNO.
    B. 30" BELOW PAD OR ADJACENT GRADE AT INTERIOR GRADE BEAMS, WHICHEVER IS DEEPER, UNO.

SYMBOL LEGEND

S — — — S INDICATES STEPPED FOOTING PER DETAIL 43/S-301

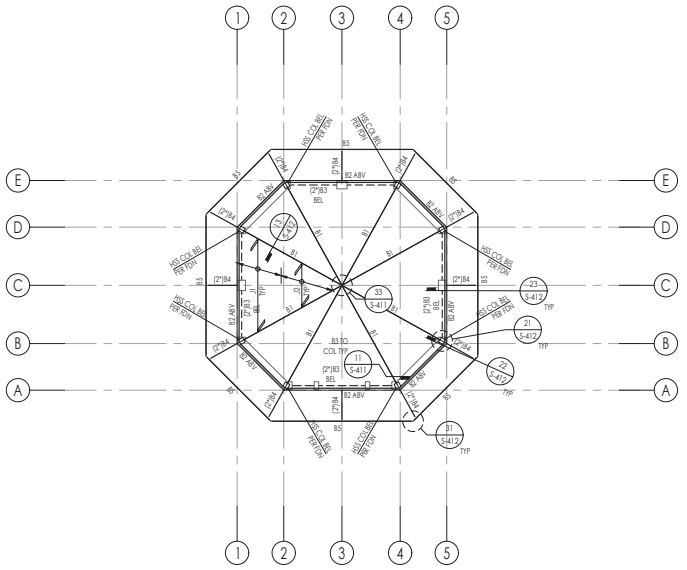
SCHEDULES

CONTINUOUS FOOTING SCHEDULE

MARK	WIDTH	MIN EMBED BELOW LOWEST PAD GRADE	LONG REINF	STIRRUP	DETAIL
C1	1'-0"	SEE NOTE 12	(2) #5 T&B	#3 @ 12" OC	33/S-303

POLE FOOTING SCHEDULE

MARK	DIA (Ø)	EMBEDMENT DEPTH	VERT REINF	TIE REINF	DETAIL
P1	2'-0"	7'-0"	(6) #4	#3 SPIRALS PITCH PER 13/S-302	13/S-302



2 KIOSK ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

ROOF FRAMING NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND ELEVATIONS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING, ALL DIMENSIONS TO BE VERIFIED PRIOR TO CONSTRUCTION.
    A. GRID DIMENSIONS AND HORIZONTAL CONTROL
    B. ALL DIMENSIONS, ELEVATIONS, FINISH SURFACE, SLOPES, DRAINS, SLAB DEPRESSIONS, ETC
    C. LOCATION AND EXTENT OF EXTERIOR WALL ASSEMBLIES AND OPENINGS
    D. ALL NON STRUCTURAL WALLS
2. REFER TO THE FOLLOWING SHEETS FOR TYPICAL DETAILS:

DESCRIPTION	SHEET (S)
SYMBOLS AND ABBREVIATIONS	S-101
STRUCTURAL GENERAL NOTES	S-102 - S-104
TESTING AND INSPECTION	S-105
TYPICAL CONCRETE DETAILS	S-301 - S-303

3. SEE ARCHITECTURAL DRAWINGS FOR ALL TOP OF SHEATHING AND TOP OF WALL ELEVATIONS.
4. SEE ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF PIPES, DUCTS AND OTHER ROOF PENETRATIONS. FOR ROOF PENETRATIONS NOT SHOWN ON ROOF FRAMING PLAN, SEE DETAIL 23, 33/S-406 FOR TYPICAL OPENINGS, UNO.
5. ALL INTERIOR WALLS NOT SHOWN ON THE STRUCTURAL FRAMING PLANS BUT SHOWN ON THE ARCHITECTURAL DRAWINGS SHALL BE CONSTRUCTED PER NON-BEARING PARTITION WALL DETAILS 11-43/S-404, UNO.
6. DIAPHRAGM TYPES:
   ALL ROOF DIAPHRAGMS SHALL BE TYPE A, UNO
   REFER TO 12/-406
7. FRAMING MEMBERS AND COMPONENTS SHALL NOT BE CUT, NOTCHED, DRILLED OR OTHERWISE ALTERED IN ANY WAY WITHOUT WRITTEN CONCURRENCE AND APPROVAL OF A REGISTERED DESIGN PROFESSIONAL.
8. ALTERATIONS RESULTING IN THE ADDITION OF LOADS TO ANY MEMBER (E.G. HVAC EQUIPMENT, WATER HEATER) SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE FRAMING IS CAPABLE OF SUPPORTING SUCH ADDITIONAL LOADING.

SYMBOL LEGEND

(2") INDICATES TWO LEVELS OF SUPPORT FRAMING AT EYEBROW AND COUNTER LEVELS - SEE ARCH

SCHEDULES

JOIST / BEAM SCHEDULE

MARK	SIZE	REMARKS
J1	40052001@ 8" OC	
J2	40052001@ 16" OC	
B1	HSS 6x4x¼	
B2	HSS 6X2X¼	
B3	HSS 4X4X¼	
B4	C4x5.4	
B5	C6X8.2	

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

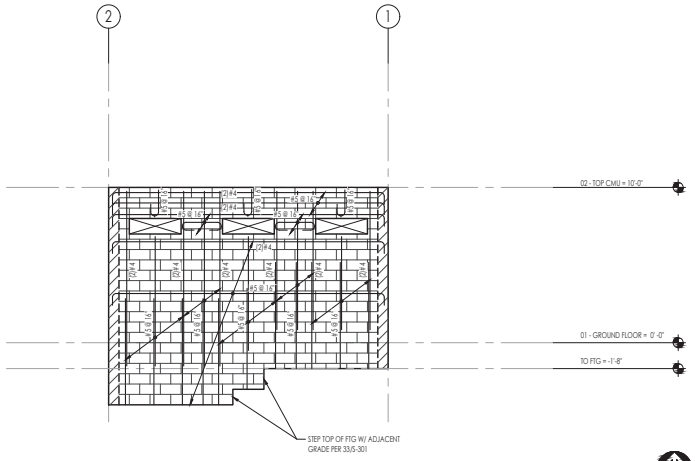
PROJECT TITLE:

KIOSK FOUNDATION & ROOF FRAMING PLAN

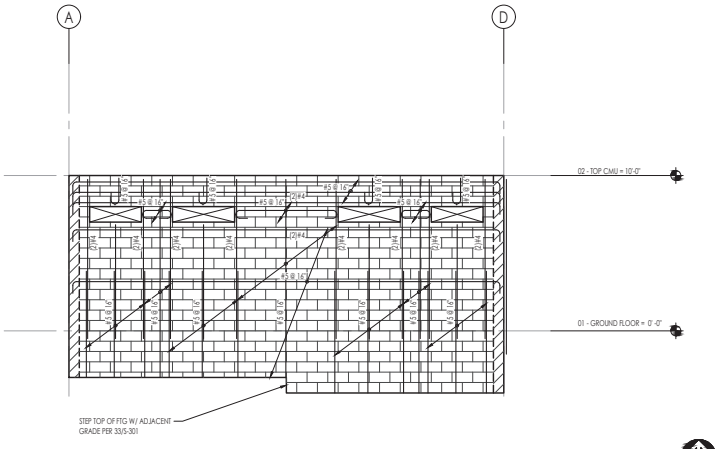
SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DRAKE CECIL No. 6685 STRUCTURAL STATE OF CALIFORNIA

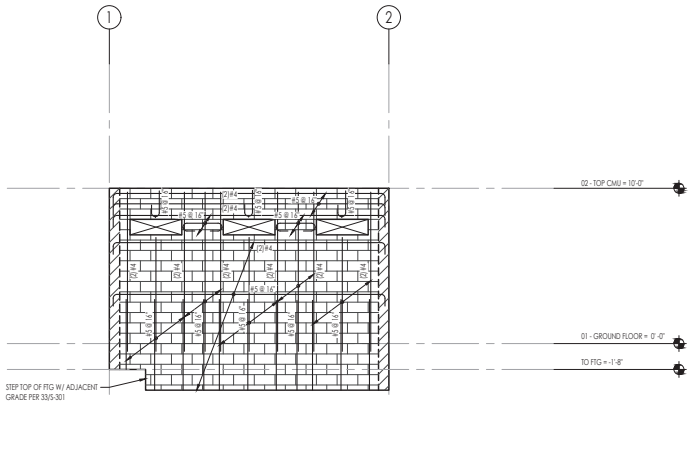
DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-211



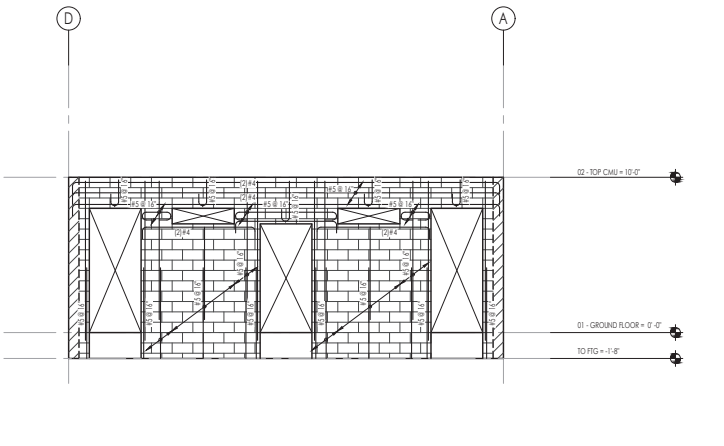
1 RESTROOM EAST CMU WALL ELEVATION
SCALE: 1/4" = 1'-0"



2 RESTROOM SOUTH CMU WALL ELEVATION
SCALE: 1/4" = 1'-0"



3 RESTROOM WEST CMU WALL ELEVATION
SCALE: 1/4" = 1'-0"



4 RESTROOM NORTH CMU WALL ELEVATION
SCALE: 1/4" = 1'-0"

CITY OF SAN LUIS OBISPO

MISSION PLAZA RESTROOM & CAFE

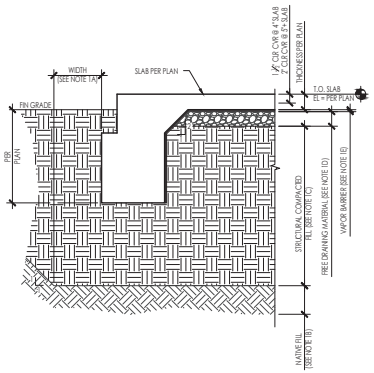
PROJECT TITLE:

CMU ELEVATIONS

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS No. S 6685 STRUCTURAL STATE OF CALIFORNIA

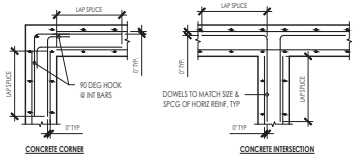
DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-221

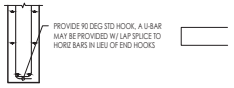


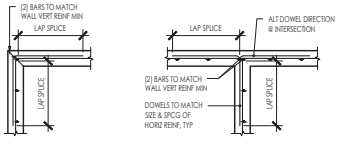
NOTES:

1. PREPARATION OF THE SLAB SUBGRADE SHALL BE BASED ON THE GEOTECHNICAL INVESTIGATION REPORT AS REFERENCED IN THE FOUNDATION GENERAL NOTES. THE FOLLOWING INFORMATION IS FOR REFERENCE ONLY.
   - A. OVER-EXCAVATION SHALL EXTEND 5 FEET BEYOND PERIMETER FOUNDATION, TO PROPERTY LINES OR EXISTING IMPROVEMENTS, WHICHEVER IS LEAST.
   - B. NATIVE MATERIALS
     - a. SHALL BE OVER-EXCAVATED 30" BELOW (E) GRADE OR 12" BELOW BOTTOM OF FOOTINGS, TO COMPETENT MATERIAL, OR TO ½ THE DEPTH OF THE DEEPEST FILL (MEASURED FROM THE BOTTOM OF THE DEEPEST FOOTING); WHICHEVER IS GREATEST.
     - b. THE EXPOSED SURFACE SHALL BE SCARIFIED TO A DEPTH OF 6". MOISTURE CONDITIONED TO 3 PERCENT OVER OPTIMUM MOISTURE CONTENT AND COMPACTED TO A MINIMUM RELATIVE DENSITY OF 90 PERCENT (ASTM D1557)
   - C. ENGINEERED COMPACTED FILL
     - a. REFER TO THE GEOTECHNICAL INVESTIGATION REPORT FOR RECOMMENDATIONS FOR STRUCTURAL FILL
     - b. STRUCTURAL FILL SHALL BE PLACED IN HORIZONTAL LAYERS, EACH APPROXIMATELY 8" THICK BEFORE COMPACTION, AND SHOULD BE CONDITIONS WITH WATER TO PRODUCE A SOIL WATER CONTENT NEAR OPTIMUM MOISTURE AND COMPACTED TO A MINIMUM RELATIVE DENSITY OF 90 PERCENT (ASTM D1557)
   - D. 4" THICK, CLEAN FREE-DRAINING MATERIAL SUCH AS ¾" COARSE AGGREGATE
   - E. REFER TO GEOTECH REPORT AND ARCH DRAWINGS FOR VAPOR BARRIER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS FOR SEALING OF PENETRATIONS, JOINTS AND EDGES.
     - a. VAPOR BARRIER IS NOT TO BE PUNCTURED DURING CONSTRUCTION OF SLAB ON GRADE.
   - F. 2" THICK OPTIONAL SAND LAYER, SHALL BE LIGHTLY MOISTENED PRIOR TO PLACING CONCRETE.

SLAB ON GRADE EDGE AND SUBGRADE PREP — NTS — 42

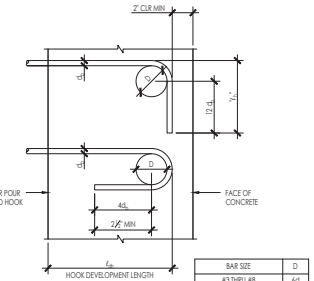






NOTE:
REINFORCEMENT SHOWN ON WALL ELEVATION(S), BOUNDARY REINFORCING DETAILS, AND OTHER SPECIFICALLY REFERENCED DETAILS SHALL TAKE PRECEDENCE OVER REINFORCEMENT SHOWN HERE.

CONC REINF @ INTERSECTION — NTS — 32



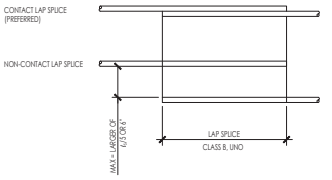
BAR SIZE	D
#3 THRU #8	6d
#9 THRU #11	8d

STANDARD HOOK DEVELOPMENT LENGTH ℓ_{dh}"					
BAR SIZE	D	ℓ_{dh}"	NORMAL WEIGHT		
			2,500	3,000	4,000
#3	2 1/4"	6"	0'-9"	0'-9"	0'-8"
#4	3"	8"	1'-0"	0'-11"	0'-10"
#5	3 3/4"	10"	1'-3"	1'-2"	1'-0"
#6	4 1/2"	12"	1'-6"	1'-5"	1'-3"
#7	5 1/4"	1'-2"	1'-9"	1'-8"	1'-5"
#8	6"	1'-4"	2'-0"	1'-10"	1'-7"
#9	9 1/2"	1'-7 1/2"	2'-3"	2'-1"	1'-10"
#10	10 3/4"	1'-10"	2'-7"	2'-4"	2'-1"
#11	12"	2'-0 1/2"	2'-10"	2'-7"	2'-3"

NOTES:

1. ALL HOOKED BARS SHALL EXTEND AS FAR AS POSSIBLE WITH A MINIMUM 2" END COVER AND WITH EMBEDMENT NOT LESS THAN SHOWN ON THE SCHEDULE UNLESS NOTED OTHERWISE ON PLANS.
2. MINIMUM SIDE COVER = 2½".
3. FOR LIGHTWEIGHT CONCRETE MULTIPLY LENGTHS IN SCHEDULE BY 1.3.

REINF HOOK DEVELOPMENT LENGTH AND BENDS — NTS — 22

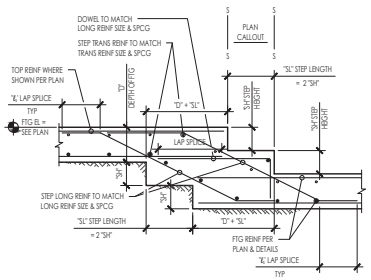


REINFORCING TENSION DEVELOPMENT LENGTH AND LAP SPLICE SCHEDULE						
BAR SIZE	DEVELOPMENT LENGTH, ℓ_d (CLASS A LAP SPLICE)			LAP SPLICE, ℓ_s (CLASS B LAP SPLICE)		
	f'c (psi)			f'c (psi)		
	2,500	3,000	4,000	2,500	3,000	4,000
#3	1'-6"	1'-5"	1'-3"	2'-0"	1'-10"	1'-7"
#4	2'-0"	1'-10"	1'-7"	2'-8"	2'-5"	2'-1"
#5	2'-6"	2'-4"	2'-0"	3'-3"	3'-0"	2'-7"
#6	3'-0"	2'-9"	2'-5"	3'-11"	3'-7"	3'-2"
#7	4'-5"	4'-0"	3'-6"	5'-9"	5'-2"	4'-6"
#8	5'-0"	4'-7"	4'-0"	6'-6"	5'-11"	5'-2"
#9	5'-8"	5'-2"	4'-6"	7'-4"	6'-9"	5'-10"
#10	6'-5"	5'-10"	5'-1"	8'-3"	7'-7"	6'-7"
#11	7'-1"	6'-6"	5'-7"	9'-2"	8'-5"	7'-3"

NOTES:

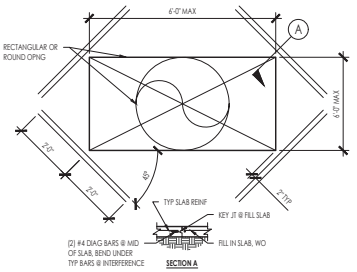
1. VALUES ABOVE ARE FOR REINFORCEMENT WITH THE FOLLOWING PARAMETERS:
   - A. GRADE 60 REINFORCEMENT
   - B. NORMAL WEIGHT CONCRETE
     - a. FOR LIGHTWEIGHT CONCRETE MULTIPLY THE VALUES ABOVE BY 1.3
   - C. NON-EPOXY COATED REINFORCEMENT
   - D. HORIZONTAL BARS WITHOUT 12" OF CONCRETE BELOW (BOTTOM BARS), AND VERTICAL BARS
     - a. FOR TOP BARS WITH 12" OR MORE OF CONCRETE BELOW THE BAR MULTIPLY THE VALUES ABOVE BY 1.3
   - E. CLEAR SPACING NOT LESS THAN d_b, CLEAR COVER NOT LESS THAN d_b, AND STIRRUPS THROUGH L_p NOT LESS THAN MIN
     OR
     CLEAR SPACING NO LESS THAN $2d_b$ AND CLEAR COVER NOT LESS THAN db
     - a. FOR OTHER SPACING AND COVER CONDITIONS MULTIPLY THE VALUES ABOVE BY 1.5
   - F. REINFORCEMENT NOT IN SHEAR WALLS
     - a. FOR REINFORCEMENT IN SHEAR WALLS MULTIPLY THE VALUES ABOVE BY 1.25
2. THE MULTIPLIERS LISTED IN NOTE 1 ABOVE ARE CUMULATIVE INCREASES IN DEVELOPMENT/LAP SPLICE LENGTH.
3. ALL LAP SPLICES REFERENCED IN THE PLANS SHALL BE CLASS B UNLESS NOTED OTHERWISE.
4. WHEN REINFORCING BARS OF TWO SIZES ARE LAP SPLICED IN TENSION, USE THE LARGER OF THE TENSION CLASS B. LAP SPLICE LENGTH (ℓ_s) OF THE SMALLER BAR, AND THE CLASS A, TENSION DEVELOPMENT LENGTH (ℓ_d) OF THE LARGER BAR.

REINF DEVELOPMENT LENGTH AND SPLICES — NTS — 12



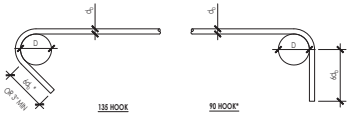
NOTE:
"SH" = 1'-6" MAX

STEP FOOTING — NTS — 43



NOTES:
1. ELIMINATE BARS IF OPENING IS LESS THAN 2'-0" IN BOTH DIMENSIONS.
2. REFER TO DETAIL S3/- FOR SLAB ON GRADE SUBGRADE SUPPORT

SOG OPENING — NTS — 23



BAR SIZE	D
#3	1½"
#4	2"
#5	2½"

* PROVIDE 10d$_b$ EXTENSIONS IN LIEU OF 6d$_b$ AT ALL FRAME COLUMNS, GIRDERS, SHEAR WALLS AND SHEAR WALL BOUNDARY MEMBERS

REINF TIES AND STIRRUPS — NTS — 13

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

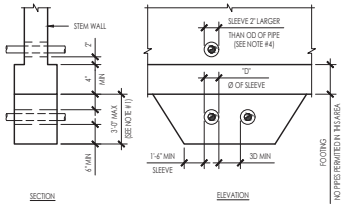
PROJECT TITLE:

TYPICAL CONCRETE DETAILS

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOUGLAS CECIL No. 36885 STRUCTURAL STATE OF CALIFORNIA

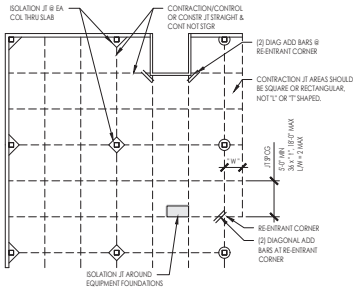
DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-301



NOTES:
1. FOOTINGS SHALL BE STEPPED PER DETAIL 33/ & 34/S-301 SO THAT THIS DIMENSION DOES NOT EXCEED 3'-0".
2. CONTRACTOR SHALL COORDINATE ALL PIPE LOCATIONS WITH BUILDING FOUNDATION REQUIREMENTS.
3. TRENCH BELOW FOOTING SHALL BE FILLED WITH CONCRETE OR 3-SACK SLURRY BEFORE POURING FOOTING. CONCRETE FILL SHALL BE SAME WIDTH AS FOOTING AND FULL WIDTH OF PIPE TRENCH.
4. PIPES MAY BE WRAPPED IN 1" THICK LOOSE FOAM IN LIEU OF SLEEVING.
5. CONDUIT MAY BE RUN THRU STEM OR ENCASEMENT UNDER FOOTING WITHOUT SLEEVES OR FOAM WRAP.

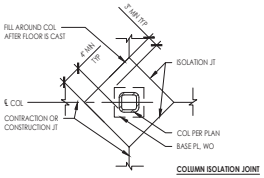
PIPES PERPENDICULAR TO FOOTINGS W/ STEM WALL

NTS | 41



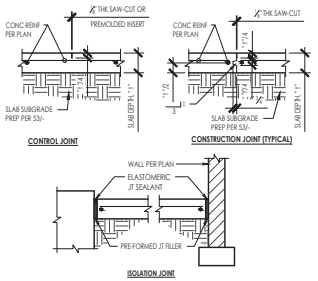
SLAB ON GRADE JOINTS

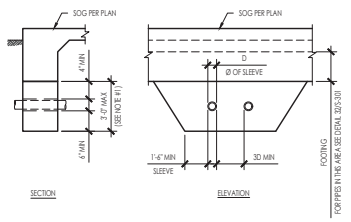
NTS | 11



COLUMN ISOLATION JOINT

NOTES:
1. IF SAW CUT CONTRACTION OR CONTROL JOINT IS USED, SAW-CUT WITHIN 24 HOURS. EARLY ENTRY SAWS MAY BE USED WITHIN 1-4 HOURS OF POUR, AND CONVENTIONAL SAWS 4-12 HOURS OF POUR DEPENDING ON WEATHER.
2. FILL CONTRACTION JOINT WITH AN ELASTOMERIC JOINT COMPOUND RATED FOR ITS USE. FOR INDUSTRIAL FLOORS SUBJECTED TO HARD WHEELED TRAFFIC, USE SEALANTS RATED FOR SUCH APPLICATIONS BY THE MANUFACTURER.
3. DOWELS IN INDUSTRIAL FLOOR APPLICATIONS SHOULD BE SMOOTH ALIGNED, AND SUPPORTED SO THEY WILL REMAIN PARALLEL IN BOTH HORIZONTAL AND VERTICAL PLANES DURING PLACING AND FINISHING.
4. IN STEEL AND/OR CONC. BUILDINGS DO NOT POUR DIAMOND UNTIL STRUCTURAL STEEL AND CONCRETE ABOVE HAS BEEN INSTALLED.

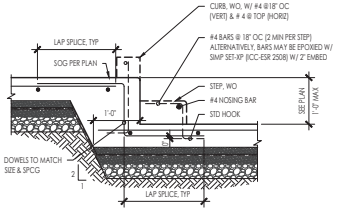




NOTES:
1. FOOTINGS SHALL BE STEPPED PER DETAIL 33/ & 34/S-301 SO THAT THIS DIMENSION DOES NOT EXCEED 3'-0".
2. TRENCH BELOW FOOTING SHALL BE FILLED WITH CONCRETE OR 3-SACK SLURRY BEFORE POURING FOOTING. CONCRETE FILL SHALL BE SAME WIDTH AS FOOTING AND FULL WIDTH OF PIPE TRENCH.
3. PIPES MAY BE WRAPPED IN 1" THICK LOOSE FOAM IN LIEU OF SLEEVING.
4. CONDUIT MAY BE RUN THRU STEM OR ENCASEMENT UNDER FOOTING WITHOUT SLEEVES OR FOAM WRAP.

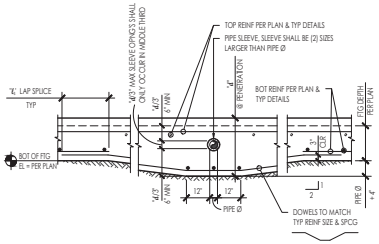
PIPES PERPENDICULAR TO FOOTINGS

NTS | 42



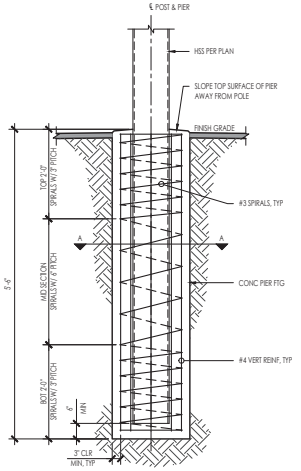
STEP IN CONCRETE SLAB ON GRADE

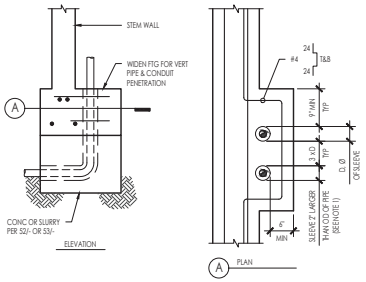
NTS | 32



SLEEVE THROUGH FOUNDATION (SLAB TURN-DOWN)

NTS | 22

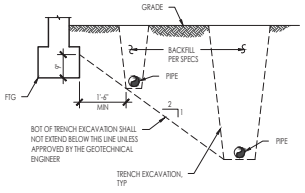




NOTES:
1. PIPES MAY BE WRAPPED IN 1" THICK LOOSE FOAM IN LIEU OF SLEEVING.
2. CONDUIT MAY BE ROUTED UP THROUGH FOOTING WITHOUT SLEEVES OR FOAM WRAP.

TYPICAL VERT PIPES OR COND THROUGH FOOTING

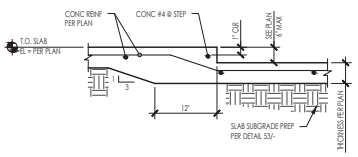
NTS | 43



NOTES:
1. CONTRACTOR SHALL COORDINATE ALL PIPE LOCATIONS WITH BUILDING FOUNDATION REQUIREMENTS.
2. IF REQUIREMENTS AS SHOWN CANNOT BE MET STEP FOOTING PER TYPICAL "STEPPED FOOTING" DETAILS (33 S-301) (34 S-301)

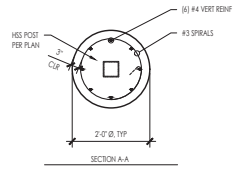
PIPES PARALLEL TO FOOTINGS

NTS | 33



SLAB ON GRADE DEPRESSION

NTS | 23



POST PIER FOOTING

NTS | 13

MISSION PLAZA ENHANCEMENTS

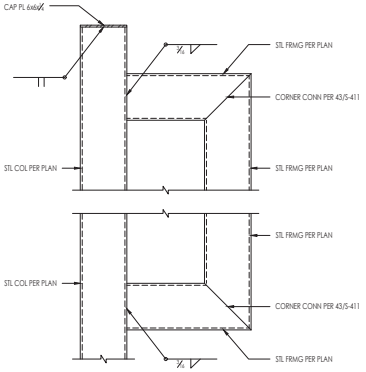
TYPICAL CONCRETE DETAILS

PROJECT TITLE:

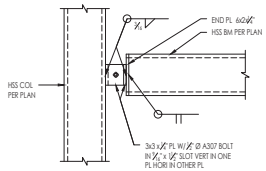
SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER RAFAEL DOREMUS No. 85685 CIVIL STRUCTURAL STATE OF CALIFORNIA

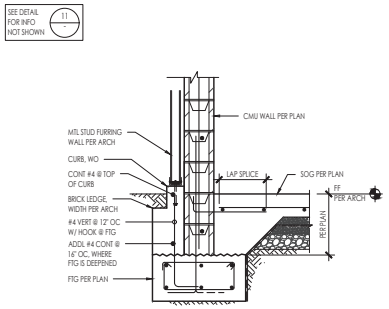
DESIGNED BY: C. CECIL
DRAWN BY: A. MERCADO
CHECKED BY: M. DOREMUS
APPROVED BY:
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
PLAN FILE NO. / LOCATION 0256-03-CU20
SHEET NO. S-302



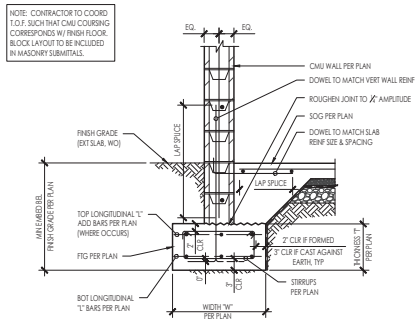
SCREEN SUPPORT — 1-1/2" = 1'-0" — 41



HSS HEADER TO COLUMN — 1" = 1'-0" — 31

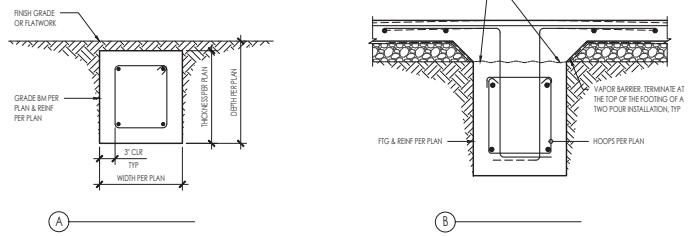


8" CMU EXTERIOR WALL FOUNDATION — 3/4" = 1'-0" — 21

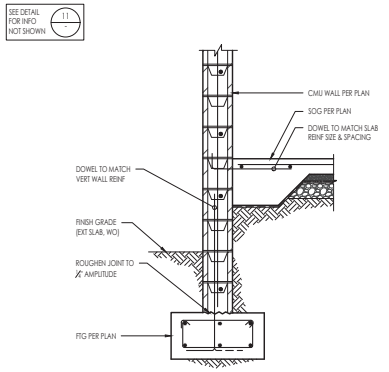


8" CMU EXTERIOR WALL FOUNDATION — 3/4" = 1'-0" — 11

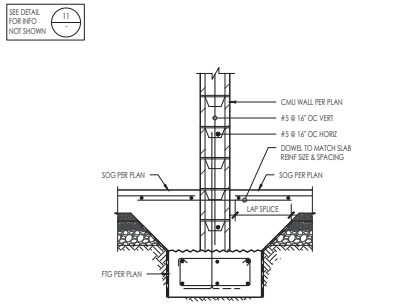
NOTE: SLAB REINF NOT SHOWN FOR CLARITY



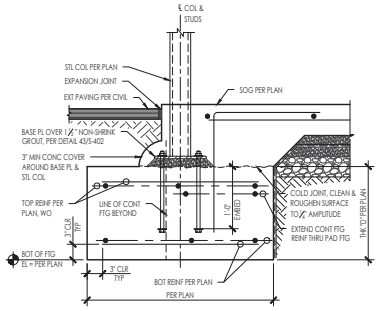
TIE BEAM — 1" = 1'-0" — 32



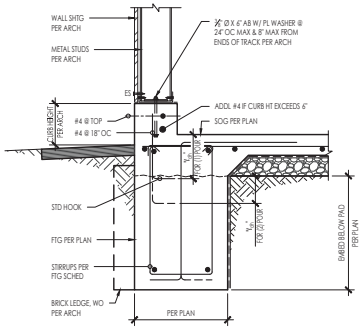
DEEPENED FOOTING @ 8" CMU EXTERIOR WALL — 3/4" = 1'-0" — 22



8" CMU INTERIOR WALL FOUNDATION — 3/4" = 1'-0" — 12

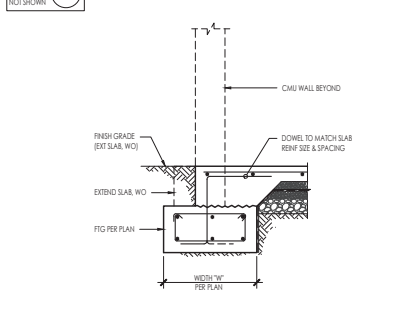


STEEL COL @ EXTERIOR FTG — 1" = 1'-0" — 43



WALL FOOTING WITH RAISED CURB — 1" = 1'-0" — 33

23



OPENING @ CMU WALL FOUNDATION — 3/4" = 1'-0" — 13

CITY OF SAN LUIS OBISPO

MISSION PLAZA RESTROOM & CAFE

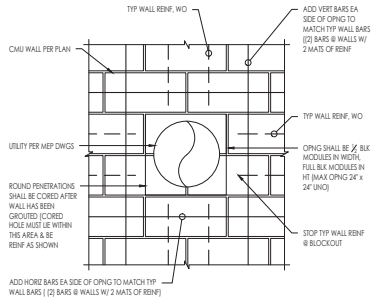
FOUNDATION DETAILS

PROJECT TITLE:

SHEET TITLE:

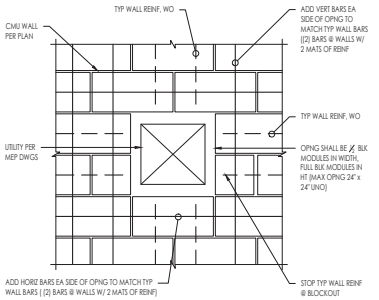
REGISTERED PROFESSIONAL ENGINEER MICHAEL DOUGLAS CECIL No. 85685 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-303



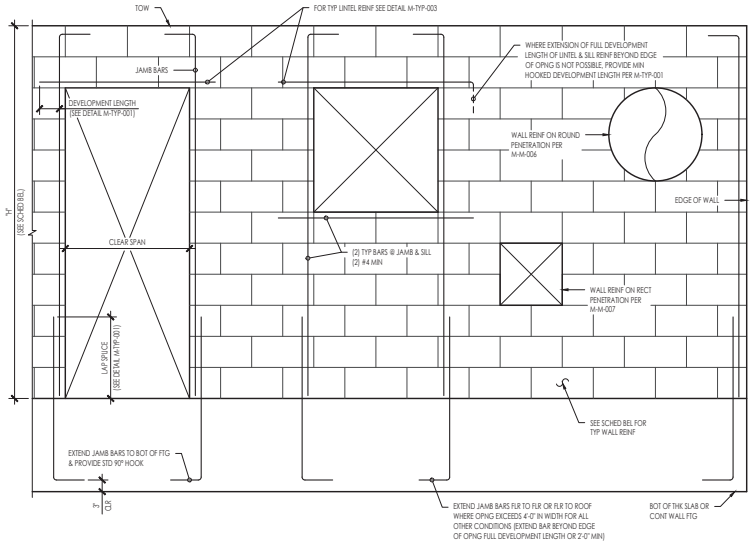
ROUND PENETRATION IN MASONRY

NTS 41



RECTANGULAR PENETRATION IN MASONRY

NTS 42



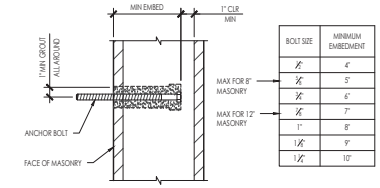
NOTES:
1. ALL CELLS SHALL BE GROUTED SOLID, UNO
2. WALL CONSTRUCTION SHALL BE RUNNING BOND ONLY
3. WALL THICKNESS PER PLAN
4. PROVIDE CMU LINTELS AT ALL CMU WALL OPENINGS, UNO
5. PRECAST CONCRETE LINTELS MAY BE USED WITH ARCHITECT'S & SEOR'S APPROVAL
6. ALL MASONRY OPENINGS SHALL BE SHORED UNTIL MASONRY HAS CURED FOR A MIN OF 72 HOURS
7. REFER TO ARCHITECTURAL & MECHANICAL, ELECTRICAL & PLUMBING DRAWINGS FOR SIZE & LOCATIONS OF OPENINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY & PROPERLY SIZE ALL CMU WALL OPENINGS
8. HORIZ REINF SHALL BE PROVIDED WITHIN 16 INCHES OF THE TOP & BOT OF THE WALL
9. WALL OPENINGS SHALL NOT BE CLOSER THAN 24" FROM THE TOP OF THE EDGE IN ORDER TO ACCOMMODATE THE WALL LINTEL
10. MIN SEPARATION BETWEEN OPENINGS SHALL ACCOMMODATE THE NUMBER OF ROWS OF JAMB BAR REINF
11. SEE GENERAL NOTES FOR MORE INFO

CMU WALL REINFORCING SCHEDULE

WALL THICKNESS (NOMINAL)	BAR SIZE & SPACING EACH MAT			MAXIMUM HEIGHT
	HORIZONTAL	VERTICAL	REMARKS	
6"	#4 @ 24" OC	#4 @ 24" OC	SINGLE MAT	12'-0"
8"	#5 @ 24" OC	#5 @ 24" OC	SINGLE MAT	16'-8"
12"	#5 @ 24" OC	#5 @ 24" OC	DOUBLE MAT	25'-0"

TYPICAL CMU WALL ELEVATION

NTS 22

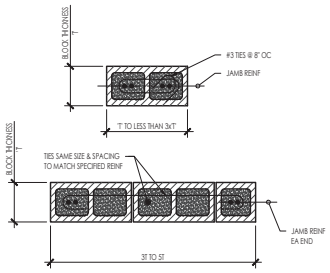


BOLT SIZE	MINIMUM EMBEDMENT
⅜"	4"
½"	5"
⅝"	6"
¾"	7"
1"	8"
1¼"	9"
1½"	10"

NOTES:
1. MINIMUM BOLT SPACING SHALL BE 16 BOLT DIAMETERS WITH A MINIMUM EDGE DISTANCE OF 12 DIAMETERS, UNLESS NOTED OTHERWISE.
2. PROVIDE AN ADDITIONAL 2" OF EMBEDMENT FOR ANCHOR BOLTS LOCATED IN THE TOP OF COLUMNS.
3. ANCHOR BOLTS SHALL BE HEX HEADED WITH THE DIMENSIONS OF THE HEX CONFORMING TO ANSI/ASME B18.2.1 BENT BAR ANCHORS SHALL NOT BE USED.

MASONRY ANCHOR BOLT SCHEDULE

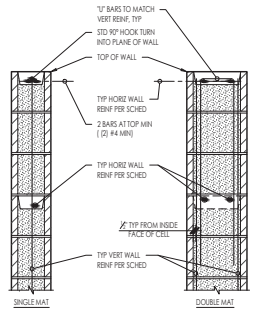
NTS 43



NOTE:
TIE MAY BE TURNED UP AS NECESSARY TO FIT INSIDE WALL. BREAK WEBS AND/OR INTERIOR FACE SHELL AS REQUIRED.

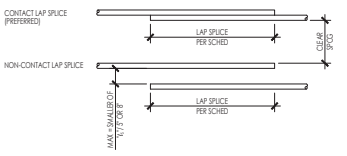
CONCRETE MASONRY WALL PIERS

NTS 33

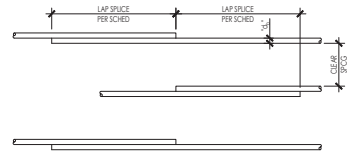


TYP REINF AT TOP OF WALL

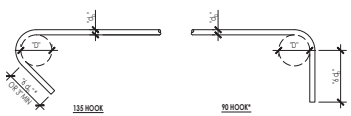
NTS 23



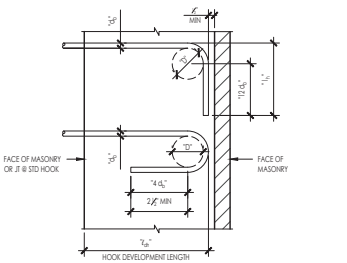
TYPICAL LAP SPLICES



STAGGERED SPLICING



BAR SIZE	D
#3	1½"
#4	2"
#5	2½"



BAR SIZE	D
#3 THRU #8	$6d_b$
#9 THRU #11	$8d_b$

TYPICAL COLUMN BAR OFFSET

BAR SIZE	DEVELOPMENT LENGTH (ld) OR LAP SPLICE LENGTH (ls)	HOOK DEVELOPMENT LENGTH (le)	D	l_h
#3	2'-3"	0'-5"	2½"	5"
#4	3'-0"	0'-7"	3"	8"
#5	3'-9"	0'-9"	3½"	10"
#6	4'-6"	0'-10"	4½"	1'-0"
#7	5'-3"	0'-12"	5½"	1'-2"
#8	6'-0"	1'-1"	6"	1'-4"
#9	6'-9"	1'-3"	9½"	1'-7½"

NOTES:
1. USE DEVELOPMENT LENGTH (ld) AND SPLICE LENGTH (ls) INDICATED IN SCHEDULE FOR ALL DOWEL LENGTHS NOT SHOWN ON PLANS UNLESS OTHERWISE PERMITTED BY THE SEOR AND JURISDICTION AGENCY
2. DEVELOPMENT LENGTHS (ld) AND SPLICE LENGTHS (ls) INDICATED IN SCHEDULE CORRESPOND TO GRADE 60 BARS IN 1,500 OR 2,500 psi NORMAL WEIGHT MASONRY
3. THIS SCHEDULE SHALL BE USED WHERE DEVELOPMENT AND SPLICE LENGTHS ARE NOT SPECIFICALLY DETAILS AND DIMENSIONED ON THE DRAWINGS
4. WHERE BARS OF DIFFERENT SIZES ARE LAP SPLICED, SPLICE LENGTH SHALL BE THE SPLICE LENGTH OF THE SMALLER BARS
5. NOTE THAT THE LAP SPLICES SHOWN ACCOUNT FOR THE INCREASE IN LAP SPLICE IN REGIONS OF MOMENT WHERE THE DESIGN TENSILE STRESSES IN THE REINFORCEMENT ARE GREATER THAN 80 PERCENT OF THE ALLOWABLE STEEL TENSION STRESS, Fs
6. D = FINISHED INSIDE BEND DIAMETER
7. d_b = NOMINAL BAR DIAMETER

MASONRY-LAP SPLICE / DEVELOPMENT LENGTH SCHED

NTS 13

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

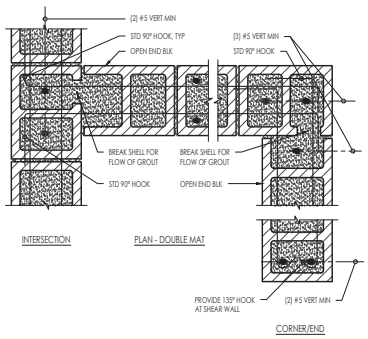
PROJECT TITLE:

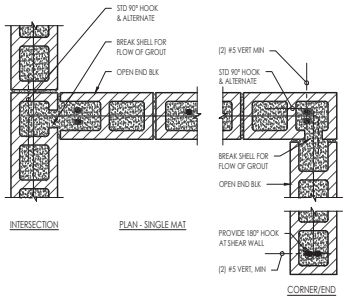
TYPICAL MASONRY DETAILS

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS No. S 6885 STRUCTURAL STATE OF CALIFORNIA

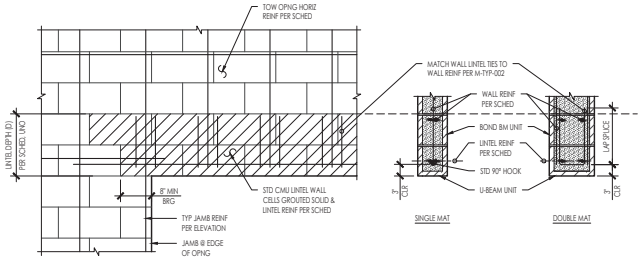
DESIGNED BY: C. CECIL
DRAWN BY: A. MERCADO
CHECKED BY: M. DOREMUS
APPROVED BY:
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO.: 91439-01
PLAN FILE NO. / LOCATION: 0256-03-CU20
SHEET NO.: S-401





MASONRY WALL CORNER DETAIL

0256-03-CU20 - S402 - 42 NTS 42

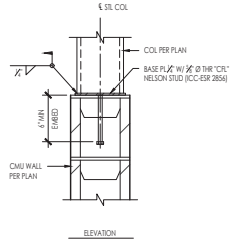


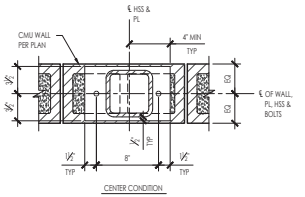
TYPICAL CMU REINFORCEMENT SCHEDULE					
TYPE	MAX CLR SPAN (FT)	D (IN)	SOLID-GROUTED MASONRY WALL LINTEL REINFORCEMENT SCHEDULE		WALL HORIZ ABOVE LINTEL
			8" WALLS	12" WALLS	
L1	5'-4"	15⅓"	(2) #4	(2) #5	#4 @ 24" OC
L2	10'-8"	15⅓"	(2) #4	(2) #5	#4 @ 24" OC
L3	12'-0"	15⅓"	(2) #5	(2) #6	#4 @ 24" OC
L4	14'-0"	15⅓"	(2) #5	(2) #6	#4 @ 24" OC

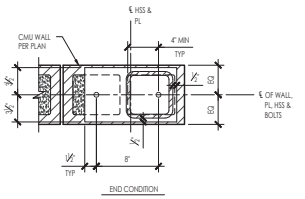
NOTES:
1. TIES SHOWN AT LINTELS ARE IN ADDITION TO ALL TYP WALL REINF.
2. LINTEL DESIGN IS BASED ON MEDIUM WT (124 PSF) MAX FULLY GROUTED CONC MASONRY CONSTRUCTION
3. WALL CONTROL JOINTS SHALL NOT OCCUR WITHIN DEVELOPMENT LENGTH OF LINTEL REINF

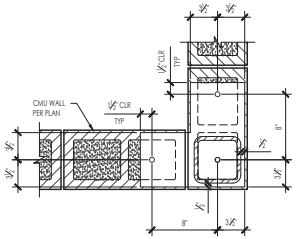
TYPICAL CMU LINTEL DETAILS

0256-03-CU20 - S402 - 22 NTS 22



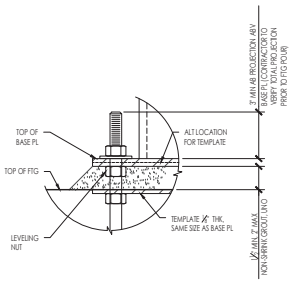






HSS @ CMU WALL

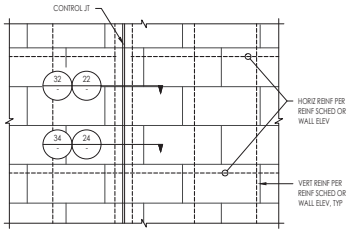
0256-03-CU20 - S402 - 13 1-1/2" = 1'-0" 13



ANCHOR BOLT PROJECTION

0256-03-CU20 - S402 - 43 NTS 43

33



CONTROL JOINT AT NON-SHEAR CMU WALL

0256-03-CU20 - S402 - 23 NTS 23

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

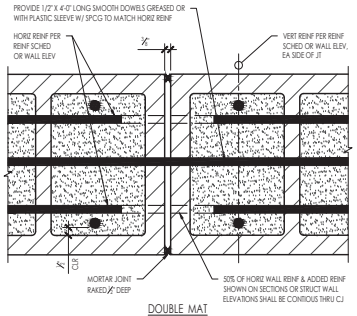
PROJECT TITLE:

TYPICAL MASONRY DETAILS

SHEET TITLE:

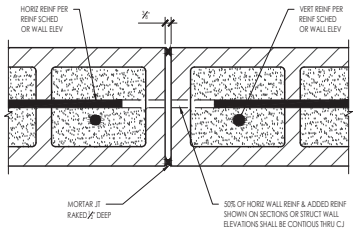
REGISTERED PROFESSIONAL ENGINEER MICHAEL DORE CIVIL No. 85685 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-402



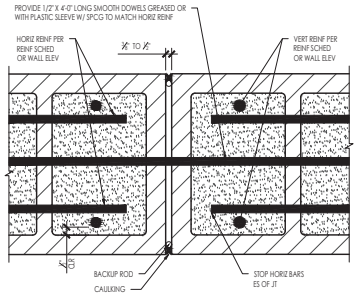
DOUBLE MAT

CONTROL JOINT W/ CONT REINFORCEMENT | NTS | 41

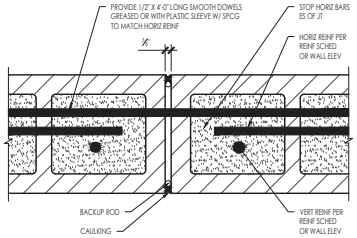


SINGLE MAT

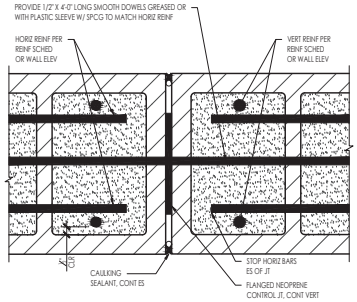
CONTROL JOINT W/ CONT REINFORCEMENT | NTS | 31



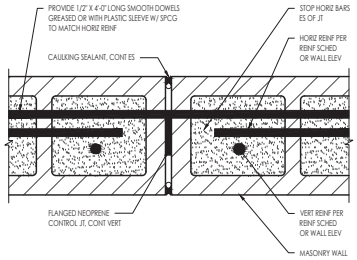
CONTROL JOINT | NTS | 42



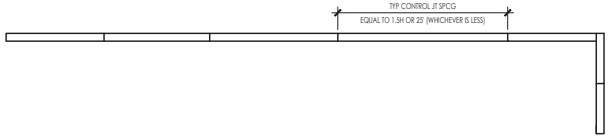
CONTROL JOINT | NTS | 32



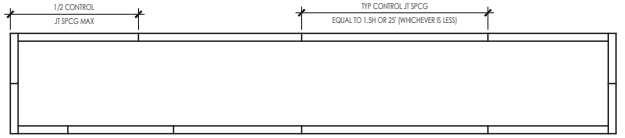
ALT CONTROL JOINT W/ FLANGED NEOPRENE | NTS | 43



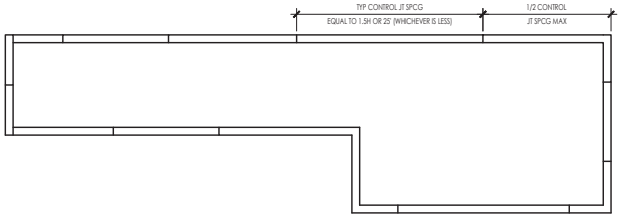
ALT CONTROL JOINT W/ FLANGED NEOPRENE | NTS | 33



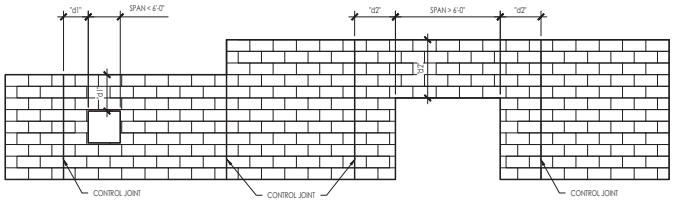
RETAINING WALL



RECTANGULAR BUILDING PLAN



IRREGULAR BUILDING PLAN



ELEVATION

MAXIMUM WALL PANEL DIMENSIONS	LENGTH, FT	25
	LENGTH / HEIGHT RATIO	2 1/2

NOTE:
1. THE CONTRACTOR SHALL SUBMIT THE INTENDED CONTROL JOINT LOCATIONS TO THE SEOR FOR REVIEW AND APPROVAL.

MASONRY CONTROL JOINT SPACING | NTS | 13

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

TYPICAL MASONRY DETAILS

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS No. S 6885 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-403

PRICELESS HEADER SCHEDULE							
	WIDTH	GAUGE	AREA (IN²)	I (IN⁴)	S (IN³)	SADDLE CLIP	PART NO.
	3 5/8"	16	1.368	2.514	.907	362 C350-54	350HDR350-54
	3 5/8"	14	1.71	3.242	1.201	362C350-54	350HDR350-68
	5 1/2"	16	1.594	3.203	1.032	550C350-54	550HDR350-54
	5 1/2"	14	2.28	7.236	2.055	550C450-54	550HDR450-68
PRICELESS HEADER PER ER-0342							

HDS STUD SCHEDULE								
	DEPTH	GAUGE	B	A	AREA (IN²)	I (IN⁴)	S (IN³)	MAX SPACING OF STUD BRACING
	3 5/8"	16	3	1.0625"	0.715	1.483	0.818	4'-0"
	4"	16	3	1.0625"	0.736	1.869	0.934	4'-0"
	6"	16	3	2.25"	0.984	4.856	1.619	4'-0"
	8"	16	3	2.25"	1.097	9.843	2.461	4'-0"
DIETRICH HDS PER ICC ESR-2374								

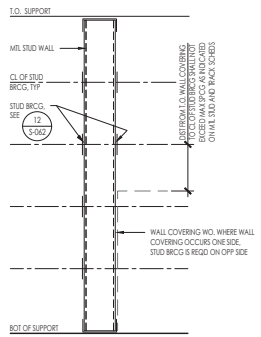
PRO-X SCHEUDLE							
	WIDTH	GAUGE	B	AREA (IN²)	I (IN⁴)	S (IN³)	PRO-X CLIP
	3 5/8"	16	4 1/4"	0.786	1.182	0.445	362 CLIP-54
	4"	16	4 1/4"	0.808	1.230	0.456	400 CLIP-54
	6"	16	4 1/4"	0.921	1.452	0.504	600 CLIP-54
	8"	16	4 1/4"	1.034	1.625	0.537	800 CLIP-54
BRADY PRO-X PER ICC ESR-1765							

STUD SCHEDULE							
	DEPTH	GAUGE	B	AREA (IN²)	I (IN⁴)	S (IN³)	MAX SPACING OF STUD BRACING	SSMA DESIGNATOR
	2 1/2"	20	1 5/8"	.223	.236	.188	4'-0"	250S162-33
		18	1 5/8"	.289	.302	.242	4'-0"	250S162-43
		16	1 5/8"	.358	.370	.296	4'-0"	250S162-54
	3 5/8"	20	1 5/8"	.262	.551	.304	4'-0"	362S162-33
		18	1 5/8"	.340	.710	.392	4'-0"	362S162-43
		16	1 5/8"	.422	.873	.482	4'-0"	362S162-54
		14	1 5/8"	.524	1.070	.590	4'-0"	362S200-68
	4"	20	1 5/8"	.275	.692	.346	4'-0"	400S162-33
		18	1 5/8"	.375	.892	.446	4'-0"	400S162-43
		16	1 5/8"	.443	1.098	.549	4'-0"	400S162-54
	5 1/2"	20	1 5/8"	.327	1.458	.530	4'-0"	550S162-33
		18	1 5/8"	.424	1.883	.685	4'-0"	550S162-43
		16	1 5/8"	.528	2.324	.845	4'-0"	550S162-54
		14	1 5/8"	.657	2.860	1.400	4'-0"	550S162-68
	6"	20	1 5/8"	.344	1.793	.598	4'-0"	600S162-33
		18	1 5/8"	.447	2.316	.772	4'-0"	600S162-43
		16	1 5/8"	.556	2.860	.953	4'-0"	600S162-54
	8"	20	1 5/8"	.413	3.582	.896	4'-0"	800S162-33
		16	1 5/8"	.670	5.736	1.434	4'-0"	800S162-54
		14	2"	0.907	8.140	2.035	4'-0"	800S200-68
	10"	16	2"	.839	11.278	2.256	4'-0"	1000S200-54
	12"	14	2"	1.192	21.947	3.658	4'-0"	1200S200-68

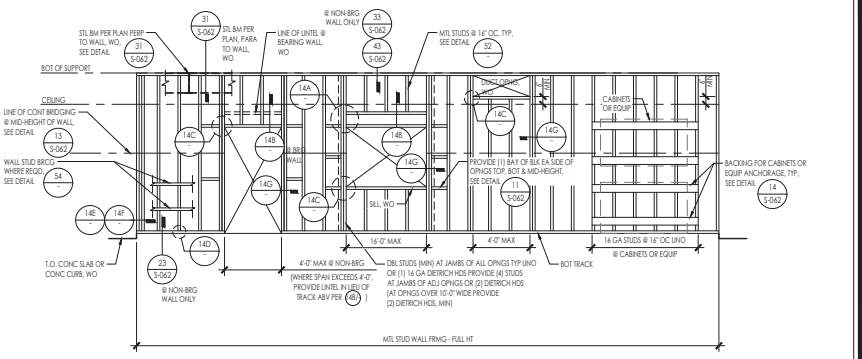
TRACK SCHEDULE							
	DEPTH	GAUGE	B	AREA (IN²)	I (IN⁴)	S (IN³)	SSMA DESIGNATOR
	2 1/2"	20	1 1/2"	.190	.221	.167	250T150-33
		18	1 1/2"	.248	.289	.217	250T150-43
		16	1 1/2"	.311	.368	.273	250T150-54
	4"	20	1 1/2"	.242	.622	.300	400T150-33
		18	1 1/2"	.315	.811	.390	400T150-43
		16	1 1/2"	.396	1.025	.489	400T150-54
	5 1/2"	20	1 1/2"	.294	1.395	.459	550T150-33
		18	1 1/2"	.383	1.688	.596	550T150-43
		16	1 1/2"	.480	2.128	.747	550T150-54
	6"	20	1 1/2"	.311	1.590	.517	600T150-33
		18	1 1/2"	.405	2.072	.673	600T150-43
		16	1 1/2"	.509	2.611	.843	600T150-54
	8"	20	1 1/2"	.380	3.180	.781	800T150-33
		16	1 1/2"	.622	5.214	1.272	800T150-54
		14	1 1/2"	.783	6.594	1.599	800T150-68
	10"	16	1 1/2"	.735	9.061	1.777	250T150-54
	12"	14	1 1/2"	1.068	18.148	2.963	1200T150-68

NOTES:
1. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SIZE AND GAUGE OF STUDS.
2. DIMENSIONS, PROPERTIES AND TYPES NOTED ARE BASED ON METAL STUDS AND TRACKS BY STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) ICBO NO 4943 UNO.

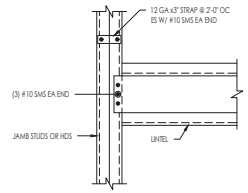
METAL STUD SCHEDULE — NTS — 43



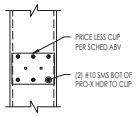
WALL STUD BRACING LOCATION — NTS — 31



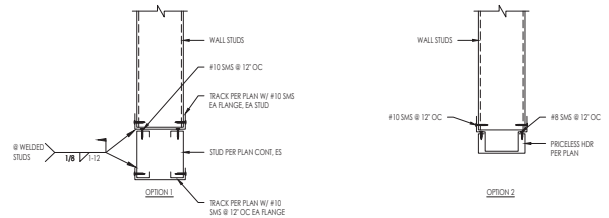
METAL STUD WALL FRAMING ELEVATION (BEARING & NON-BEARING) — 1/4" = 1'-0" — 11



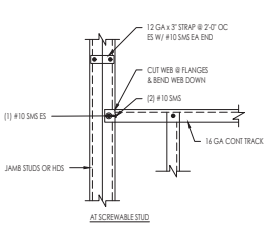
PRICELESS HEADER	PRICELESS CLIP	CLIP TO JAMB	CLIP TO HEADER
550HDR350-54	550HDR 350-54	(6) @10 SMS	(6) #10 SMS
550HDR450-68	550HDR 450-54	(8) @10 SMS	(6) #10 SMS



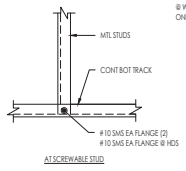
A LINTEL TO JAMB



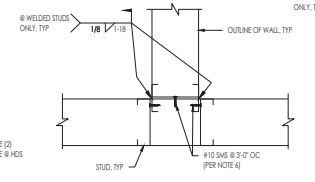
B HEADER SECTION



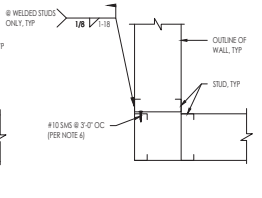
C TRACK TO JAMB



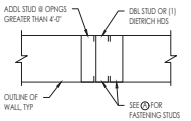
D STUD TO TRACK



E TYPICAL INTERSECTION



F TYPICAL CORNER



G MULTIPLE STUDS

NOTES:
1. SEE METAL STUD AND TRACK SCHEDULES ON THIS SHEET FOR ADDITIONAL INFORMATION.
2. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SIZE OF STUDS.
3. ALL TOP AND BOTTOM TRACKS SHALL BE SAME GAUGE AS STUDS UNO.
4. ALL STUDS AT JAMBS OF DOOR AND WINDOW OPENINGS SHALL BE 16 GAUGE UNO.
5. WELDING SHALL BE IN ACCORDANCE WITH STRUCTURAL WELDING CODE - SHEET STEEL, AWS D1.3 BY THE AMERICAN WELDING SOCIETY.
6. PROVIDE EITHER WELDED OR CREWED CONNECTIONS AT CONTRACTOR'S OPTION. OMIT SHEET METAL SCREWS AT WELDED STUD CONDITIONS.

METAL STUD WALL FRAMING — NTS — 13

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

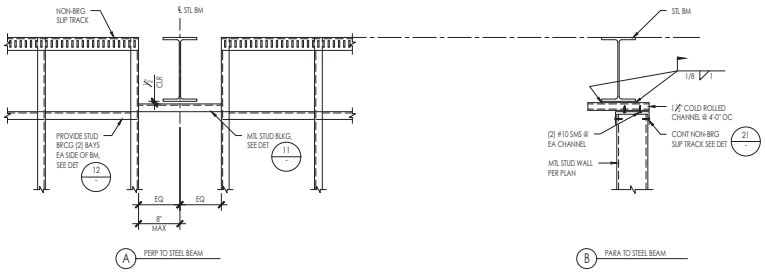
TYPICAL STEEL DETAILS

PROJECT TITLE:

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS No. C 68685 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-404

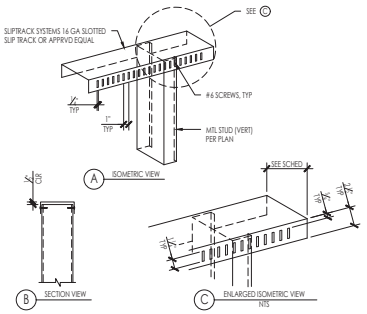


NON-BRG METAL STUD TOP @ STL BM (FULL HEIGHT WALL)

0256-03-CU20 - 5405 - 31

NTS

31

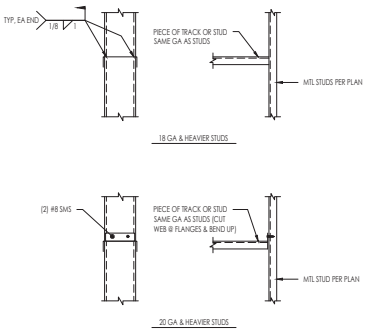


NON-BEARING METAL STUD TOP TRACK

0256-03-CU20 - 5405 - 21

NTS

21

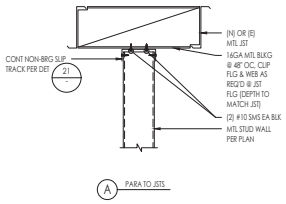


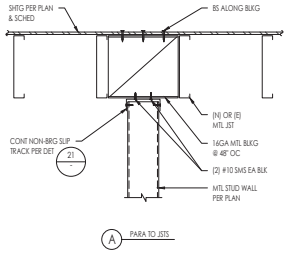
METAL STUD BLOCKING

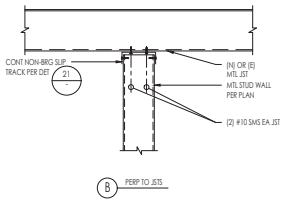
0256-03-CU20 - 5405 - 11

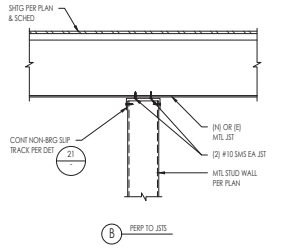
NTS

11









NON-BEARING PARTITION TOP CONNECTION

0256-03-CU20 - 5405 - 43

NTS

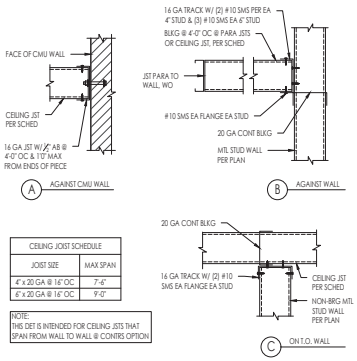
43

NON-BEARING PARTITION TOP CONNECTION

0256-03-CU20 - 5405 - 33

NTS

33



CEILING JOIST SCHEDULE	
JOIST SIZE	MAX SPAN
4" x 20 GA @ 16" OC	7'-6"
6" x 20 GA @ 16" OC	9'-0"

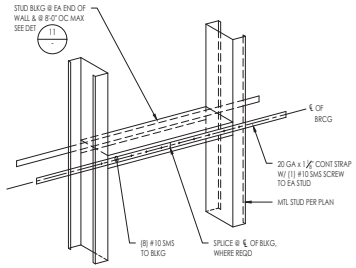
NOTE:
THIS DET IS INTENDED FOR CEILING JSTS THAT SPAN FROM WALL TO WALL @ CONTRS OPTION

CEILING JOIST SCHEDULE & DETAILS

0256-03-CU20 - 5405 - 22

NTS

22

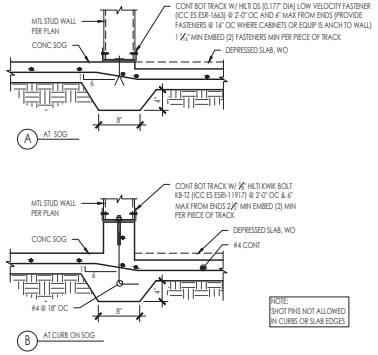


METAL STUD BRACING

0256-03-CU20 - 5405 - 12

NTS

12

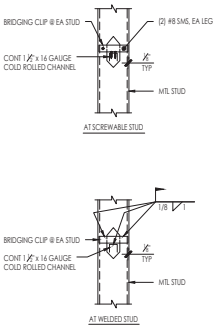


NON-BEARING METAL STUD BOTTOM

0256-03-CU20 - 5405 - 23

NTS

23



METAL STUD BRIDGING

0256-03-CU20 - 5405 - 13

NTS

13

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

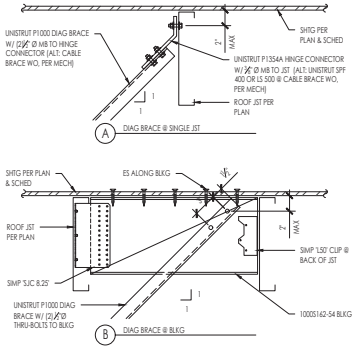
PROJECT TITLE:

TYPICAL STEEL DETAILS

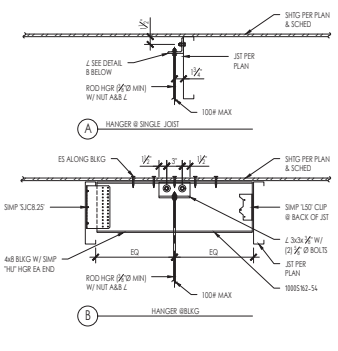
SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS No. 56685 STRUCTURAL STATE OF CALIFORNIA

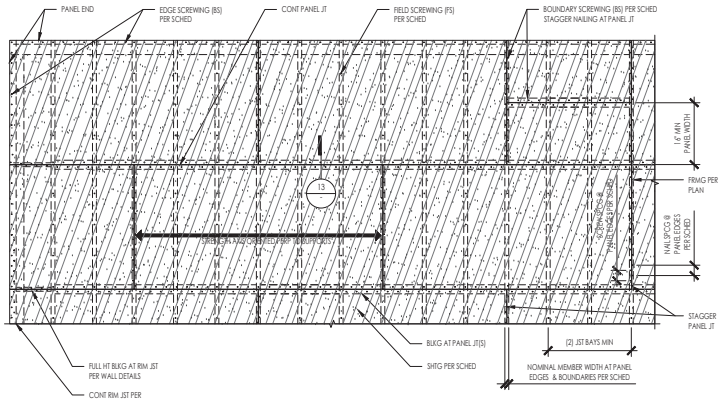
DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-405



UNISTRUT DIAG BRACE TOP CONNECTION NTS 41



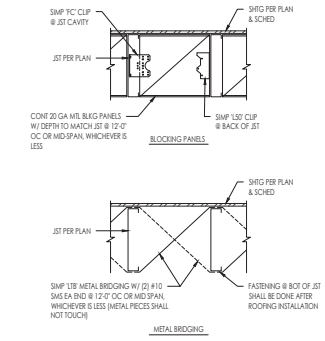
HANGER @ BLKG NTS 31



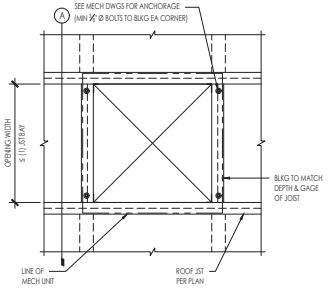
DIAPHRAGM SCHEDULE										
TYPE	SHEATHING	PANEL GAGE	BLOCKING	SCREWS	BOUNDARY SCREWS (BS)	EDGE SCREWS AT CONT. PANEL EDGES (ES)	EDGE SCREWS AT OTHER PANEL EDGES (ES)	FIELD SCREWS (FS)	PANEL EDGE SUPPORT OR NOMINAL MEMBER WIDTH AT PANEL EDGES	LINES OF FASTENERS
A	SURE-BOARD SERIES 2005	22 GA	YES	#8 x 1½"	6	6	6	6	BLOCKING	1
B	SURE-BOARD SERIES 2005	22 GA	YES	#8 x 1½"	4	4	4	6	BLOCKING	1
C	SURE-BOARD SERIES 2005	22 GA	YES	#8 x 1½"	2	2	2	6	BLOCKING	1

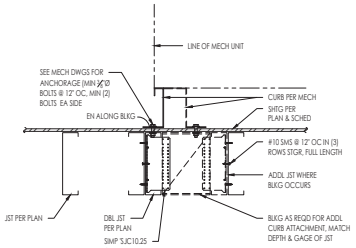
NOTES:
1. MINIMUM EDGE DISTANCE FOR FASTENERS SHALL BE ½" FROM SHEATHING EDGE AND ½" FROM MEMBER EDGE.

SURE-BOARD PLYWOOD DIAPHRAGM SHEATHING NTS 12

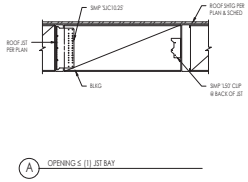


JOIST BRIDGING & BLOCKING NTS 42

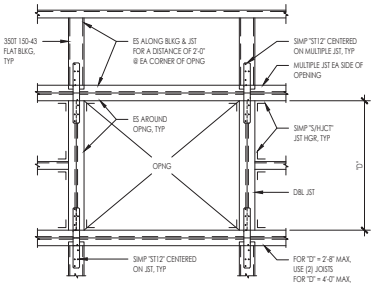




EQUIPMENT SUPPORT PARA JOIST NTS 43

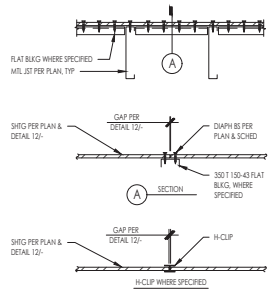


OPENING ≤ (1) JST BAY NTS 33



NOTE:
FOR LARGER OPENINGS REFER TO FRAMING PLANS.

OPENING AT FRAMING NTS or 1" = 1'-0" 23



DIAPHRAGM PANEL JOINTS NTS 13

CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

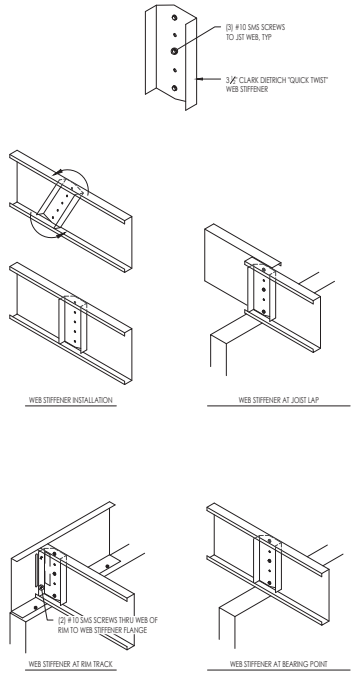
TYPICAL STEEL DETAILS

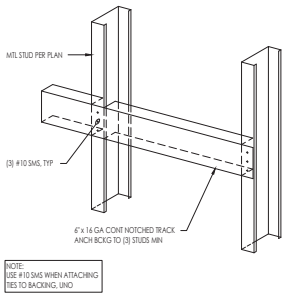
SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DORE No. 36885 STRUCTURAL STATE OF CALIFORNIA

DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-406

41	31	21	
42	32	22	WEB STIFFENER 0256-03-CU20 - S407 - 12 NTS 12
43	33	23	BACKING AT METAL STUDS 0256-03-CU20 - S407 - 13 NTS 13





CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

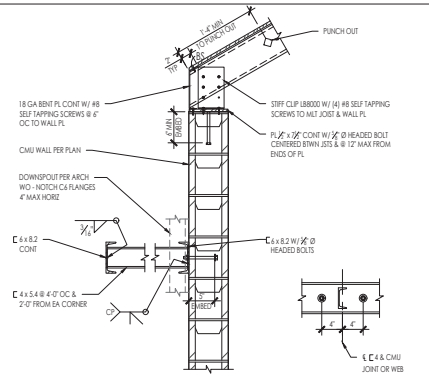
PROJECT TITLE:

TYPICAL STEEL DETAILS

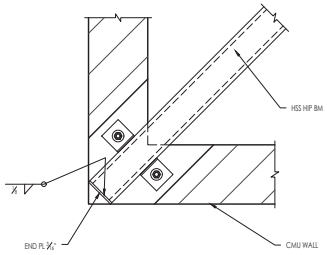
SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS No. 5685 STRUCTURAL STATE OF CALIFORNIA

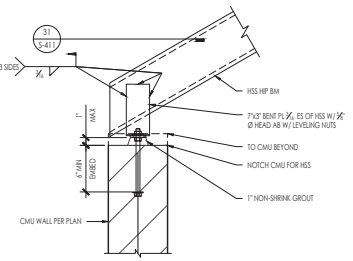
DESIGNED BY:	C. CECIL
DRAWN BY:	A. MERCADO
CHECKED BY:	M. DOREMUS
APPROVED BY:	
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	S-407



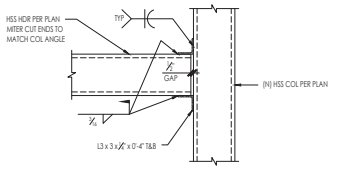
RESTROOM JOIST TO WALL
0256-03-CU20 - S411 - 41
1" = 1'-0"
41



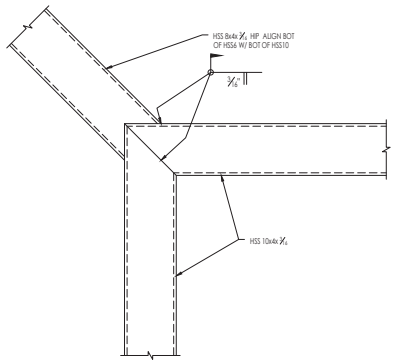
HSS BM TO CMU WALL
0256-03-CU20 - S411 - 31
1-1/2" = 1'-0"
31



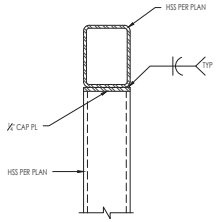
HSS BM TO CMU WALL
0256-03-CU20 - S411 - 21
1-1/2" = 1'-0"
21



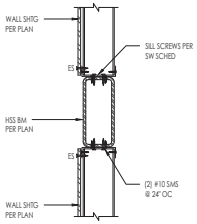
HSS HEADER TO COLUMN
0256-03-CU20 - S411 - 11
1" = 1'-0"
11



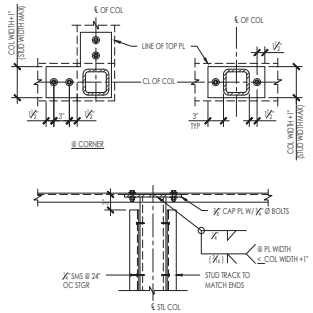
RESTROOM HIP TO SUPPORT BEAMS
0256-03-CU20 - S411 - 42
1" = 1'-0"
42



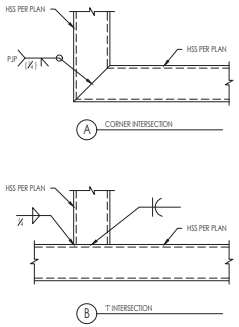
HSS COL TO HSS BEAM
0256-03-CU20 - S411 - 32
NTS
32



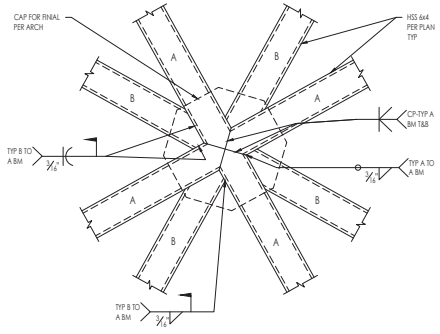
HEADER AT STUD WALL
0256-03-CU20 - S411 - 22
1" = 1'-0"
22



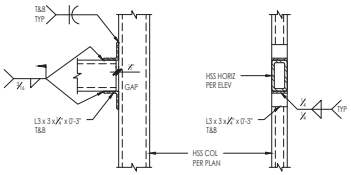
HSS COL TO TOP PLATE CONN
0256-03-CU20 - S411 - 12
1" = 1'-0"
12



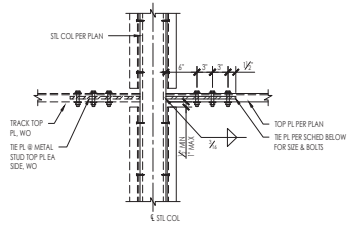
HSS TO HSS CONNECTION
0256-03-CU20 - S411 - 43
NTS
43



KIOSK BEAM @PEAK
0256-03-CU20 - S411 - 33
1" = 1'-0"
33



HSS HORIZ TO HSS COL
0256-03-CU20 - S411 - 23
NTS
23



TIE PLATE SCHEDULE			
MARK	TIE PLATE	BOLTS	REMARKS
A	¼" x 4"	(3) ½" Ø	
B	¼" x 5"	(4) ½" Ø	
C	¼" x 5"	(5) ½" Ø	

TIE PLATE CONNECTION AND SCHEDULE
0256-03-CU20 - S411 - 13
1" = 1'-0"
13

CITY OF SAN LUIS OBISPO

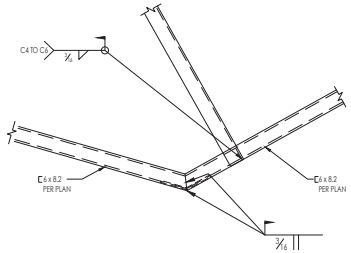
MISSION PLAZA ENHANCEMENTS

PROJECT TITLE:

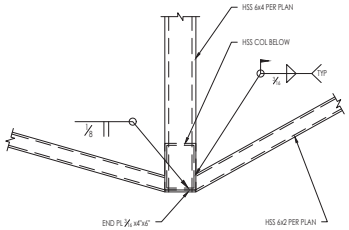
STEEL DETAILS

SHEET TITLE:

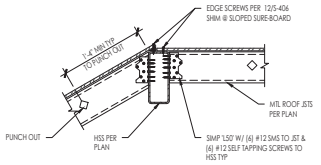
DESIGNED BY: C. CECIL
DRAWN BY: A. MERCADO
CHECKED BY: M. DOREMUS
APPROVED BY:
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO.: 91439-01
PLAN FILE NO. / LOCATION: 0256-03-CU20
SHEET NO.: S-411



41 PLAN VIEW CANOPY SUPPORT 1-1/2" = 1'-0" 31

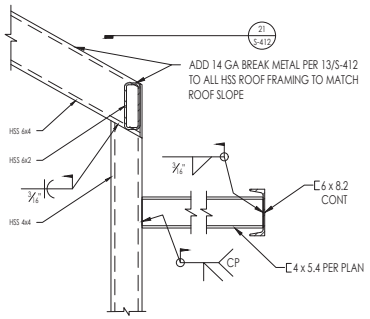


PLAN VIEW - HSS TO HSS NTS or 1-1/2" = 1'-0" 21

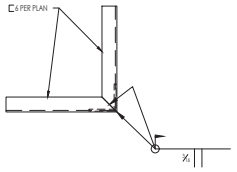


MTL JSTS TO HSS BM 1" = 1'-0" 11

42 32

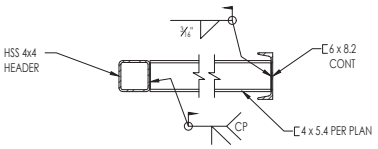


BM HSS TO HSS COL NTS or 1-1/2" = 1'-0" 22

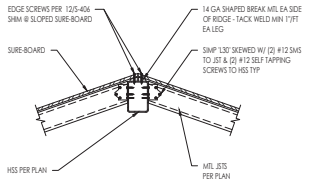


PLAN VIEW NTS or 1-1/2" = 1'-0" 12

43 33



CANOPY SUPPORT NTS or 1-1/2" = 1'-0" 23



JSTS TO HSS BM 1" = 1'-0" 13

PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: STEEL DETAILS

REGISTERED PROFESSIONAL ENGINEER MICHAEL DOREMUS 5685 STATE OF CALIFORNIA

DESIGNED BY: C. CECIL
DRAWN BY: A. MERCADO
CHECKED BY: M. DOREMUS
APPROVED BY:
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
PLAN FILE NO. / LOCATION 0256-03-CU20
SHEET NO. S-412

CONDUIT SYSTEMS NOTES

CONDUIT SYSTEMS USED ON THIS PROJECT SHALL BE AS FOLLOWS

1. PVC SCHEDULE 40 - underground/below slab with GRS elbows and risers tape wrapped).
2. ELECTRICAL METALLIC CONDUIT (EMT) - above grade/slab in building construction and where exposed above 8'-0" aff.
3. GALVANIZED RIGID STEEL (GRS) - where exposed below 8'-0" aff. and/or where subject to physical damage.
4. FLEXIBLE STEEL CONDUIT - above ceilings and/or concealed in building construction (seal tight flex rquired in exterior locations).
5. MC CABLE ALLOWED IN OCCUPANCY R2 ZONES ONLY.

REFER TO SECTION 260533 & 260500 OF SPECIFICATIONS FOR ADDITIONAL INFORMATION. CONDUITS SHALL BE MINIMUM 1/2" UNLESS OTHERWISE NOTED, 3/4" FOR ALL HOME RUN CONDUITS AND WHERE ROUTED BELOW SLAB OR UNDERGROUND. CONDUIT SIZES, WHERE NOT NOTED ON THE DRAWINGS, SHALL BE SIZED FOR MAXIMUM 40% FILL PER CEC 310-6.

ADDITIONAL CONDUIT REQUIREMENTS.

- ROUTE CONDUIT(S) BELOW GRADE OR ABOVE CEILING SO THAT WALL OUTLETS, DEVICES, AND CONDUITS IN ALL EXPOSED BRICK WALL LOCATIONS SHALL BE RECESSED MOUNTED INSIDE BRICK. LOCATE DEVICES AT CELL WITH REINFORCEMENT CENTER AT BRICK AND/OR ONE CELL OVER AWAY FROM JAMB. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR CMU WALL LOCATIONS SECTIONS, AND DETAILS.
- NO CONDUITS OR PIPING IN ANY SPACE SHALL BE EXPOSED AT THE CEILING AND WALL (COORDINATE WITH ALL DISCIPLINES PRIOR TO CONSTRUCTION). LOCATE ALL CONDUIT WITHIN WALLS

CONDUCTORS AND CABLES

REFER TO SPECIFICATIONS 26 0519 FOR ADDITIONAL INFORMATION.

1. WIRE CONNECTORS SHALL BE MINIMUM 75 DEGREE CENTIGRADE RATED AND PROPERLY SIZED FOR THE NUMBER OF CONDUCTORS BEING CONNECTED, TERMINATED, SPLICED, ETC. ALL ABOVE GRADE CONNECTORS SHALL BE SOLDERLESS LUG OR PLASTIC WIRE NUT TYPE, SCREW ON, PRESSURE CABLE TYPE (WIRE UT OR SPRING NUT TYPE) 600 VOLT, 105 DEGREE C, WITH SKIRT TO COVER ALL PORTIONS OF STRIPPED WIRES. CONNECTOR SHALL BE U.L. RATED FOR NUMBER AND SIZE OF CONDUCTORS BEING JOINED TOGETHER AS SPLICED.
2. WIRES AND CABLES FOR LINE VOLTAGE SYSTEM AND CONTROLS. WIRE AND CABLE SHALL BE COPPER, 600 VOLT RATED THROUGH OUT. CONDUCTORS 14AWG OT 10AWG, SOLID OR STRANDED. CONDUCTORS 8 AWG AND LARGER, STRANDED
3. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED. MINIMUM SIZE FOR INDIVIDUAL CONDUCTORS SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON PANEL SCHEDULE OR PLANS. SIZE #8 AWG AND LARGER SHALL BE STRANDED CONDUCTOR. INDIVIDUAL CONDUCTORS SHALL BE INSULATED WITH TYPE, XHHW, THW, THHN/THWN 600 VOLT INSULATION UNLESS OTHERWISE NOTED.
4. PROPER INSULATION TYPE SHALL BE USED FOR THE PROPER ENVIRONMENTAL APPLICATION (I.E. WATERPROOF, WET LOCATION, PLENUM TEMPERATURE RATED). ALL CONDUCTORS, WIRING CABLE WHERE INSTALLED BELOW FLOOR, SLAB OR UNDERGROUND SHALL BE CONSIDERED WET LOCATIONS, AND SHALL BE RATED ACCORDINGLY. NON WATERPROOF CABLING IS NOT ALLOWED IN ANY BELOW GRADE OR WET APPLICATION.
5. GROUP THE COMMON NEUTRAL CONDUCTOR FOR MULTIPLE CIRCUITS WITH ITS ASSOCIATED UNGROUNDED CONDUCTORS WHEN CONTAINED IN THE SAME ENCLOSURE. CEC 200.4(B)
6. THE BRANCH CIRCUIT SERVING EMERGENCY LIGHTING AND POWER CIRCUITS SHALL NOT BE PART OF A MULTIWIRE BRANCH CIRCUIT. CEC 700.19.

RECEPTACLES AT DAMP AND WET LOCATION

A. ALL 15 AND 20AMPERE RECEPTACLES FOR BOTH DAMP AND WET LOCATIONS REQUIRED TO BE LISTED WEATHER-RESISTANT (WR) TYPE PER CEC 406.9 (A) AND (B)

B. CEC 406.9(A) RECEPTACLES IN DAMP LOCATIONS: RECEPTACLES INSTALLED OUTDOORS IN A LOCATION PROTECTED FROM THE WEATHER OR IN OTHER DAMP LOCATIONS SHALL BE AN ENCLOSURE FOR THE RECEPTACLE THAT IS WEATHERPROOF WHEN THE RECEPTACLE IS COVERED (ATTACHMENT PLUG CAP NOT INSERTED AND RECEPTACLE COVERS CLOSE)

C. CEC 406.9(B) RECEPTACLES OF 15 AND 20AMP, 125 AND 250 VOLTS INSTALLED IN A WET LOCATION SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED. AN OUTLET BOX HOOD INSTALLED FOR THIS PURPOSE SHALL BE LISTED AND SHALL BE IDENTIFIED AS 'EXTRA-DUTY" OTHER LISTED PRODUCTS, ENCLOSURES, OR ASSEMBLIES PROVIDING WEATHERPROOF PROTECTION THAT DO NOT UTILIZE AN OUTLET BOX HOOD NEED TO BE MARKED "EXTRA DUTY"

D. EXCEPTION: 15 AND 20AMP, 125 THROUGH 250 VOLT RECEPTACLES INSTALLED IN A WET LOCATION AND SUBJECT TO ROUTINE HIGH-PRESSURE SPRAY WASHING SHALL BE PERMITTED TO HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHEN THE ATTACHMENT PLUG IS REMOVED.

E. ALL 15 AND 20AMPERE RECEPTACLES FOR BOTH DAMP AND WET LOCATIONS REQUIRED TO BE LISTED WEATHER-RESISTANT (WR) TYPE PER CEC 406.9.

F. ALL GFCI PROTECTION MUST BE READILY ACCESSIBLE.

GENERAL NOTES

1. CODE COMPLIANCE: ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH CODES, STANDARDS, AND ORDINANCES AS SET FORTH BY THE AUTHORITIES HAVING JURISDICTION AND THEIR LATEST ADOPTED EDITIONS (IN EFFECT AT TIME OF BUILDING PERMIT APPLICATION) OF THE FOLLOWING PUBLICATIONS:

   A. CALIFORNIA CODE OF REGULATIONS TITLE 24; INCLUDES 2019 CALIFORNIA ELECTRICAL CODE, 2019 CALIFORNIA FIRE CODE, 2019 CALIFORNIA BUILDING CODE, ETC. WITH LOCAL AMENDMENTS AS APPLICABLE.

   B. AMERICANS WITH DISABILITIES ACT (ADA).

2. SAFETY: THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL EQUIPMENT IN A SAFE AND RESPONSIBLE MANNER. KEEP DEAD FRONT EQUIPMENT IN PLACE WHILE EQUIPMENT IS ENERGIZED. CONDUCT ALL CONSTRUCTION OPERATIONS IN A SAFE MANNER FOR EMPLOYEES AS WELL AS OTHER WORKPERSONS OR ANYONE VISITING THE JOB SITE. PROVIDE BARRIERS, FLAGS, TAPE, ETC. AS REQUIRED FOR SAFETY. THE CONTRACTOR SHALL HOLD ALL PARTIES HARMLESS OF NEGLIGENT SAFETY PRACTICES, WHICH MAY CAUSE INJURY TO OTHERS ON OR NEAR THE JOB SITE.

3. FIRE RATED ASSEMBLIES SHALL MAINTAIN RATINGS AS SPECIFIED IN THE CALIFORNIA BUILDING CODE CHAPTER 7. CONTRACTOR SHALL PROVIDE AND INSTALL PHYSICAL ENCLOSURE AROUND FIXTURES, PANELS, ETC. AS REQUIRED. ALL ASSEMBLIES TO BE PENETRATED SHALL BE INSTALLED WITH APPLICABLE THROUGH-PENETRATION FIRESTOP SYSTEM AS DETERMINED BY UL CLASSIFICATION. BEFORE CONSTRUCTION, VERIFY AND COMPLY WITH REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION.

4. MOUNTING HEIGHTS SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

   +15" AFF: RECEPTACLES, TELEPHONE, TV & DATA OUTLETS. (MEASURED BOTTOM OF OUTLET BOX)
   +46" AFF: OUTLET ABOVE COUNTER (MEAUSRED TOP OF OUTLET BOX)
   +48" AFF: LIGHT SWITCHES. (MEASURED TOP OF OUTLET BOX)
   +48" AFF: FIRE ALARM MANUAL PULL STATIONS, T-STATS. (MEASURED TOP OF OUTLET BOX)
   THE LOWER OF +80" AFF TO BOTTOM OF LENS, OR 6" BELOW CEILING: FIRE ALARM VISUALS.

   ELECTRICAL SWITCHES: CONTROLS AND SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF THE ROOM OR AREA TO CONTROL LIGHT AND RECEPTACLE OUTLETS, APPLIANCES OR COOLING, HEATING AND VENTILATING EQUIPMENT, SHALL BE LOCATED NO MORE THAN 48 INCHES MEASURED FROM THE TOP OF THE OUTLET BOX NOR LESS THAN 15 INCHES MEASURED FROM THE BOTTOM OF THE OUTLET BOX TO THE LEVEL OF THE FINISH FLOOR OR WORKING PLATFORM. [CBC 11B-308.1.1]

   ELECTRICAL RECEPTACLE OUTLETS: ELECTRICAL RECEPTACLE OUTLETS ON BRANCH CIRCUITS OF 30 AMPERES OR LESS AND COMMUNICATION SYSTEM RECEPTACLES SHALL BE LOCATED NO MORE THAN 48 INCHES MEASURED FROM THE TOP OF THE RECEPTACLE OUTLET BOX OR RECEPTACLE HOUSING NOR LESS THAN 15 INCHES MEASURED FROM THE BOTTOM OF THE RECEPTACLE OUTLET BOX OR RECEPTACLE HOUSING TO THE LEVEL OF THE FINISH FLOOR OR WORKING PLATFORM [CBC 11B-308.1.2]

   BEFORE ROUGH-IN, VERIFY ALL MOUNTING HEIGHTS AND EXACT LOCATIONS FOR ALL EQUIPMENT ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, OUTLETS, ETC. WITH ARCHITECT OR OWNER. PLACE DEVICES LOCATED ABOVE COUNTERS, SHELVING, ETC. AND IN BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF WAINSCOTING, COUNTER SPLASH, SHELVING, ETC. ARCHITECTURAL SHEETS SHALL GOVERN.

4. LABEL PANELS, CABINETS, BACKBOARDS, MAIN DEVICES, SAFETY SWITCHES, CONTACTORS AND OTHER SPECIFICALLY DESIGNATED EQUIPMENT SHOWN ON PLANS. USE ENGRAVED LAMINATED PLASTIC NAMEPLATES ATTACHED BY SCREWS OR RIVETS. FOR FEEDERS, NEATLY AND INDELIBLY LABEL CONDUIT DESTINATIONS ON BOTH VISIBLE ENDS OF CONDUIT RUNS WHERE CONDUITS TERMINATE AT DESIGNATED ENCLOSURES, STRUCTURES OR EQUIPMENT (INCLUDING PULL AND SPLICE BOXES).

5. EQUIPMENT ANCHORAGE NOTE
   ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE ANCHORED OR BRACED TO MEET THE HORIZONTAL AND VERTICAL FORCES PRESCRIBED IN THE 2019 CBC, SECTIONS 1613A AND 1616A AND ASCE 7-10 SECTIONS 13.3, 13.4 & 13.6.

   THE ATTACHMENT OF THE FOLLOWING ITEMS SHALL BE DESIGNED TO RESIST THE FORCES PRESCRIBED ABOVE, BUT NEED NOT BE DETAILED ON THE PLANS PER 2019 CBC SECTION 1616A.1.18:

   A. FURNITURE(EXCEPT STORAGE CABINETS AS NOTED IN 2019 CBC TABLE 13.5-1)
   B. TEMPORARY OR MOVABLE EQUIPMENT WITH EXCEPTIONS NOTED IN 2019 CBC SECTION 1616A.1.18 ITEM 2.
   C. ARCHITECTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS IN SEISMIC DESIGN CATEGORIES D, E, OR F
      THAT MEET ALL OF THE CRITERIA LISTED IN 2019 SECTION 1616A.1.18 ITEM 3.
   D. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUPPORTED BY VIBRATION ISOLATORS.
   E. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A
      WALL

   FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL/ELECTRICAL ENGINEER.

   PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

   PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO RESIST THE FORCES PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.8, 13.6.7, AND 13.6.5.5, ITEM 6, RESPECTIVELY.

   THE BRACING AND ATTACHMENTS TO THE STRUCTURE SHALL COMPLY WITH ONE OF THE OSHPD PRE-APPROVALS WITH AN OPA#, SUCH AS MASON INDUSTRIES (OPA 349), OR ISAT (OPA 485) AS MODIFIED TO SATISFY ANCHORAGE REQUIREMENTS OF ACI 318, APPENDIX D.

   COPIES OF THE MANUAL SHALL BE ON THE JOBSITE PRIOR TO STARTING HANGING AND BRACING OF THE PIPE, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS.

   THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

ABBREVIATIONS

A	AMPERE
AB	AMP BREAKER
ABAND	ABANDONED
ABV	ABOVE
AC	ALTERNATING CURRENT
AC-#	AIR CONDITIONER
ADJ	ADJACENT
AF	AMP FUSE, AMP FRAME
AFF	ABOVE FINISH FLOOR
AFG	BOVE FINISH GRADE
AIC	AMPERES INTERRUPTING CAPACITY
AI	ALUMINUM
AS	AMP SWITCH RATING
ATS	AUTOMATIC TIME SWITCH
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIBLE/AUDIO VISUAL
AWG	AMERICAN WIRE GAGE
BFG	BELOW FINISH GRADE
BIL	BASIC IMPULSE LEVEL
BLDG	BUILDING
C	CONDUIT
-C-	CATV CONDUIT
CAB'T	CABINET
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER, CODE BLUE
CBC	CA. BUILDING CODE
CEC	CA. ELECTRICAL CODE CA. ENERGY COMMISSION
CF	COMPACT FLUORESCENT
CFC	CALIFORNIA FIRE CODE
CLG	CEILING
CL	CENTER LINE
CKT	CIRCUIT
CNT'R	CONTRACTOR
C.O.	CONDUIT ONLY (W/PULLROPE)
COND	CONDUIT, CONDUCTOR
CR	CRITICAL BRANCH
CSFM	CALIFORNIA SFM
CT	CURRENT TRANSFORMER
Cu	COPPER
CU-#	CONDENSING UNIT
D	DEPTH
DC	DIRECT CURRENT
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DPST	DOUBLE POLE SINGLE THROW
DW	DISHWASHER
EM	EMERGENCY
(E)	EXISTING
EA	EACH
EB	ELECTRONIC BALLAST
EC	ELECTRICAL CONTRACTOR
EC-#	EVAPORATIVE COOLER
EF-#	EXHAUST FAN
EL	EVENING LIGHT
ELEC	ELECTRICAL
EM	EMERG BATTERY BACKUP EMERGENCY BALLAST
EMERG	EMERGENCY
EOL	END OF LINE
EQUIP'T	EQUIPMENT
ES	ENERGY SAVING
(EXN)	(E) IN (N) LOCATION
(EXR)	(E) TO BE (R)
EXT	EXTERIOR
F	FLUORESCENT
(F)	FUTURE
F-#	FURNACE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FAT	FIRE ALARM TERMINAL
FAU	FORCED AIR UNIT
FBO	FURNISHED BY OTHERS
FC-#	FAN COIL
FLA	FULL LOAD AMPS
FLR	FLOOR
FLUOR	FLUORESCENT
FS	FUSIBLE SWITCH
FSAS	FIRE STATION ALERTING SYSTEM
FVNR	FULL VOLTAGE NON-REVERSING
G	GROUNDING CONDUCTOR
GC	GENERAL CONTRACTOR
GD	GARBAGE DISPOSAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
GWS	GANG WITH SWITCH
H	HEIGHT, HIGH
HACR	HEATING, AC & REFRIG
HID	HIGH INTENSITY DISCHARGE
HO	HIGH OUTPUT
HOA	HAND-OFF-AUTO
hp	HORSEPOWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
IC	INTERCOM
ID	IDENTIFICATION
IF	INSIDE FROST
IG	ISOLATED GROUND
J-BOX	JUNCTION BOX
k	QUANTITY 1000
kVA	KILOVOLTAMPS
kW	KILOWATT
LC	LIGHTING CONTACTOR
LPS	LOW PRESSURE SODIUM
LRA	LOCKED ROTOR AMPS
LS	LIFE SAFETY BRANCH
LT	LIGHT
LTG	LIGHTING
LV	LOW VOLTAGE
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CKT AMPS
MCB	MAIN CIRCUIT BREAKER
MCTB	MAIN CATV TERMINAL BOARD
MCTC	MAIN CATV TERMINAL CABINET
MECH	MECHANICAL
MFR	MANUFACTURER
MFS	MAIN FUSIBLE SWITCH
MH	METAL HALIDE
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OCP
MSB	MAIN SWITCHBOARD
MT	MOUNT
MT HT	MOUNTING HEIGHT
MTS	MANUAL TRANSFER SWITCH
MTTB	MAIN TELEPHONE TERMINAL BOARD
MTTC	MAIN TELEPHONE TERMINAL CABINET
MW	MICROWAVE
N	NEUTRAL (GROUNDED CONDUCTOR)
(N)	NEW
N3R	NEMA 3R
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NAT'L ELEC MANUFACTURER'S ASSOC
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NPF	NORMAL POWER FACTOR
NTS	NOT TO SCALE
OC	ON CENTER
OCP	OVERCURRENT PROTECTION
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OSA	OFFICE of the STATE ARCHITECT
OSHPD	OFFICE of STATEWIDE HEALTH PLANNING & DEVELOPMENT
OVLD	OVERLOAD
P	POLE
PA	PUBLIC ADDRESS
PB	PULLBOX
PC	PULL CHAIN
PC	PHOTOCELL
PC	PLUMBING CONTRACTOR
ph	PHASE
PNL	PANEL
POC	POINT OF CONNECTION
-PP-	POWER PRIMARY
-PS-	POWER SECONDARY
PV	PHOTOVOLTAIC
(R)	RELOCATE(D)
RECEPT	RECEPTACLE
REF	REFRIGERATOR
REQ'D	REQUIRED
RLA	RATED LOAD AMPS
RM	ROOM
RMC	RIGID METAL CONDUIT
RMV	REMOVE
RPLC	REPLACE
RS	RAPID START
SC	SIGNAL CABINET
SCC	SHORT CKT CURRENT
SFM	STATE FIRE MARSHAL
SHT	SHEET
SL	SLIMLINE, SWITCH LEG
SPEC	SPECIFICATION
SPST	SINGLE POLE SINGLE THROW
SQ	SQUARE
STR'G	STORAGE
SURF	SURFACE
SVC	SERVICE
SW	SWITCH
T	TRANSFORMER, TERMINAL
-T-	TELEPHONE CONDUIT
(TBR)	TO BE REMOVED
TC	TIME CLOCK
TEL	TELEPHONE
TELCO	TELEPHONE COMPANY
TS	TIME SWITCH
TSO	TIME SWITCH OVERRIDE
TSP	TWISTED SHIELDED PAIR
TTB	TELEPHONE TERMINAL BOARD
TTC	TELEPHONE TERMINAL CABINET
TX	TRANSFORMER
TYP	TYPICAL
TYP SIM	TYPICAL SIMILAR
UC	UNDERCABINET, UNDERCOUNTER
UG	UNDERGROUND
UGPS	UNDERGROUND PULL SECTION
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
USA	UG SVC ALERT 800-642-2444
V	VOLT
VA	VOLT AMPERES
VAC	VOLT ALTERNATING CURRENT
VHO	VERY HIGH OUTPUT
VOLT	VOLTAGE
VR	VANDAL-RESISTANT
W	WIDTH, WATT, WIRE
WH-#	WATER HEATER
WP	WEATHERPROOF (NEMA 3R)
XFMR	TRANSFORMER
+48	INDICATES MOUNTING HEIGHT AFF

GENERAL SITE PLAN NOTES

A. UTILITY COMPANY CONTACTS: BEFORE CONSTRUCTION, COORDINATE & VERIFY ALL UTILITY COMPANY REQUIREMENTS:

   PACIFIC GAS AND ELECTRIC (PG&E)
   JUSTIN McDONALD
   805-546-1271
   JKMO@PGE.COM
   APPLICATION #124816031

   AT&T
   NEIL ZAKARIA
   805-704-3813
   NEIL.ZAKARIA@ATT.COM

B. TRENCHING AND BACKFILLING FOR ALL CONDUIT SYSTEMS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL CONDUITS SHALL HAVE MINIMUM COVER REQUIREMENTS AS SPECIFIED IN CEC 300-5. MORE STRINGENT DEPTH REQUIREMENTS MAY BE IMPOSED BY UTILITY COMPANY AND / OR THIS SPECIFICATION. JOINT TRENCHING MAY BE UTILIZED WHERE PRACTICABLE AND WERE PERMITTED BY THIS SPECIFICATION.

C. LOCATIONS OF EXISTING UNDERGROUND (UG) UTILITY SYSTEMS SHALL BE DETERMINED BY CALLING UNDERGROUND SERVICE ALERT (USA). WHEN PLANNING UNDERGROUND WORK, AND BEFORE YOU DIG, CONTACT UNDERGROUND SERVICE ALERT (USA) AT LEAST 48 HOURS PRIOR TO EXCAVATION (WEEKENDS EXCLUDED) FOR THE LOCATION OF UNDERGROUND GAS AND ELECTRIC LINES OR EQUIPMENT.

D. MAINTAIN REQUIRED CLEARANCES FROM ALL SANITARY SEWER, WATER AND STORM DRAIN PIPING. REFER TO CIVIL PLANS FOR EXACT LOCATIONS AND DEPTHS OF PIPING.

E. ALL SITE UTILITY WORK SHALL BE INSTALLED PER THE UTILITY COMPANY ISSUED CONSTRUCTION DRAWINGS AND SPECIFICATIONS SPECIFIC TO THIS PROJECT. ANY UTILITY WORK PERFORMED WITHOUT PRIOR UTILITY COMPANY APPROVAL SHALL BE DONE AT THE CONTRACTOR'S RISK.

F. CONTRACTOR TO PROVIDE SECURITY LIGHTING WITHIN FENCE CONSTRUCTION AREA DURING NON-WORK HOURS. CONTRACTOR TO PROVIDE TEMPORARY LIGHTING FOR PEDESTRIAN PATHWAY OUTSIDE OF CONSTRUCTION FENCING IN VICINITY OF CONSTRUCTION AREA.

LEGEND

NOTE: INTERPRET IN CONTEXT

LIGHT FIXTURES

- CEILING SURFACEMOUNT
- WALL SURFACEMOUNT
- PENDANT MOUNT
- RECESSED DOWNLIGHT
- RECESSED WALLWASH
- RECESSED FLUOR.
- SURFACE FLUOR.
- STRIP FIXTURE UON
- TRACK LIGHT
- DIRECTIONAL FLOOD
- EMERGENCY FIXTURE
- POLE LIGHT
- POLE LIGHT- DECORATIVE
- UPLIGHT- FLUSH IN GRADE
- BOLLARD
- TANDEM-WIRED LAMPS
- UNDERCABINET LIGHT
- WALL SURFACEMOUNT LINEAR TYPE
- PENDANT LINEAR FLUOR.
- RECESSED WALLMOUNT
- WALLPACK
- EXIT LIGHT- WALL
- EXIT LIGHT- CEILING (ARROW INDICATES DIRECTION)
- A — LETTER ADJACENT INDICATES FIXTURE TYPE

POWER/COMM.

- SINGLE RECEPT.
- DUPLEX RECEPT.
- DUPLEX- HALF SWITCHED
- DOUBLE DUPLEX
- SPECIAL CONFIGURATION
- FLOORMOUNT 208V, 1Ø RECEPT
- DUPLEX- FLOOR OUTLET
- GFI — GROUND FAULT CIRCUIT INTERRUPT
- M — MOUNTED ABOVE COUNTER
- J — JUNCTION BOX
- TELEPHONE OUTLET
- DATA OUTLET
- PHONE/DATA COMBO OUTLET
- MOUNTED ABOVE COUNTER
- TV — TELEVISION OUTLET
- SAFETY DISCONNECT
- DROP CORD RECEPT
- JC — ABOVE-CLGMOUNT J-BOX
- TV — TV OUTLET-FLOORMOUNT
- TELEPHONE FLOOR OUTLET
- DATA FLOOR OUTLET
- PHONE/DATA COMBO FLOOR OUTLET

CONDUIT/WIRE

- NEW
- UNDERGROUND
- NEW POWER HOMERUN (3 HOTS & NEUT SHOWN)
- ISOLATED GROUND
- E — EXISTING TO REMAIN
- (E) POWER HOMERUN
- WIRE LINE- CONTINUES
- CONDUIT STUB (W/MARKER)
- VERTICAL CONDUIT RUN
- CONDUIT SEAL
- FLEXIBLE CONNECTION
- LV — LOW VOLTAGE
- SURFACEMOUNT RACEWAY
- INDICATES LINE CONTINUES
- CORD W/PLUG

WIFI

- AP — WIRELESS ACCESS POINT

SWITCHES

- $ — SPST
- $2 — DPST
- $3 — 3-WAY
- $4 — 4-WAY
- $OS — VACANCY SENSOR
- $OSD — VACANCY SENSOR WITH DIMMING
- $D — DIMMER
- LCP — LIGHTING CONTROL PANEL
- PP — NLIGHT POWER PACK

MISCELLANEOUS

- CIRCUIT BREAKER
- FUSIBLE SWITCH
- GROUND
- Ø — PHASE
- FLUSHMOUNT PANEL
- SURFACEMOUNT PANEL
- FLUSHMOUNT CABINET
- SURFACEMOUNT CABINET

SOUND

- S — SPEAKER- CLG FLUSHMOUNT
- A — AUXILIARY/MICROPHONE WALL FLUSHMOUNT
- V — VOLUME CONTROL WALL FLUSHMOUNT
- W — WIRELESS SYSTEM- WALL FLUSHMOUNT

CONVENTIONS

- X — NUMBERED SHEET NOTES: REFERS TO NOTES ON SAME SHEET AS REFERENCE
- 1 / - — DETAIL REFERENCE:
  -DETAIL DESIGNATION
  -SHEET NUMBER REFERENCE
- 3103 — FEEDER SCHEDULE DESIGNATION (EXAMPLE: 3103 = 310 AMPERE, 600V, 3 CURRENT CARRYING CONDUCTORS, QUANTITY (1) AND SIZE (4)) PREFIXES 'M' INDICATES MEDIUM VOLTAGE, 'CO14' INDICATES CONDUIT ONLY,

ELECTRICAL DRAWING LIST

E-001	ELECTRICAL NOTES, LEGEND, AND ABBREVIATIONS
E-002	SINGLE LINE DIAGRAM AND FIXTURE SCHEDULE
E-003~E-005	ELECTRICAL DETAILS
E-006~E-008	EXISTING POLE IMAGES
ED-101~102	ELECTRICAL DEMOLITION SITE PLANS
ES-101	ELECTRICAL SITE PLAN
EK-101	ELECTRICAL KIOSK FLOOR PLANS
ER-101	ELECTRICAL RESTROOM FLOOR PLANS
ET24101	ENERGY COMPLIANCE FORMS - INTERIOR LIGHTING (RESTROOM)
ET24101	ENERGY COMPLIANCE FORMS - INTERIOR LIGHTING (KIOSK)

THOMA ENGINEERING
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CITY OF SAN LUIS OBISPO

PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: ELECTRICAL GENERAL NOTES, LEGEND, ABBREVIATIONS, AND SCHEDULES

REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. THOMA
NO. 10757
ELECTRICAL
STATE OF CALIFORNIA

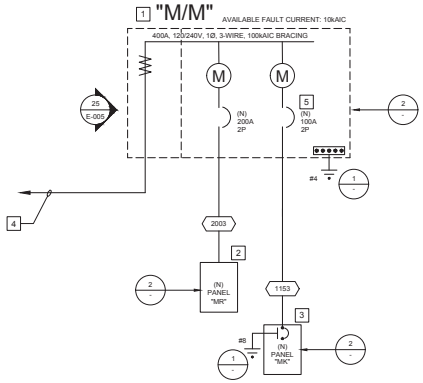
EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	CJ
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	E-001

Feb 16, 2024 - 1:58pm - CReyes - K:\ENG\2020\20-8170\20-8170_E-001_GENERAL NOTES, LEGENDS, AND ABBREVIATIONS.dwg

LIGHTING FIXTURE SCHEDULE

TYPE	ILLUSTRATION	MANUFACTURER	CATALOG NO.	VOLTAGE	MAX. VA.	LAMPING	MOUNTING	DESCRIPTION
A		KENALL	FS824R 2TB MPA DB 33L40K 120V	120	37	LED, 40K	WALL	2FT LINEAR LED LIGHT, HIGH IMPACT RESISTANT LENS
B1		LITHONIA	BLWP4 40L ADP EZ1 LP840	MVOLT	35	LED, 40K	SURFACE	4FT LINEAR WRAP, 0-10V DIMMING
B2		LITHONIA	BLWP2 86L ADP EZ1 LP840	MVOLT	7	LED, 40K	WALL, +9.5" AFF	2FT LINEAR WRAP, 0-10V DIMMING
SW		HANDELMAN	OL12.9WB CORDOVA 9" WALL BRACKET	120	30	(3)10W LED BULB, 4000K	WALL	DECORATIVE EXTERIOR WALL LIGHT (9"WX28"HX 12" PROJECTION) AMBER GLAZING AT PERFORATED METAL, CLEAR GLAZING AT WINDOWS.
SD		BEGA	24813 K4 BRZ MGU	MVOLT	10.4	LED, 40K	RECESSED	LED RECESSED CEILING DOWN LIGHTS, VORTEX REFLECTOR, ASYMMETRIC BEAM DISTRIBUTION, BRONZE FINISH, 0-10V DIMMING, MARINE GRADE UNDERCOAT
SG		TARGETTI	KPLM RP HE MW L2 RGBW 1DU2525K IDU2521 1E2524 1E0388 DX8PLEAD50 TGDMXSLESAU11	120	15w	LED, RGBW	IN-GRADE, CONCRETE POUR APPLICATION	MINI RGBW IN-GRADE LIGHTING, PROVIDE 1-50W DMX POWER SUPPLY (PS041) FOR TWO "SG". REFER TO SITE PLAN (50FT DIRECT BURIAL LENGTH), DMX CONTROL
SP		HANDELMAN (22 / E-005)	CUSTOM FIXTURE WITH (2)35W LED PACKAGE	120	70W	LED, 40K	CONCRETE BASE (5 / E-005)	DECORATIVE POLE, 2-14"X30" LED HEAD, WITH A 5" DIAMTER X 16FT POLE. INCLUDES BANNER ARM AND 120V OUTLET



COPPER FEEDER SCHEDULE

FEEDER NO.	RACEWAY QUANTITY/SIZE	CONDUCTORS
2003	(1)2"C (PVC 40)	(3)#3/0 THWN AND (1)#6 CU GROUND.
1153	(1) 1-1/2"C (PVC 40)	(3) #2 THWN & (1) #8 GND.

REFERENCE NOTES

1. NEW WALL HUNG PG&E APPROVED UNDERGROUND PULL SECTION [RYCO #PB400-1 OR EQUAL] AND TWO METER SECTION WITH CIRCUIT BREAKERS (22KAIC) [RYCO #WCBHM22-1] NEMA 3R. 400AMP SERVICE, 120/240V, 1Ø, 3W.
2. NEW 200AMP PANEL MOUNTED INSIDE BUILDING RESTROOM PLUMBING SHAFT SEE FLOOR PLAN FOR LOCATION.
3. NEW SERVICE ENTRANCE RATED LOAD CENTER PANEL FOR KIOSK. SEE FLOOR PLAN FOR LOCATION
4. NEW 5" UNDERGROUND SERVICE CONDUIT TO PG&E SECONDARY SITE PULL BOX.
5. PROVIDE 200AMP FRAME WITH A 100AMP TRIP BREAKER.

SINGLE LINE DIAGRAM NOTES

A. ALL CONDUCTORS SHALL BE COPPER WITH TYPE [THHN/THWN] INSULATION UNLESS OTHERWISE NOTED.

B. ALL SWITCHES, CIRCUIT BREAKERS AND OTHER EQUIPMENT, AS SPECIFIED, SHALL HAVE TERMINATION PROVISIONS LISTED AND IDENTIFIED FOR USE WITH 75 DEG. CONDUCTORS, AND ALL FEEDER CONDUCTORS, AND CONDUITS, ARE SIZE BASED ON USE OF 75 DEG. C COPPER WIRES TYPE THWN/THHN.

C. ALL EQUIPMENT SHALL HAVE AN APPROVED TESTING LABORATORY LABEL ATTACHED [UL, CSA, ETC.] (CEC 110-2).

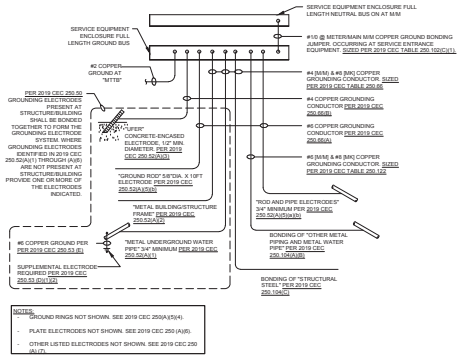
D. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SUPPLYING METER/MAIN AND LOAD CENTER SIZED TO FIT IN THE AVAILABLE SPACE IN THE ELECTRIC ROOM. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONAL INFORMATION NOT SHOWN ON THE ELECTRICAL PLANS. CONTRACTOR SHALL SUBMIT A 1/4" SCALE DRAWING OF ALL SWITCHGEAR, AND TERMINATION CABINETS ON FLOOR PLAN WITH SUBMITTAL.

E. PER CALIFORNIA TITLE 24 SECTION 130.5, WIRING PROVISIONS HAVE BEEN MADE FOR DISAGGREGATION OF THE ELECTRICAL CIRCUITS, THE OPTIONAL METERING HAS NOT BEEN PROVIDED FOR THIS PROJECT.

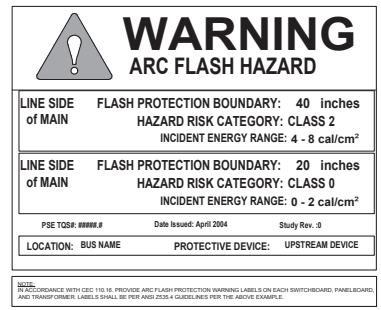
F. REFER TO PANEL SCHEDULES FOR INDIVIDUAL BRANCH CIRCUIT VOLTAGE DROP AND/OR SINGLE LINE DIAGRAM FOR FEEDER VOLTAGE DROP CALCULATIONS.

G. BRANCH CIRCUIT/FEEDER DISTANCE IS SHOWN FOR REVERENCE ONLY AS THE BASIS OF VOLTAGE DROP CALCULATIONS. CONDUCTOR DISTANCE AS INDICATED SHALL NOT BE USED FOR BIDDING/CONSTRUCTION PURPOSES. SHOULD THE FEEDER DISTANCE EXCEED THE LENGTH NOTED PER INSTALLATION CONDITIONS, NOTIFY THE ENGINEER OF RECORD. TYPICAL.

SINGLE LINE DIAGRAM



1 GROUND/BOND DETAIL



2 ARC FLASH SIGNAGE

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CITY OF SAN LUIS OBISPO

PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: SINGLE LINE DIAGRAM AND FIXTURE SCHEDULE

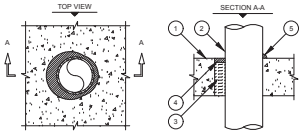
REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	CJ
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	E-002

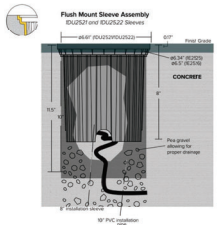
F-RATING = 2-HR.
T-RATING = 0-HR.
L-RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L-RATING AT 400° F = 4 CFM/SQ. FT.
W-RATING = CLASS I (SEE NOTE NO. 4 BELOW)

1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING):
   A. ANY LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
   B. ANY UL-U/UL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
   A. MAXIMUM 10" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 10" NOMINAL DIAMETER CAST IRON PIPE.
   C. MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE OR TUBING.
   D. MAXIMUM 4" NOMINAL DIAMETER STEEL CONDUIT.
   E. MAXIMUM 4" NOMINAL DIAMETER EMT.
3. MINIMUM 3" THICKNESS MINERAL WOOL (MINIMUM 4 PCF DENSITY) TIGHTLY PACKED FOR NOMINAL 4" DIAMETER (AND SMALLER), AND MINIMUM 4" THICKNESS MINERAL WOOL (MINIMUM 4 PCF DENSITY) TIGHTLY PACKED FOR PIPES GREATER THAN NOMINAL 4" DIAMETER.
4. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT, CP 601S ELASTOMERIC FIRESTOP SEALANT, CP 604 SELF-LEVELING FIRESTOP SEALANT, OR CP 606 FLEXIBLE FIRESTOP SEALANT.
5. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT, CP 601S ELASTOMERIC FIRESTOP SEALANT, OR CP 606 FLEXIBLE FIRESTOP SEALANT APPLIED AT POINT OF CONTACT. (NOT REQUIRED WHEN CP 604 SELF-LEVELING FIRESTOP SEALANT IS USED, ITEM NO. 4).



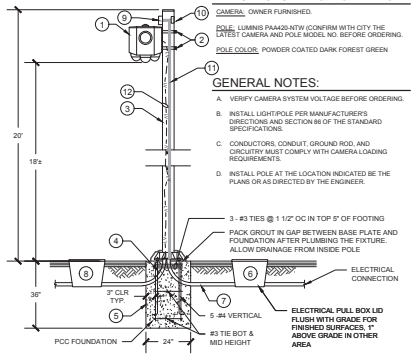
NOTES :
1. MAXIMUM DIAMETER OF OPENING = 12".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-1/4".
3. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT, CP 601S ELASTOMERIC FIRESTOP SEALANT, OR CP 606 FLEXIBLE FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.
4. W-RATING APPLIES ONLY WHEN CP 601S ELASTOMERIC FIRESTOP SEALANT OR CP 604 SELF-LEVELING FIRESTOP SEALANT IS USED.

7 METAL PIPE THROUGH CONCRETE OR BLOCK WALL/FLOOR
NOT TO SCALE



INSTALLATION DIAGRAM FOR CONCRETE POUR APPLICATION PER MANUFACTURER REQUIRMENTS

4 FIXTURE TYPE "SG" MOUNTING DETAIL
NOT TO SCALE



MANUFACTURER & MODEL NO.:

CAMERA: OWNER FURNISHED.

POLE: LUMINIS PAA420-NTW (CONFIRM WITH CITY THE LATEST CAMERA AND POLE MODEL NO. BEFORE ORDERING.

POLE COLOR: POWDER COATED DARK FOREST GREEN

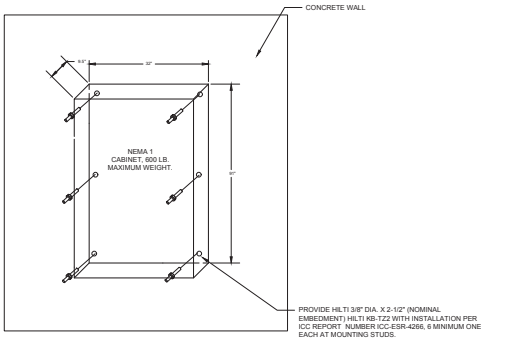
GENERAL NOTES:

A. VERIFY CAMERA SYSTEM VOLTAGE BEFORE ORDERING.
B. INSTALL LIGHT/POLE PER MANUFACTURER'S DIRECTIONS AND SECTION 86 OF THE STANDARD SPECIFICATIONS.
C. CONDUCTORS, CONDUIT, GROUND ROD, AND CIRCUITRY MUST COMPLY WITH CAMERA LOADING REQUIREMENTS.
D. INSTALL POLE AT THE LOCATION INDICATED BE THE PLANS OR AS DIRECTED BY THE ENGINEER.

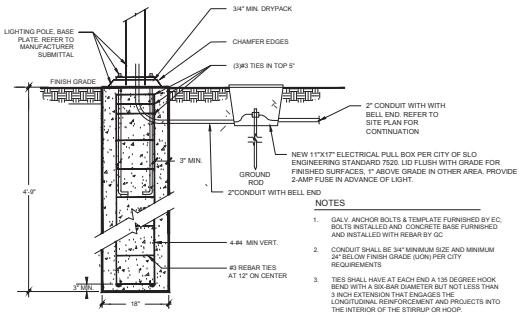
INSTALLATION NOTES:

1. CAMERA: CITY FURNISHED AND INSTALLED CAMERA. CONTRACTOR TO TERMINATE FIBER. COORDINATE WITH CITY IT.
2. POLE MOUNT: GRAINGER 3/4" WIDE, T-BOLT HOSE CLAMP, PK5 OR APPROVED EQUAL.
3. POLE: (PAA240) LUMINIS 5" DIAMETER X MIN .124 WALL, 6061-T6 ALUMINUM ALLOY, 18' HEIGHT, RATED FOR MIN 80 MPH WIND LOAD WITH REINFORCED CASE BASE PLATE AND CAST ALUMINUM BASE COVER. PROVIDE END CAP.
4. ANCHOR BOLTS: GALVANIZED STEEL, 3/4" Ø X 30" WITH 4" LEG, (4) TOTAL WITH GALVANIZED NUTS AND WASHERS (8) TOTAL.
5. PCC FOUNDATION: CLASS 3 CONCRETE
6. PULL BOX: SHALL BE 11"X17" CONCRETE PULL BOX MARKED "ELECTRICAL" AND INCLUDE VANDALISM PROOF BOLTS.
7. CONDUIT: 2" MIN.
8. PULL BOX: SHALL BE 11"X17" CONCRETE PULL BOX MARKED "FIBER" AND INCLUDE VANDALISM PROOF BOLTS.
9. PROVIDE POLE WITH LOCKABLE 1-GANG METALLIC WHILE-IN USE COVER WITH GFI WATER RESISTANT DUPLEX RECEPTACLE DEVICE. (METALLIC COVER TO MATCH POLE FINISH). LOCATE WITH ENT ENTRY AT 3" BELOW TOP OF BOX CENTERLINE.
10. PROVIDE HANDHOLE OPPOSITE OF OUTLET. REINFORCED HANDHOLE WITH W.P. COVER. PROVIDE A MEANS OF STRAIN RELIEF TO SUSPEND THE ENT.
11. BRANCH CIRCUIT 1" ENT CONDUIT. SWEEP CONDUIT INTO EXTERIOR J-BOX.
12. FIBER TO CITY REQUIREMENTS.

1 POLE MOUNTED CAMERA
NOT TO SCALE



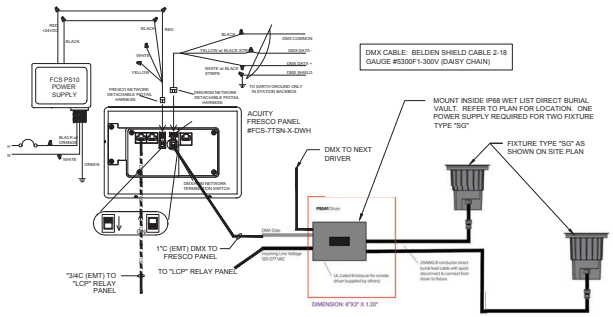
8 SURFACE MOUNTING DETAIL AT CONCRETE WALL
NOT TO SCALE



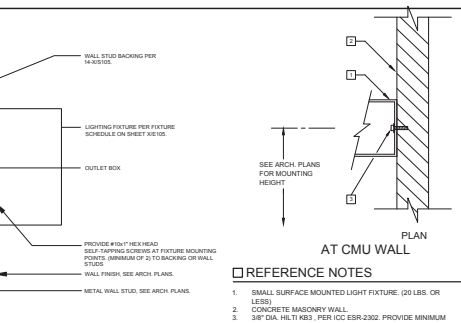
NOTES

1. GALV. ANCHOR BOLTS & TEMPLATE FURNISHED BY EC; BOLTS INSTALLED AND CONCRETE BASE FURNISHED AND INSTALLED WITH REBAR BY GC.
2. CONDUIT SHALL BE 3/4" MINIMUM SIZE AND MINIMUM 24" BELOW FINISH GRADE (UON) PER CITY REQUIREMENTS
3. TIES SHALL HAVE AT EACH END A 135 DEGREE HOOK BEND WITH A SIX-BAR DIAMETER BUT NOT LESS THAN 3 INCH EXTENSION THAT ENGAGES THE LONGITUDINAL REINFORCEMENT AND PROJECTS INTO THE INTERIOR OF THE STIRRUP OR HOOP.
4. ADD #6 SOLID UFER GROUND TO EACH BASE. LOCATE AT 1'X1'7" PULL BOX NEXT TO EACH LIGHT POLE.

5 FIXTURE TYPE 'SP' MOUNTING DETAIL
NOT TO SCALE



2 FIXTURE TYPE 'SG' WIRING DIAGRAM
NOT TO SCALE

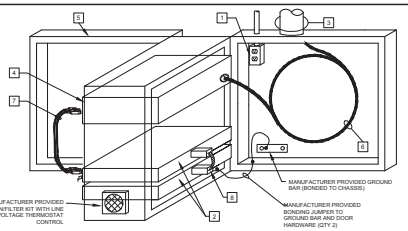


REFERENCE NOTES

1. SMALL SURFACE MOUNTED LIGHT FIXTURE. (20 LBS. OR LESS)
2. CONCRETE MASONRY WALL.
3. 3/8" DIA. HILTI KB3 , PER ICC ESR-2302. PROVIDE MINIMUM 2-1/2" EMBEDMENT.

NOTE:
FLUSH MOUNTED OUTLET BOX IS NOT SHOWN FOR CLARIFICATION.

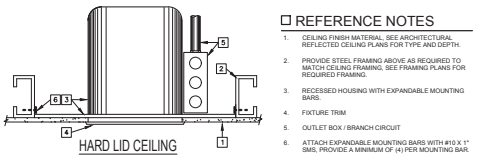
9 TYP. WALL SURFACE MOUNTED LIGHTING FIXTURE
NOT TO SCALE



REFERENCE NOTES

1. EC SHALL PROVIDE (N) DEDICATED 20A, 120V POWER CIRCUIT TO RECEPTACLE ENCLOSED INSIDE CABINET.
2. SYSTEM ELECTRONICS TO BE PROVIDED AND INSTALLED BY OTHERS.
3. (N) RACEWAY FOR HORIZONTAL CABLING TO USER STATIONS AND INCOMING FIBER OPTIC CABLE.
4. INSTALL FIBER OPTIC SPLICE TRAY. REFER TO CITY SPECIFICATION.
5. DOUBLE HINGED IDF CABINET CHATSWORTH CUBE -IT, 24"W X 30"L X 27.9"D (12419-X48) OR EQUIVALENT WITH TEMPERED GLASS FRONT PANEL, THERMOSTATICALLY CONTROLLED FAN/FILTER KIT AND SURGE-PROTECTED OUTLET KIT SHALL BE INSTALLED.
6. (N) INCOMING FIBER OPTIC CABLE, PROVIDE SERVICE LOOP INSIDE CABINET.
7. DUPLEX FIBER OPTIC PATCH CORD. LC-LC, CONNECTOR TYPE PER CITY OF SLO REQUIREMENTS.
8. CABLE PROVIDED BY OTHERS TO SUPPORT LOGICAL STACKED SWITCH. PROVIDED ONLY WHEN (2) OR MORE NETWORK SWITCHES ARE INSTALLED INTO CABINET. INSTALLED BY ELECTRICAL CONTRACTOR.

6 DATA CABINET
NOT TO SCALE



REFERENCE NOTES

1. CEILING FINISH MATERIAL. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR TYPE AND DEPTH.
2. PROVIDE STEEL FRAMING ABOVE AS REQUIRED TO MATCH CEILING FRAMING, SEE FRAMING PLANS FOR REQUIRED FRAMING.
3. RECESSED HOUSING WITH EXPANDABLE MOUNTING BARS.
4. FIXTURE TRIM
5. OUTLET BOX / BRANCH CIRCUIT
6. ATTACH EXPANDABLE MOUNTING BARS WITH #10 X 1" SMS. PROVIDE A MINIMUM OF (4) PER MOUNTING BAR.

3 RECESSED LIGHTING MOUNTING DETAIL
NOT TO SCALE

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CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

ELECTRICAL DETAILS

PROJECT TITLE:

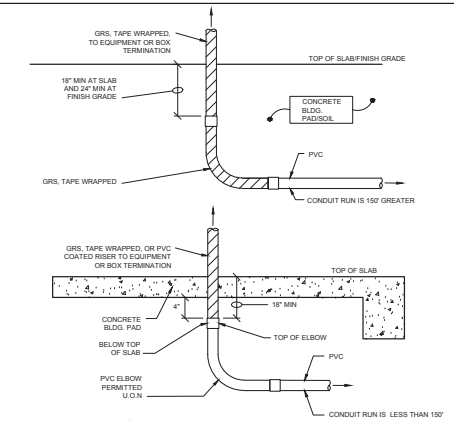
SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY: CJ
DRAWN BY: TR
CHECKED BY: CJ
APPROVED BY: CJ
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
PLAN FILE NO. / LOCATION 0256-03-CU20
SHEET NO. E-003

FEB 28 2024 - 4:58pm - C:\Users\...\Mission Plaza Enhancements\Electrical\Mission Plaza Enhancements_E-003.dwg



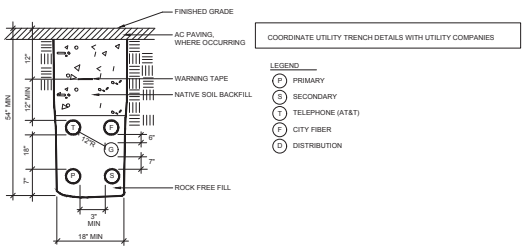
NOTES:

UNDERGROUND CONDUITS AND TRANSITION TO ABOVE GRADE/SLAB SHALL BE AS FOLLOWS:

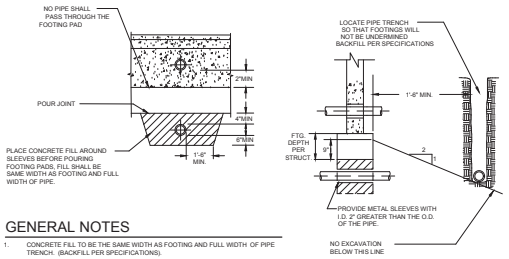
1. PVC ELBOWS ALLOWED IF TOP OF ELBOW IS MINIMUM 18" BFG OR BELOW TOP OF SLAB, OTHERWISE GRS, TAPE WRAPPED, ELBOWS ARE REQUIRED.
2. GRS ELBOWS ARE REQUIRED IF CONDUIT RUN IS 150' GREATER.
3. GRS RISERS ARE REQUIRED FROM ELBOW BELOW GRADE TO EQUIPMENT (DEVICE, OUTLET, PANEL, CABINET, ETC.) ABOVE GRADE.
4. GRS ELBOWS/RISERS TO BE TAPED WRAPPED (1/2" LAPPED) TO 3" ABOVE FINISH GRADE OR TOP OF SLAB.

17 TYP. UNDERGROUND CONDUITS & TRANSITIONS
NOT TO SCALE

18 NOT USED



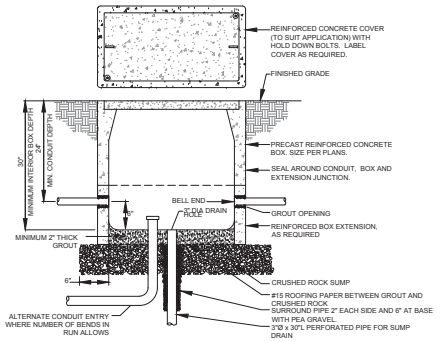
13 TYPICAL UTILITY TRENCH DETAIL
NOT TO SCALE



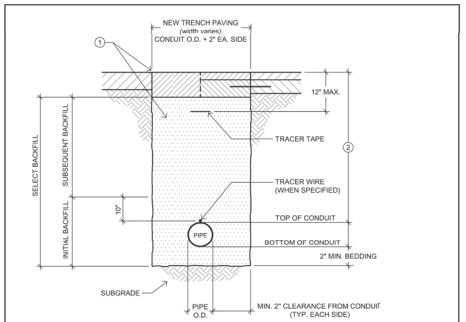
GENERAL NOTES

1. CONCRETE FILL TO BE THE SAME WIDTH AS FOOTING AND FULL WIDTH OF PIPE TRENCH. (BACKFILL PER SPECIFICATIONS).
2. CENTER PIPE IN PVC OR GALVANIZED METAL SLEEVE THAT HAS A MIN. I.D. 2" GREATER THAN THE PIPES O.D.
3. WATERPROOF OPENING AROUND PIPE PER GENERAL SPECIFICATIONS.
4. COORDINATE INSTALLATION WITH STRUCTURAL ENGINEER.

14 TYPICAL CONDUIT NEAR/THRU FOOTING DETAIL
NOT TO SCALE



15 TYPICAL CONCRETE PULL BOX DETAIL
NOT TO SCALE



INSTALLATION NOTES:

1. See Engineering Standards 6020 and 6030, and Section 26-1 & 77-1, of the Standard Specifications for requirements regarding trench backfill and restoration of surface improvements.
2. Depth of Conduit shall conform to the following:
   - Min. 18" for Traffic Signal wire
   - Min. 24" for Electrical service and Fiber-optic wire
   - Min. 30" for all other wire types

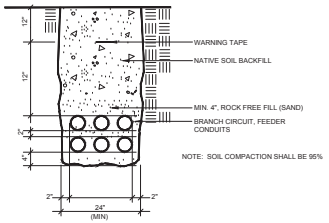
GENERAL NOTE:

A. See Standard Specification 86-2.05 for information regarding conduit materials, use and installation.

REVISIONS	BY	APP	DATE
"Tracer wire when specified"	JDL	DA	10-15
Detail 3	KH	MH	1-18
Revise drawing & Note 1; delete 3	SR	BL	1-14
STANDARD CURRENT AS OF:	AUGUST 2020		

TRENCH DETAIL #3
CONDUIT TRENCH FOR TRAFFIC SIGNALS, STREET LIGHTS, AND CITY COMMUNICATIONS 6035

11 CITY OF SLO STANDARD 6035
NOT TO SCALE



12 TYPICAL BRANCH CIRCUIT TRENCH DETAIL
NOT TO SCALE

thoma ENGINEERING
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CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

ELECTRICAL DETAILS

PROJECT TITLE:

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY: CJ
DRAWN BY: TR
CHECKED BY: CJ
APPROVED BY: CJ
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
PLAN FILE NO. / LOCATION 0256-03-CU20
SHEET NO. E-004

BUS RATING: 200A 120/240V, 1PH, 3W MAIN: 200A MAIN BREAKER SPACES: 42 FULL SIZE BOLT-ON CB SPACES AIC RATING: 10 KAIC PANEL	(N) LOAD CENTER **TEMP** CONNECTED VA	SURFACE MOUNT, NEMA 3R LOCATION: TEMP BACKBOARD WITH EQUIPMENT GND BUS

CKT %VD	DIST (FT)	NOTES	LOAD TYPE	CKT	DESCRIPTION	TRIP	POLES	COND SIZE	PHASE A	PHASE B	COND SIZE	POLES	TRIP	DESCRIPTION	CKT	LOAD TYPE	NOTES	DIST (FT)	CKT %VD
				1	SPACE									SPACE	2				
				3	SPACE					500	10	1	30	SPRINKLER TIMER (IRRGATION SYSTEM) [B-4]	4	N	2		
				5	SPACE									SPACE	6				
				7	SPACE									SPACE	8				
				9	SPACE									SPACE	10				
				11	SPACE									SPACE	12				
				13	SPACE									SPACE	14				
			R	15	ADOBE BLDG [A-14]	20	1	8		500				SPACE	16				
			R	17	ADOBE BLDG [A-16]	20	1	8	500 / 500		8	1	20	MISSION PLAZA STEP LIGHTS [A-7]	18	L	1,2		
				19	SPACE					500	8	1	20	MISSION PLAZA POLE [A-9]	20	L	1,2		
				21	SPACE				500		8	1	20	MISSION PLAZA NW OUTLETS [A-12]	22	R	1,2		
				23	SPACE					500	8	1	20	MISSION PLAZA NE OUTLETS [A-11]	24	R	1,2		
				25	SPACE				500		8	1	20	AMP RECEPTACLE [A-8]	26	R	1,2		
		1,2	L	27	CREEK LIGHTS [B-1]	20	1	8		500 / 500	8	1	20	AMP RECEPTACLE [A-10]	28	R	1,2		
		1,2	L	29	CREEK LIGHTS [B-3]	20	1	8	500 / 500		8	1	20	AMPH STEPS [A-14]	30	L	1,2		
		1,2	L	31	SOUTH WEST PATH LIGHTS [A-2]	20	1	8		500 / 500	8	1	20	MISISON POLE	32	L	1		
		1,2	L	33	SOUTH WEST PATH AND BRIDGE LIGHTING [A-4]	20	1	8	500					SPACE	34				
		1,2	L	35	BROAD STREET LIGHTS AND POLE ACROSS CREEK (SOUTH SIDE) [B-4]	20	1	8		500 / 600	8	2	20	POOL PUMP (MISSION) [A-18]	36	N	2		
		1,2	L	37	BROAD STREET LIGHTS AND POLE ACROSS CREEK (SOUTH SIDE) [B-6]	20	1	8	500 / 500		8		2	" " " [A-20]	38	N	2		
				39	SPACE					1335 / 2500	6	2	50	AMP OUTLET UPPER [B-21]	40	R			
				41	SPACE				1478 / 2500		6		50	" " " [B-23]	42	R			

	PHASE A	PHASE B
CON:	8478	8835
25%:	625	625
SUB:	0	0
TOT:	9103	9460
AMPS	76	79

NOTE:
1. ROUTE THROUGH RELAY PANEL
2. EXISTING LOADS [XX] DENOTES OLD CIRCUIT NUMBERS AS SHOWN ON AS-BUILT PLANS. CONTRACTOR TO FIELD INVESTIGATE CIRCUITS AND RE-LABEL/UPDATE FIXTURE SCHEDULES. SEE DEMOLITION SITE PLAN FOR EXISTING CIRCUIT NUMBERS

LOAD (VA)	LOAD TYPE LEGEND	
8000	R	RECEPTACLE
5000	L	LIGHTING (125% OF CONNECTED LOAD CEC 215.2)
0	M	MECHANICAL
0	K	KITCHEN APPLIANCE
4000	N	NON-CONTINUOUS MISC.
0	C	CONTINUOUS MISC. (125% OF CONNECTED LOAD CEC 215.2)

25 TEMP POWER PANEL SCHEDULE

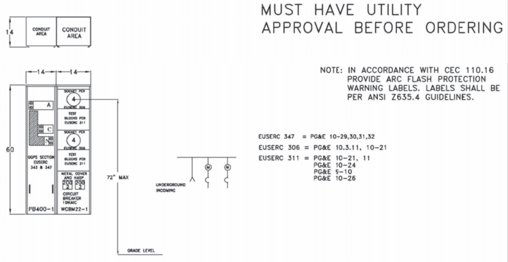
MYERS/RYCO POWER PRODUCTS, INC.
2950 E. PHILADELPHIA ST. ONTARIO CA 91761 PH 909-923-1800 FAX 909-923-1806

*U.L LISTED DEADFRONT SWITCHBOARD E59802.
*NEMA 3R RATED UNLESS NOTED OTHERWISE.
*PLATED ALUMIUM BUS, *
*DESERT TAN POWDER COATED FINISH.
BRACING @ 100kAIC SERVICE ENTRANCE RATED

JOB ADDRESS: MISSION RESTROOM
CONTRACTOR: *
DISTRIBUTOR: *
P.O NUMBER: *
MYERS S.O#: *
VOLTAGE: 120/240 1PH 3W
UTILITY: PG&E 10K AIC

WALL HUNG UNIT
NONSTANDARD CONSTRUCTION: Y/N
DRAWN BY: HJH DATE: 04-12-2023
DWG#: *
NOTES: SURFACE MOUNTED.

MUST HAVE UTILITY APPROVAL BEFORE ORDERING



NOTE: IN ACCORDANCE WITH CEC 110.16 PROVIDE ARC FLASH PROTECTION WARNING LABELS. LABELS SHALL BE PER ANSI Z635.4 GUIDELINES.

EUSERC 347 = PG&E 10-29,30,31,32
EUSERC 306 = PG&E 10.3.11, 10-21
EUSERC 311 = PG&E 10-21, 11
PG&E 10-24
PG&E 9-10
PG&E 10-26

HJ COMPANY 559-292-1002

WALL-HUNG SECTION INSTALLATIONS

The Myers Power Products/Ryco wall-hung product line of switchgear is NEMA 3R rated and may be installed in both outdoor and indoor locations. It is designed for surface mounting, with three mounting holes located on the back wall of each section's enclosure. Each section is additionally provided with (3) 12-gauge steel hanger brackets, and (3) 3/8-16 carriage bolts, nuts, flat washers, and split-lock washers. The sections may be mounting with the provided brackets, or directly mounted to a structure via Unistrut channel. Conduit openings are not provided; pull the appropriate sized hole for your conduit entrance on the end wall of the section's enclosure.

According to EUSERC Section 300, exposed meters must be located between 48" and 75" above grade. The wall-hung sections have exposed meters. We recommend the meter center-line to be located no higher than 72" above grade. A wall-hung section, therefore, should be located 17" above grade.

Wall-hung sections may be mounted to buildings or walls. Do not mount directly on the ground. The installation should be in compliance with local building codes and the hanging method determined by the overall weight of the installation.

26 METER BOARD, "M/M" CUTSHEET
NOT TO SCALE

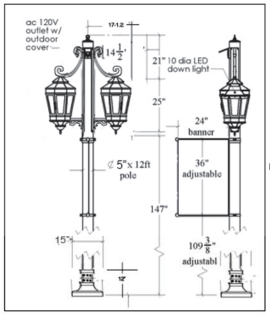
Date: 5/10/2023

S | H STUDIOS
716 N. Milpas St.
Santa Barbara Ca.
93103
805-962-5119

Submittal # 47717

Site: outdoor

CUSTOM Extra Large pole light 0 Light - MIssion Plaza Pole lights 46.5" by 192" Pole Mount



SKU	M-ZOL-134300.46.5
Width (in)	46.5
Height (in)	192
Projection (in)	28.25
Mounting	Pole Mount
Approx. Weight (lbs)	175
Overall Height (in)	192
Max. Watt. Per Socket	33 LED
Voltage	120-24
Canopy Size (in)	
POA to Top (in)	
POA to Bottom (in)	
Finish	Black Rust
Glass	Light Seedy
Ext. Warranty	Yes
Weather Location	Wet

DARK SKY COMPLIANT
LED: input V= 100-277, 33w color 4000K tbd
POLE: 5 dia 1/8 wall straight smooth x 12ft tall, OHA 192"

Production will not commence until we receive an approved submittal

All corrections, additions and changes must be made on this submittal to be considered valid, no verbal changes will be accepted.
Any delays in receiving information and approvals will set back delivery times
Custom products are not returnable

Chandeliers over 50 lbs. require blocking at the j-box and heavy surface mounted canopies.

Approved as is ____________ **Date** ________
Approved with changes ____________ **Date** ________

22 FIXTURE TYPE SP SUBMITTAL

LIGHTING CONTROL PANEL SCHEDULE
"LCP" ACUITY #ARP INTEN32NLT 24SPR MVOLT HLK SM DTC
LOCATED: PLUMBING CHASE
CONTROL POWER CIRCUIT: MR-8

32 SWITCHING RELAY NEMA 1 ENCLOSURE
FLUSH _
SURFACE X

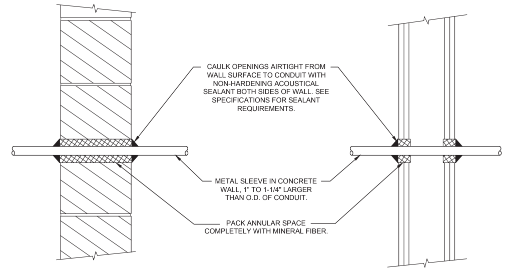
RELAY NO.	CIRCUIT NO.	LOAD DESCRIPTION	CONTROL DESCRIPTION	NOTES (4,5)
R1	MR-3	RESTROOM EXTERIOR	DUSK ON / TIMECLOCK OFF	1,2
R2	MR-12	MISSION IN-GRADE	DUSK ON / TIMECLOCK OFF	2
R3	MR-14	MISSION STRING LIGHT RECEPTACLES	DUSK ON / TIMECLOCK OFF	2
R4	MR-13A	MISSION PEDESTAL OUTLETS	DUSK ON / TIMECLOCK OFF	2
R5	MR-18	MISSION PLAZA STEP LIGHTS	DUSK ON / TIMECLOCK OFF	2
R6	MR-20	MISSION PLAZA POLE LIGHT	DUSK ON / TIMECLOCK OFF	2
R7	MR-22	MISSION PLAZA NW OUTLET PEDESTAL	DUSK ON / TIMECLOCK OFF	2
R8	MR-24	MISSION PLAZA NE OUTLET PEDESTAL	DUSK ON / TIMECLOCK OFF	2
R9	MR-26	AMPHITHEATRE RECEPTACLE	DUSK ON / TIMECLOCK OFF	2
R10	MR-28	AMPHITHEATRE RECEPTACLE	DUSK ON / TIMECLOCK OFF	2
R11	MR-30	AMPHITHEATRE STEP LIGHTS	DUSK ON / TIMECLOCK OFF	2
R12	MR-32	MISSION POLE LIGHT	DUSK ON / TIMECLOCK OFF	2
R13	MR-34	MISSION POLE RECEPTACLE	DUSK ON / TIMECLOCK OFF	2
R14	MR-27	CREEK LIGHTS	DUSK ON / TIMECLOCK OFF	2
R15	MR-29	CREEK LIGHTS	DUSK ON / TIMECLOCK OFF	2
R16	MR-31	SOUTHWEST PATH LIGHTS	DUSK ON / TIMECLOCK OFF	2
R17	MR-33	SOUTH WEST PATH LIGHTS	DUSK ON / TIMECLOCK OFF	2
R18	MR-35	BROAD STREET AND POLE LIGHTS SOUTH CREEK	DUSK ON / TIMECLOCK OFF	2
R19	MR-37	BROAD STREET AND POLE LIGHTS SOUTH CREEK	DUSK ON / TIMECLOCK OFF	2
R20	MR-13B	MISSION PEDESTAL OUTLETS	DUSK ON / TIMECLOCK OFF	2
R21		SPARE	DUSK ON / TIMECLOCK OFF	2
R22		SPARE	DUSK ON / TIMECLOCK OFF	2
R23		SPARE	DUSK ON / TIMECLOCK OFF	2
R24		SPARE	DUSK ON / TIMECLOCK OFF	2

R25-R32 (SPACES)

NOTES:
1. PROGRAM RELAY FOR DUSK 'ON' WITH PROGRAMMED 'OFF' PER OWNER TIME SCHEDULE.
2. EXTEND 0-10V WIRES TO FIXTURE(S) FOR DIMMING CONTROL.

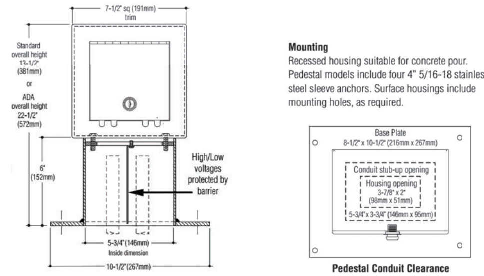
* INCLUDE EXTERIOR PHOTOCELL INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATION TO CONTROL DUSK TO DAWN, AND DUSK TO TIME CLOCK OFF OPERATIONS.
* PROVIDE LOW VOLTAGE OVERRIDE SWITCH ADJACENT TO PANEL WITH WEATHER PROOF LOCKABLE COVER. PROGRAM SWITCH FOR 2-HOUR OVERRIDE OF ALL EXTERIOR LIGHTING RELAYS. LABEL SWITCH "OVERRIDE".

24 LIGHTING CONTROL RELAY SCHEDULE



NOTE: NO MULTIPLE CONDUIT PENETRATIONS ALLOWED. PACK AND CAULK EVERY CONDUIT INDIVIDUALLY.

19 SEALED CONDUIT PENETRATION
NOT TO SCALE



Mounting
Recessed housing suitable for concrete pour. Pedestal models include four 4" 5/16-18 stainless steel sleeve anchors. Surface housings include mounting holes, as required.

A ☒ OUTLET A: PEDESTAL TL310-WCS-PED WITH (2)20A 120V WEATHER RESISTANT/TAMPER RESISTANT RECEPTACLE. #GFCI/WR/TR. COLOR FINISH: RAL6009 OR PANTONE 5535

B ☒ OUTLET B: PEDESTAL TL310-WCS-PED. PROVIDE WITH (1)50A 120/ 240V 4-WIRE CALIFORNIA STYLE RECEPTACLE. WILL REQUIRE 14" DEEP SPECIALIZED HOUSING (NEMA 14-50). #9-50A. COLOR FINISH: RAL6009 OR PANTONE 5535

C ☒ OUTLET C: RECESSED/DEEP HOUSING TO FLUSH MOUNT AT CONCRETE #TL310-WCS. PROVIDE (2)20AMP 125/250V NEMA 14-20R. COLOR FINISH SELECTED BY LANDSCAPE ARCHITECT.

20 LOCKABLE RECEPTACLE PLUG BOX
NOT TO SCALE

21 NOT USED

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CITY OF SAN LUIS OBISPO

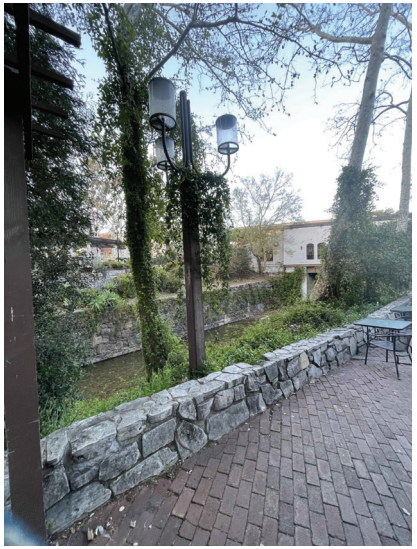
PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: ELECTRICAL DETAILS

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA NO. 10757 ELECTRICAL STATE OF CALIFORNIA
EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY: CJ
DRAWN BY: TR
CHECKED BY: CJ
APPROVED BY: CJ
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
PLAN FILE NO. / LOCATION 0256-03-CU20
SHEET NO. E-005

Feb 16, 2024 - 1:58pm - CReyes - K:\ENG\2020\20-8170\20-8170_E-003-E-005_ELECTRICAL DETAILS.dwg

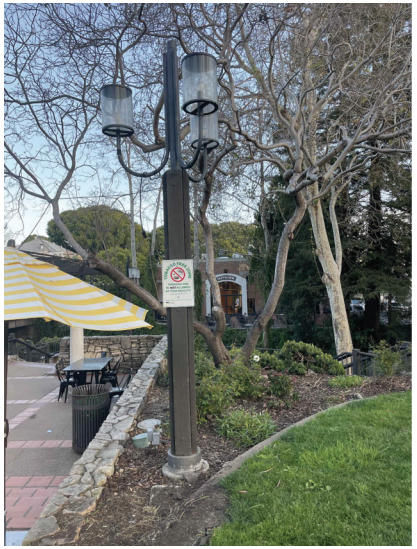


NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE NEW PULL BOX, GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE NEW PULL BOX.

7 PLAZA 7
NOT TO SCALE

NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE NEW PULL BOX, GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE NEW PULL BOX.

5 PLAZA 5
NOT TO SCALE



NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE EXISTING ROUND PULL BOX.

3 PLAZA 3
NOT TO SCALE

NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE EXISTING ROUND PULL BOX.

1 PLAZA 1
NOT TO SCALE

NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE NEW PULL BOX, GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE NEW PULL BOX.

8 PLAZA 8
NOT TO SCALE

NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE EXISTING ROUND PULL BOX.

6 PLAZA 6
NOT TO SCALE

NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE EXISTING ROUND PULL BOX.

4 PLAZA 4
NOT TO SCALE

NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE EXISTING ROUND PULL BOX.

2 PLAZA 2
NOT TO SCALE

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CITY OF SAN LUIS OBISPO

PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: EXISTING SITE POLE IMAGES

REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. THOMA
ELECTRICAL
STATE OF CALIFORNIA

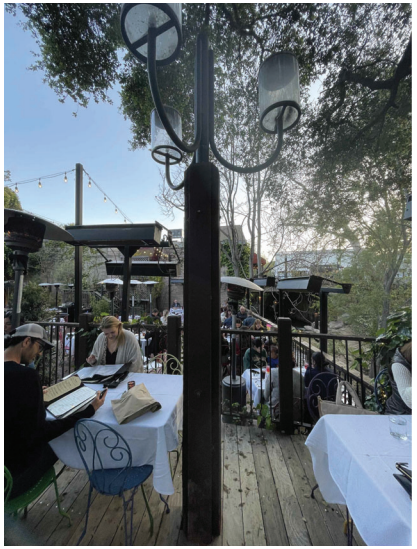
EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	CJ
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	E-006

7 PLAZA 15
NOT TO SCALE

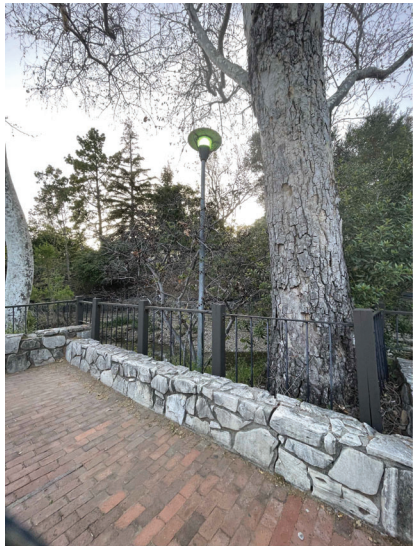
NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE NEW PULL BOX, GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE NEW PULL BOX.

5 PLAZA 13
NOT TO SCALE



NOTE: REMOVE EXISTING PATIO AROUND WOOD POST, DISCONNECT AND REMOVE EXISTING POST LIGHT AT EXISTING NOVO PATIO. NOVO RESTAURANT WILL REPLACE EXISTING WOOD PATIO TO REPLACE OPENING.

3 PLAZA 11
NOT TO SCALE



NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE EXISTING PULL BOX.

1 PLAZA 9
NOT TO SCALE

8 PLAZA 16
NOT TO SCALE

6 PLAZA 14
NOT TO SCALE

NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE NEW PULL BOX, GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE NEW PULL BOX.

4 PLAZA 12
NOT TO SCALE

NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE NEW PULL BOX, GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE NEW PULL BOX.

2 PLAZA 10
NOT TO SCALE

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CITY OF SAN LUIS OBISPO

MISSION PLAZA ENHANCEMENTS

EXISTING SITE POLE IMAGES

PROJECT TITLE:

SHEET TITLE:

REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. THOMA
ELECTRICAL
STATE OF CALIFORNIA

EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY: CJ
DRAWN BY: TR
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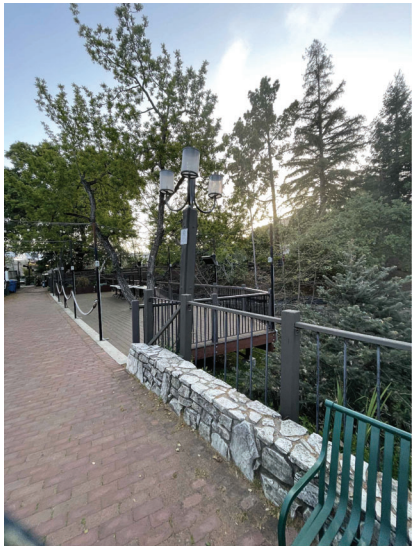
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
PLAN FILE NO. / LOCATION 0256-03-CU20
SHEET NO. E-007

7		5		3	PLAZA 19 NOT TO SCALE	1	PLAZA 17 NOT TO SCALE
8		6		4		2	PLAZA 18 NOT TO SCALE



NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE NEW PULL BOX, GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE NEW PULL BOX.

NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE NEW PULL BOX, GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE NEW PULL BOX.

NOTE: REPLACE EXISTING POST LIGHT WITH NEW FIXTURE TYPE SP, PROVIDE GROUND ROD, AND 2-AMP FUSE IN ADVANCE OF LIGHT INSIDE EXISTING PULL BOX.

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SHEET TITLE: EXISTING SITE POLE IMAGES

REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. THOMA
ELECTRICAL
STATE OF CALIFORNIA

EXPIRES: 06/30/26
THOMA #20-8170

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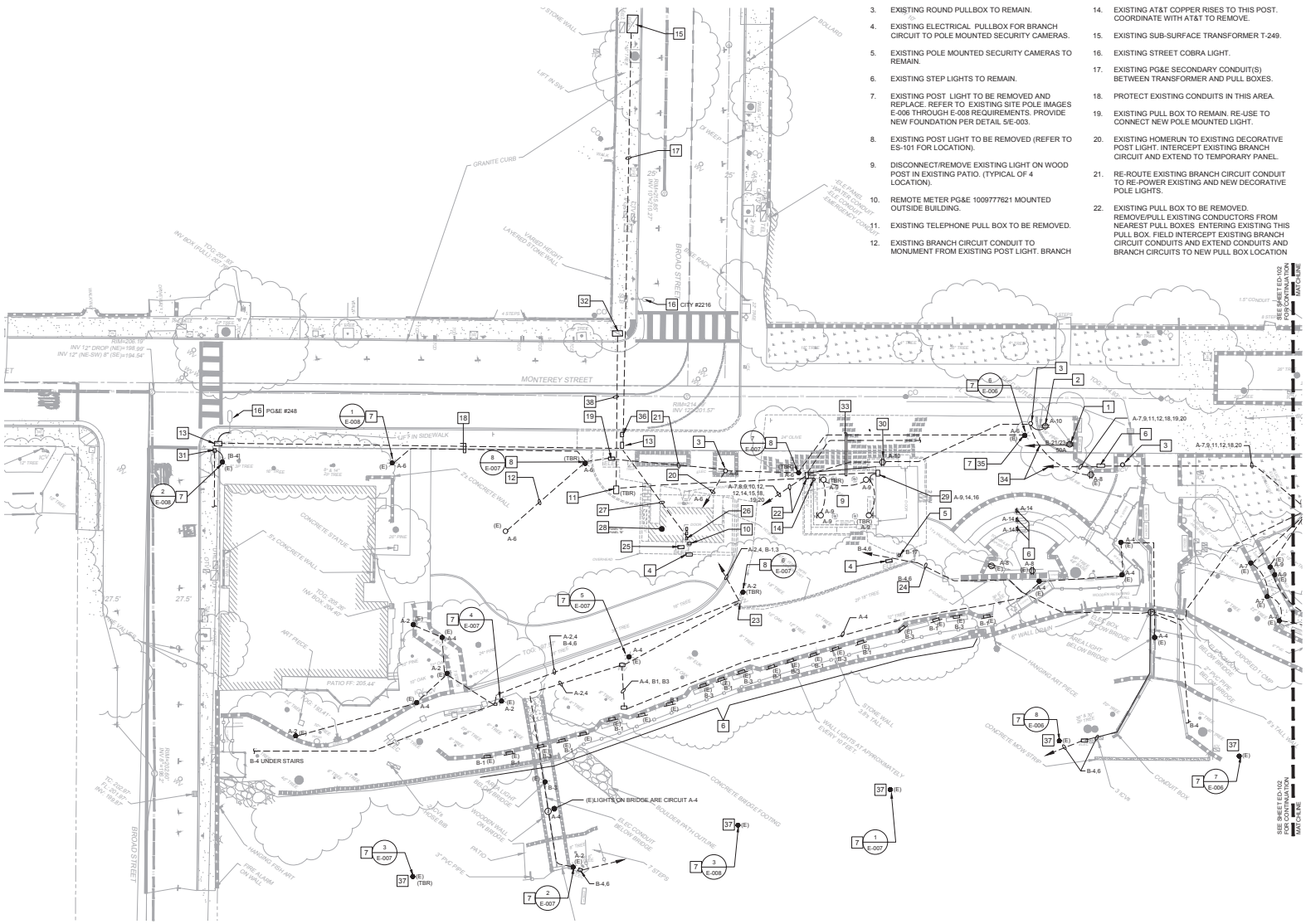
SHEET NO.	E-008



ELECTRICAL DEMOLITION SITE PLAN

SCALE: 1"=20'

NORTH

□ REFERENCE NOTES

SHEET ED-101

1. EXISTING 50A 120/125V SINGLE PHASE 4W OUTLETS TO REMAIN.
2. EXISTING POST WITH OUTLET TO REMAIN.
3. EXISTING ROUND PULLBOX TO REMAIN.
4. EXISTING ELECTRICAL PULLBOX FOR BRANCH CIRCUIT TO POLE MOUNTED SECURITY CAMERAS.
5. EXISTING POLE MOUNTED SECURITY CAMERAS TO REMAIN.
6. EXISTING STEP LIGHTS TO REMAIN.
7. EXISTING POST LIGHT TO BE REMOVED AND REPLACE. REFER TO EXISTING SITE POLE IMAGES E-006 THROUGH E-008 REQUIREMENTS. PROVIDE NEW FOUNDATION PER DETAIL 5/E-003.
8. EXISTING POST LIGHT TO BE REMOVED (REFER TO ES-101 FOR LOCATION).
9. DISCONNECT/REMOVE EXISTING LIGHT ON WOOD POST IN EXISTING PATIO. (TYPICAL OF 4 LOCATION).
10. REMOTE METER PG&E 1009777621 MOUNTED OUTSIDE BUILDING.
11. EXISTING TELEPHONE PULL BOX TO BE REMOVED.
12. EXISTING BRANCH CIRCUIT CONDUIT TO MONUMENT FROM EXISTING POST LIGHT. BRANCH CIRCUIT WILL NEED TO BE RECONNECTED DUE TO REMOVAL OF POLE LIGHT.
13. EXISTING SECONDARY PG&E PULL BOX TO BE REPLACE WITH NEW. PG&E TO VERIFY SIZE.
14. EXISTING AT&T COPPER RISES TO THIS POST. COORDINATE WITH AT&T TO REMOVE.
15. EXISTING SUB-SURFACE TRANSFORMER T-249.
16. EXISTING STREET COBRA LIGHT.
17. EXISTING PG&E SECONDARY CONDUIT(S) BETWEEN TRANSFORMER AND PULL BOXES.
18. PROTECT EXISTING CONDUITS IN THIS AREA.
19. EXISTING PULL BOX TO REMAIN. RE-USE TO CONNECT NEW POLE MOUNTED LIGHT.
20. EXISTING HOMERUN TO EXISTING DECORATIVE POST LIGHT. INTERCEPT EXISTING BRANCH CIRCUIT AND EXTEND TO TEMPORARY PANEL.
21. RE-ROUTE EXISTING BRANCH CIRCUIT CONDUIT TO RE-POWER EXISTING AND NEW DECORATIVE POLE LIGHTS.
22. EXISTING PULL BOX TO BE REMOVED. REMOVE/PULL EXISTING CONDUCTORS FROM NEAREST PULL BOXES ENTERING EXISTING THIS PULL BOX. FIELD INTERCEPT EXISTING BRANCH CIRCUIT CONDUITS AND EXTEND CONDUITS AND BRANCH CIRCUITS TO NEW PULL BOX LOCATION SHOWN ON SHEET ES-101. PRIOR TO REMOVING, LABEL EACH WIRING WITH BRANCH CIRCUIT NUMBERS FROM EXISTING PANEL. EXTEND NEW BRANCH CIRCUIT TO TEMPORARY PANELBOARD.
23. EXISTING ELECTRICAL PULL BOX LABEL AS WATER VALVE TO BE REPLACE WITH NEW CONCRETE PULL BOX. INTERCEPT EXISTING BRANCH CIRCUITS AND EXTEND TO TEMPORARY PANEL.
24. EXISTING BRANCH CIRCUITS. VERIFY EXACT ROUTING, INTERCEPT EXISTING HOMERUN TO RESTROOM BUILDING, AND EXTEND TO TEMPORARY PANEL.
25. REMOVE AND DISCONNECT EXISTING ELECTRICAL PULL BOX.
26. DISCONNECT AND REMOVE EXISTING 200AMP PANELBOARD WITH (2)100AMP FEED BREAKER TO FEED EXISTING PANEL "A" AND PANEL "B".
27. COORDINATE WITH PG&E TO REMOVE EXISTING SECONDARY SERVICE CONDUITS.
28. DISCONNECT / REMOVE ALL LIGHTS, PLUGS, AND ANY POWER IN BATHROOM. COORDINATE WITH OWNER IF ANY EQUIPMENT IN THE EQUIPMENT ROOM WILL NEED TO BE SALVAGED. COORDINATE WITH LANDSCAPE ARCHITECT FOR LOCATION OF EXISTING IRRIGATION SYSTEM. MUST BE CONNECTED TO TEMPORARY POWER DURING CONSTRUCTION.
29. EXISTING PANEL AND CIRCUITS IN THE ADOBE ROOM TO BE REMAIN. REFER TO NOTE 22 FOR EXISTING HOMERUN BRANCH CIRCUITS.
30. EXISTING OUTLET TO BE REMOVED.
31. EXISTING SITE LIGHTING PULL BOX TO REMAIN.
32. EXISTING AT&T PULL BOX TO REMAIN.
33. FIELD LOCATED EXACT LOCATION OF EXISTING BRANCH CIRCUIT UNDERGROUND IN THIS AREA. INTERCEPT EXISTING BRANCH CIRCUITS AND EXTEND TO NEW PULL BOX SHOWN ON ES-101.
34. FIELD LOCATE ROUTING OF HOME RUN TO EXISTING PULL BOX (NOTE 22)
35. THIS LIGHT WILL NOT BE IN OPERATION WHEN RESTROOM WILL BEING BUILT.
36. EXISTING ELECTRICAL PULL BOX TO BE RELOCATED PER ELECTRICAL PLAN. FIELD VERIFY WHAT THE EXISTING BRANCH CIRCUIT IS FEEDING AND INFORM ENGINEER.
37. VERIFY BRANCH CIRCUIT TO THIS EXISTING POLE. MARK PANEL AND CIRCUIT NUMBER PRIOR TO DEMOLITION OF RESTROOM BUILDING.
38. EXISTING AT&T CONDUIT WITH TELEPHONE DROP TO BE ABANDONED.

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CITY OF SAN LUIS OBISPO

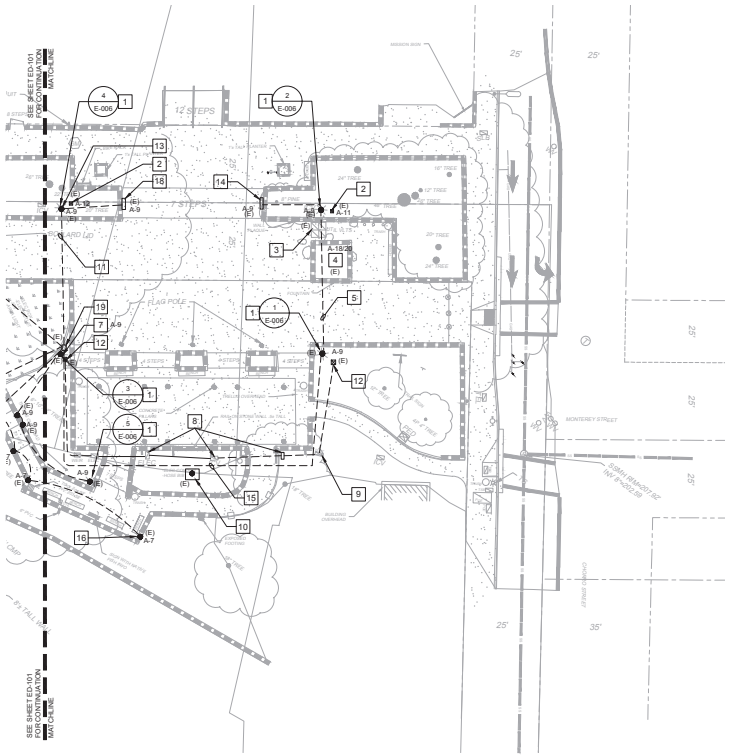
PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: ELECTRICAL DEMOLITION SITE PLAN

REGISTERED PROFESSIONAL ENGINEER — WILLIAM A. THOMA — ELECTRICAL — STATE OF CALIFORNIA

EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	CJ
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	ED-101



ELECTRICAL DEMOLITION SITE PLAN

SCALE: 1"=20'

NORTH

REFERENCE NOTES

SHEET ED-102

1. EXISTING POST LIGHT TO BE REPLACE WITH NEW. REFER TO IMAGE FOR REQUIREMENTS.
2. EXISTING RECEPTACLE PEDESTAL TO REMAIN. VERIFY EXACT LOCATION.
3. EXISTING PUMP IS THE SAME CIRCUIT AS THE RECEPTACLE CKT 11.
4. EXISTING FOUNTAIN TO REMAIN.
5. (E)1"BRANCH CIRCUIT CONDUIT PER AS-BUILT.
6. EXISTING OUTLET PEDESTAL TO REMAIN WITH DEDICATED CIRCUIT FROM PANEL "D". VERIFY EXACT LOCATION.
7. ORIGINALLY CIRCUITED TO CIRCUIT A-7. RE-CIRCUIT TO EXISTING LIGHTING CIRCUIT A-9.
8. EXISTING PULL BOXES FROM PANEL "D".
9. (E)METER/PANEL "D".
10. (E)SECURITY CAMERA MOUNTED ON POLE IN THIS LANDSCAPE AREA.
11. EXISTING 1-1/4"C BRANCH CIRCUIT CONDUIT PER AS-BUILT.
12. (E) OUTLET PEDESTAL WITH DEDICATED CIRCUIT FROM PANEL "D".
13. ORIGINALLY CIRCUITED TO CIRCUIT A-12. RE-CIRCUIT TO LIGHTING CIRCUIT A-9.
14. EXISTING STEP LIGHT TO REMAIN. ORIGINALLY CIRCUITED TO A-11. RE-CIRCUIT TO EXISTING LIGHTING CIRCUIT A-9.
15. (E)1-1/2"BRANCH CIRCUIT CONDUIT PER AS-BUILT.
16. EXISTING LIGHT AT STAIRS TO REMAIN. (TYPICAL)
17. EXISTING RECEPTACLE PEDESTAL. VERIFY EXACT LOCATION.
18. EXISTING STEP LIGHT TO REMAIN.
19. EXISTING PULL BOX TO REMAIN.

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REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA ELECTRICAL STATE OF CALIFORNIA

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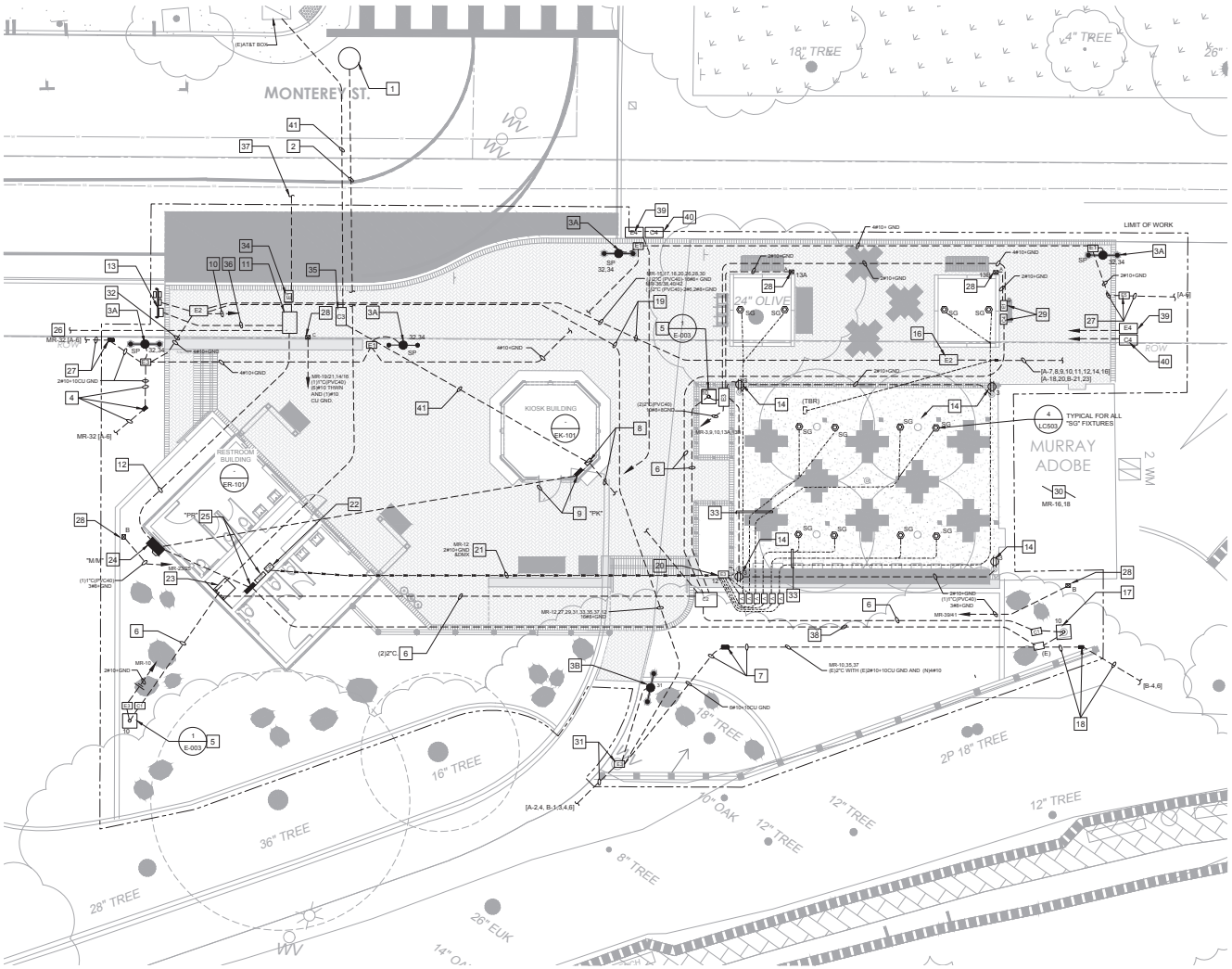

POWER CUT-OVER SEQUENCE OF OPERATIONS:
ELECTRICAL CONTACT TO CONTACT PG&E INSPECTOR TO ARRANGE A PRE-CONSTRUCTION MEETING (805-546-5247). INSTALL THE TEMP PANEL AND BACKBOARD, INTERCEPT ALL EXISTING BRANCH CIRCUITS, EXTEND TO TEMPORARY PANELBOARD, AND RUN FEEDER CONDUIT TO NEW SECONDARY PULL BOX. COORDINATE WITH PG&E FOR CUT-OVER TO DISCONNECT THE EXISTING SERVICE AT EXISTING RESTROOM AND PG&E TO SPLICE THE NEW CABLES TO POWER THE TEMP PANEL. PROVIDE METHOD OF PROCEDURE (MOP) FOR EXECUTION OF MEANS AND METHODS IMPLEMENTATION FOR CITY/ARCHITECT/ENGINEER TO REVIEW AND APPROVAL PRIOR TO START OF WORK.

NOTE: FIELD VERIFY EXACT LOCATION OF EACH PULL BOXES SHOWN ON PLAN WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN

FIBER OPTIC CONDUIT BEND MUST HAVE A MINIMUM RADIUS OF 36"

PULL BOX LEGEND

E1	11"X17"X24" PAVER PULL BOX FLUSH IN GRADE. LABEL LID "ELECTRICAL" (WUNDERCOVERS OR EQUAL)
E2	17"X30"X24" PAVER PULL BOX FLUSH IN GRADE. LABEL LID "ELECTRICAL" (WUNDERCOVERS OR EQUAL)
E3	17"X30"X24" CONCRETE PULL BOX FLUSH IN GRADE. LABEL LID "ELECTRICAL"
E4	17"X30"X24" PAVER PULL BOX FLUSH IN GRADE. LABEL LID "ELECTRICAL"
E5	11"X17"X24" CONCRETE PULL BOX FLUSH IN GRADE. LABEL LID "ELECTRICAL"
C1	11"X17"X24" CONCRETE PULL BOX FLUSH IN GRADE. LABEL LID "SIGNAL"
C2	24"X36"X24" CONCRETE PULL BOX FLUSH IN GRADE. LABEL LID "SIGNAL"
C3	17"X30"X24" PAVER PULL BOX FLUSH IN GRADE. LABEL LID "AT&T" (WUNDERCOVERS OR EQUAL)
C4	17"X30"X24" CONCRETE PULL BOX FLUSH IN GRADE. LABEL LID "SIGNAL"
V	16.5"X9.5" X12" IP68 WET-LISTED DIRECT BURIAL VAULT HOUSING FOR REMOTE POWER SUPPLY. (Q-TRAN #Q-VAULT-5 [PLATE COVER OPTION] [RING OPTION]) OR APPROVED EQUAL OPTIONS SELECTED BY LANDSCAPE ARCHITECT.

REFERENCE NOTES

1. EXISTING CITY COMMUNICATION MANHOLE PER CITY STANDARD 9030. FIELD VERIFY EXACT LOCATION.
2. STUB 1-2" FIBER CONDUIT WITH NEW FIBER PER SPECIFICATION AND PULL STRING INTO MANHOLE. INSTALL PER CITY STANDARD 6035.
3. NEW POLE LIGHT WITH NEW 11"X17" PULL BOX. (SEE DETAIL 22/E-005)
   A. PROVIDE SEPARATE CIRCUIT FOR POLE MOUNTED RECEPTACLE.
   B. SHARE CIRCUIT WITH POLE MOUNTED RECEPTACLE.
4. RECONNECT EXISTING POWER AT ART SCULPTURE. REMOVE CONDUCTORS FROM EXISTING POWER AT ART SCULPTURE, INTERCEPT EXISTING BRANCH CIRCUIT CONDUIT AND EXTEND TO NEW PULL BOX AT NEW STREET LIGHT WITH NEW BRANCH CIRCUIT WIRING.
5. NEW 20' GREEN POLE FOR CAMERA BY CITY POLICE. 24" X 24" X 48" DEEP CONCRETE BASE.
6. PROVIDE NEW 2" CONDUIT (UON) TO CAMERA POLE FOR FIBER CABLE PER CITY STANDARD 6035. PROVIDE NEW FIBER CABLE PER SPECIFICATION.
7. INTERCEPT EXISTING 2" BRANCH CIRCUIT CONDUIT AND EXTEND TO NEW PULL BOX ADJACENT TO TEMPORARY POWER.
8. FLUSH MOUNTED TERMINAL CABINET AND 2" FIBER CONDUITS FOR KIOSK. INSTALL CONDUIT PER CITY STANDARD 6035.
9. PANEL AND FEEDER TO KIOSK FROM PANEL "FR".
10. (3)2"C HOME RUN BRANCH CIRCUIT CONDUIT TO PANEL "FR" INTERCEPT AND EXTEND ALL EXISTING BRANCH CIRCUIT WHEN NEW METER SERVICE AND BREAKERS ARE INSTALL IN THE NEW RESTROOM.
11. EXISTING PG&E BOX TO BE REPLACE WITH NEW #3 SECONDARY PULL BOX PER PG&E REQUIREMENTS. PROVIDE PAVER PULL BOX PER WUNDERCOVERS OR APPROVED EQUAL. (ESTIMATE 24"X36" COVER).
12. NEW PG&E 5" SECONDARY SERVICE CONDUIT. TRENCH PER PG&E REQUIREMENTS.
13. PROVIDE 4FT LONG STRUCTURE FOR TEMPORARY 200AMP METER SERVICE (PER PG&E GREEN BOOK 0635374). PROVIDE 200AMP METER/MAIN WITH BYPASS SECTION AND NEW 200AMP, 120/240V SINGLE PHASE, 42 AMP SPACE, NEMA 3R. REFER TO TEMP PANEL SCHEDULE ON SHEET E-006 DETAIL 2/5. RECONNECT ALL SITE BRANCH CIRCUIT AND IRRIGATION CONTROLLER (LOCATED BEHIND BACKBOARD PER IRRIGATION PLANS). PROVIDE LIGHTING RELAY CABINET WITH PHOTOCELL WITH 2-HOUR BY-PASS SWITCH TO TURN ON EXTERIOR RECEPTACLES AND EXTERIOR LIGHTS THROUGH PHOTOCELL DURING RESTROOM CONSTRUCTION. FURNISHED ALL RELAY/CONTACTOR FOR A COMPLETE WORKING SYSTEM. NOTE: CONTRACTOR MUST PROVIDE TEMPORARY POWER FIRST FOR EXISTING LIGHTS AND LIGHTS TO REMAIN BEFORE DEMOLITION OF EXISTING RESTROOM.
14. ADD GFCI WET RATED DUPLEX OUTLET WITH LOCKABLE METAL WHILE -IN-USE COVER AT POLE FOR OWNER FURNISHED STRING LIGHTS. CONNECT TO "LCP". REFER TO POLE WITH LANDSCAPE CONSTRUCTION DRAWINGS LC504 DETAIL 4.
15. (E) RECEPTACLE IN THIS AREA. PROVIDE NEW 6" ROUND PULL BOX. SPLICE EXISTING BRANCH CIRCUIT BELOW PULL BOX. PROVIDE PAVER COVER PULL BOX BY WUNDERCOVER OR APPROVED EQUAL. FIELD VERIFY EXACT LOCATION.
16. NEW PULL BOX, FIELD LOCATE EXISTING CONDUITS, INTERCEPT AND EXTEND ALL BRANCH CIRCUIT FROM EXISTING LOCATION TO TEMPORARY PANELBOARD. REFER TO NOTE 22/ED-101.
17. (E) EXISTING 20' CAMERA POLE. PROVIDE NEW WET RATED DUPLEX OUTLET WITH WHILE IN-USE METAL COVER OUTLET IN EXISTING POLE ABOVE EXISTING CAMERA. REFER TO DETAIL 1/E-003 FOR REQUIREMENTS. CONTRACTOR TO INSTALL 1/2" ENT INSIDE POLE FOR BRANCH CIRCUIT WIRING.
18. INTERCEPT (E) EXISTING BRANCH CIRCUIT CONDUIT AS SHOWN ON DEMOLITION SITE PLAN. WE ARE UNSURE HOW THIS IS ROUTED TO EXISTING RESTROOM. INTERCEPT EXISTING BRANCH CIRCUIT AND EXTEND TO EXISTING PULL BOX. EXTEND BRANCH CIRCUIT TO TEMPORARY POWER PANEL WHILE RESTROOM IS BEING INSTALLED.
19. NEW CONDUITS FOR NEW BRANCH CIRCUITS. INTERCEPT EXISTING BRANCH CIRCUIT AT PULL BOX AND EXTEND NEW BRANCH CIRCUIT WIRING TO TEMPORARY PANEL WHILE RESTROOM IS BEING INSTALLED.
20. PULL BOX FOR IN-GRADE POWER AND CONTROL WIRING FOR FIXTURE TYPE "SG".
21. 1"CONDUIT (PVC40) WITH 120V BRANCH CIRCUIT AND 300V DMX CONTROL WIRING CONDUIT FOR FIXTURE TYPE "SG" PER MANUFACTURER REQUIREMENTS. REFER TO DIAGRAM. PROVIDE 120V AND DMX TO EACH POWER SUPPLY. DAISY CHAIN DMX.
22. FIXTURE TYPE "SG" PROGRAMMABLE CONTROLLER. MOUNT ADJACENT TO LIGHT SWITCH.
23. DATA CABINET FOR FIBER TERMINATION.
24. NEW PG&E APPROVED COMMERCIAL RATED 400AMP SERVICE WITH (2)200AMP METER/MAIN ENCLOSURE, "M/M". REFER TO SINGLE LINE DIAGRAM.
25. PANEL BOARD AND LIGHTING CONTROL PANEL AT RESTROOM CHASE.
26. EXISTING PG&E SECONDARY CONDUIT (ASSUMED STREET LIGHT).
27. INTERCEPT EXISTING BRANCH CIRCUIT CONDUIT, PLACE NEW PULL BOX, AND EXTEND NEW BRANCH CIRCUIT TO EXISTING POLE LIGHTS AS SHOWN ON DEMOLITION PLAN. EXTEND TO NEW PULL BOX.
28. LOCKABLE RECEPTACLE PLUG BOX. FIELD VERIFY EXACT LOCATION WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN. REFER TO DETAIL 20/E-005.
29. CONNECT TO NEW ART KIOSK MONITOR. COORDINATE WITH MANUFACTURER FOR INSTALLATION REQUIREMENTS. PROVIDE 120V CONNECTION AND (1)CITY FIBER FROM DATA CABINET IN RESTROOM BUILDING TERMINATE FIBER TO CAT6 CONVERTER AT KIOSK AND TERMINATE CAT6 CABLE PER KIOSK MANUFACTURER REQUIREMENTS.
30. EXISTING BRANCH CIRCUITS IN THE ADOBE ALL HOME RUN TO EXISTING PULL BOX SHOWN ON NOTE 16.
31. PROVIDE NEW PULL BOX TO REPLACE WATER VALVE COVER. INTERCEPT EXISTING BRANCH CIRCUIT TO EXISTING LIGHTS AS SHOWN ON DEMOLITION PLAN AND EXTEND NEW BRANCH CIRCUITS TO TEMPORARY POWER PANEL VIA PULL BOX WHILE NEW RESTROOM IS BEING INSTALLED.
32. PROVIDE NEW BRANCH CIRCUIT SO EXISTING POLE LIGHTS AND THE ART LIGHTS WILL BE IN OPERATION WHEN NEW RESTROOM IS UNDER CONSTRUCTION.
33. 20AWG 8 CONDUCTOR DIRECT BURIAL LEAD CABLE WITH DISCONNECT TO CONNECT FROM DRIVER TO FIXTURE. INSTALL 2"C (PVC 40) UNDER CONCRETE OR PAVERS BUT AT LANDSCAPE AREA CAN BE DIRECT BURIAL. (1) PER FIXTURE.
34. REPLACE EXISTING ELECTRICAL PULL BOX AND RELOCATE TO NEW PAVER AREA. FIELD VERIFY WHAT THE EXISTING BRANCH CIRCUIT IS FEEDING AND INFORM ENGINEER.
35. NEW TELEPHONE BOX PER AT&T REQUIREMENTS. VERIFY EXACT LOCATION WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN.
36. INSTALL 2"C BETWEEN TEMPORARY 200AMP NEMA3R LOAD CENTER AND PG&E SECONDARY PULL BOX. PROVIDE WITH (3)#3/0 THWN AND (1)#6 CU GROUND. COORDINATE WITH PG&E. PG&E WILL SPLICE A SECONDARY PULL BOX.
37. EXISTING SECONDARY CONDUIT TO EXISTING SUB-SURFACE TRANSFORMER T-249 TO REMAIN.
38. INSTALL 2" (PVC 40) SPARE CONDUIT AND STUB TO EXISTING PULL BOX. SPARE CONDUIT WILL BE FOR FUTURE ADOBE RENOVATION.
39. PROVIDE PULL BOX FOR FUTURE POWER CONNECTION. PROVIDE (2)2"CONDUIT WITH PULL STRINGS. PAVER PULL BOX PER WUNDERCOVERS OR APPROVED EQUAL.
40. PROVIDE PULL BOX FOR FUTURE SIGNAL CONNECTION. STUB 2"CONDUIT WITH PULL STRING TO RESTROOM BUILDING PLUMBING SHAFT. LABEL CONDUIT STUBS.
41. PROVIDE NEW 2"CONDUIT (PVC 40) WITH PULL STRING PER AT&T REQUIREMENTS BETWEEN EXISTING AT&T VAULT TO KIOSK BUILDING TERMINAL CABINET.

ELECTRICAL SITE PLAN

SCALE: 1/8"=1'-0"

NORTH

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CITY OF SAN LUIS OBISPO

PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: ELECTRICAL SITE PLAN

REGISTERED PROFESSIONAL ENGINEER — WILLIAM A. THOMA — ELECTRICAL — STATE OF CALIFORNIA

EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY:	CJ
DRAWN BY:	TR
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APPROVED BY:	CJ
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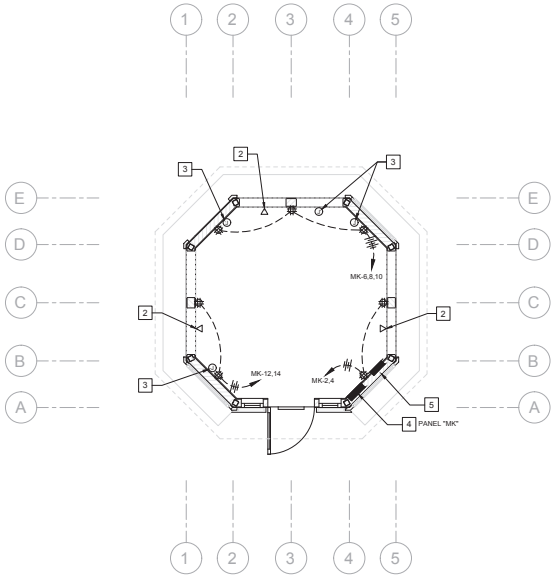
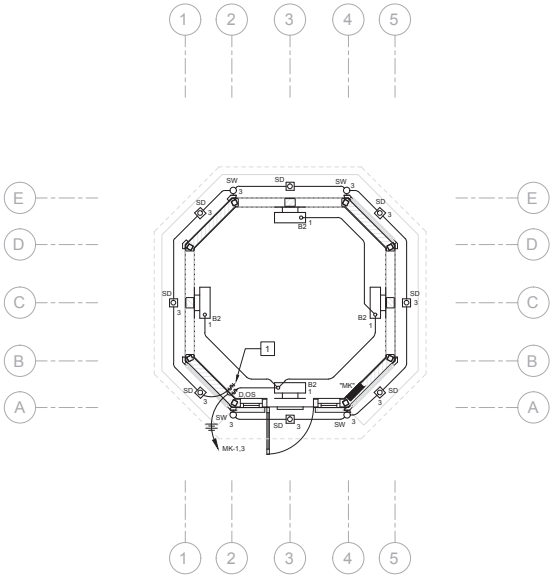


2 KIOSK POWER/SIGNAL PLAN

SCALE: 1/4"=1'0"



1 KIOSK LIGHTING PLAN

SCALE: 1/4"=1'0"

BUS RATING: 100A 120/240V, 1PH, 3W
MAIN: 100A MAIN CIRCUIT BREAKER
SPACES: 30 FULL SIZE PLUG-IN CB SPACES
AIC RATING: 10 KAIC PANEL

(N) LOAD CENTER
MK
CONNECTED VA

FLUSH MOUNT, NEMA 1
LOCATION: KIOSK
WITH EQUIPMENT GND BUS

CKT %VD	DIST (FT)	NOTES	LOAD TYPE	CKT	DESCRIPTION	TRIP	POLES	COND SIZE	PHASE A	PHASE B	COND SIZE	POLES	TRIP	DESCRIPTION	CKT	LOAD TYPE	NOTES	DIST (FT)	CKT %VD
			L	1	INTERIOR LIGHTING	20	1	12	360		12	1	20	RECEPTACLES	2	R			
			L	3	EXTERIOR LIGHTING	20	1	12		204	12	1	20	RECEPTACLES	4	R			
				5	SPARE	20	1		360		12	1	20	RECEPTACLES	6	R			
				7	SPARE	20	1			360	12	1	20	RECEPTACLES	8	R			
				9	SPARE	20	1		360		12	1	20	RECEPTACLES	10	R			
				11	SPACE					360	12	1	20	RECEPTACLES	12	R			
				13	SPACE				360		12	1	20	RECEPTACLES	14	R			
				15	SPACE									SPACE	16				
				17	SPACE									SPACE	18				
				19	SPACE									SPACE	20				
				21	SPACE									SPACE	22				
				23	SPACE									SPACE	24				
				25	SPACE									SPACE	26				
				27	SPACE									SPACE	28				
				29	SPACE									SPACE	30				

CON:	1478	1284
25%:	0	51
SUB:	0	0
TOT:	1478	1335
AMPS	12	11

LOAD (VA)	LOAD TYPE LEGEND	
2160	R	RECEPTACLE
234	L	LIGHTING (125% OF CONNECTED LOAD CEC 215.2)
0	M	MECHANICAL
0	K	KITCHEN APPLIANCE
0	N	NON-CONTINUOUS MISC.
0	C	CONTINUOUS MISC. (125% OF CONNECTED LOAD CEC 215.2)

REFERENCE NOTES

1. PROVIDE 24 HOUR PROGRAMMABLE TIMER FOR EXTERIOR LIGHTING CONTROLLERS (LEVITON #021-VPT24-1P2 OR APPROVED EQUAL.)
2. PROVIDE 4S BOX, RING, COVER PLATE AND 3/4" C.O. (EMT)(OVERHEAD TO TERMINAL CABINET FOR FUTURE DATA BY TENANT.
3. PROVIDE 4S BOX, RING, COVER PLATE AND 3/4" C.O. (PVC 40) (U.G.) TO PANEL FOR FUTURE USE.
4. NEW LOAD CENTER PROVIDE PER PANEL SCHEDULE ON THIS SHEET.
5. PROVIDE FLUSH MOUNTED CABINET WITH FOR AT&T AND CITY FIBER, 14"W X 4"D X 18"H.

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CITY OF SAN LUIS OBISPO

PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: ELECTRICAL KIOSK FLOOR PLANS

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 06/30/26
THOMA #20-8170

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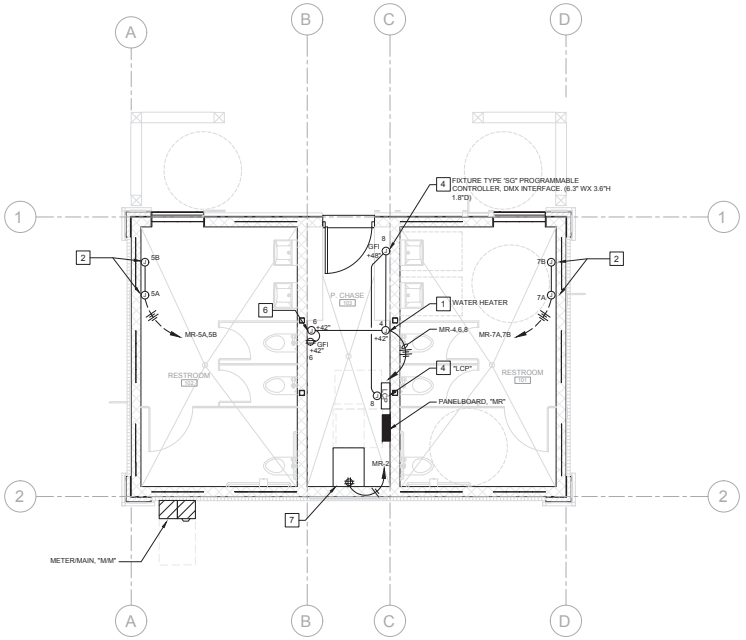
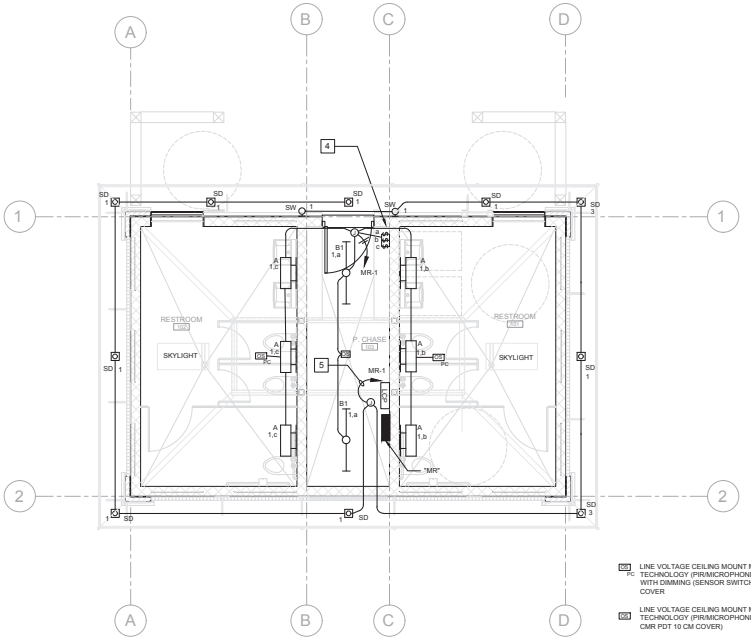


2 RESTROOM POWER/SIGNAL PLAN

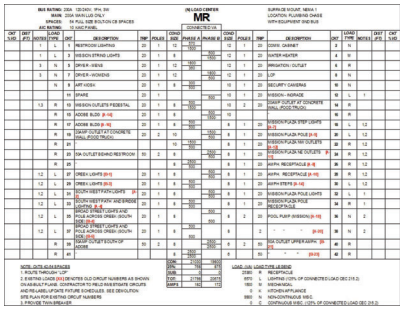
SCALE: 1/4"=1'0"



1 RESTROOM LIGHTING PLAN

SCALE: 1/4"=1'0"

NOTE: THE INTERIOR RESTROOM LIGHTS SHALL NOT TURN COMPLETELY OFF. SET OCCUPANCY SENSOR TO DIM DOWN AT 20-50% WHEN SPACE IS UNOCCUPIED.



REFERENCE NOTES

1. CONNECT TO WATER HEATER PER PLUMBING PLANS.
2. CONNECT TO ELECTRIC HAND DRYER VERIFY EXACT LOCATION TO ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.
3. CONNECTION TO FIXTURE TYPE SG CONTROLLER.
4. PROVIDE CONNECTION TO LIGHTING CONTROL PANEL ROUTE ALL EXTERIOR LIGHTS AND OUTLETS PER SCHEDULE.
5. ROUTE THROUGH "LCP".
6. CONNECT TO IRRIGATION CONTROL. VERIFY EXACT LOCATION WITH LANDSCAPE CONSTRUCTION PLANS PRIOR TO ROUGH-IN.
7. PROVIDE BLACK FINISH 26U WALL MOUNTED DATA CABINET WITH TEMPERED GLASS DOOR STYLE (CHATSWORTH 48"HX24"WX30"D CUBE-iT CABINET #12419-748 OR APPROVED EQUAL). FURNISH WITH STANDARD FAN AND FILTER KIT (#40972-001), VERTICAL CABLING SECTION (21)1U #40970-711 AND (1)4U #4097-704. REFER TO DETAIL 6/E-003 FOR ADDITIONAL INFORMATION.

THOMA ELECTRIC, INC.
P.O. Box 1167 - 3562 Empleo St.
San Luis Obispo, CA 93406
Phone: (805) 543-3850
Fax: (805) 543-3829
cad@thomaelec.com

PROJECT TITLE: MISSION PLAZA ENHANCEMENTS

SHEET TITLE: ELECTRICAL RESTROOM FLOOR PLANS

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	CJ
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	ER-101

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	MISSION PLAZA - RESTROOM	**Report Page:**	(Page 5 of 6)
Project Address:		**Date Prepared:**	10/18/2022

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS
This section does not apply to this project.

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS
This section does not apply to this project.

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)
This section does not apply to this project.

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Form/Title	Field Inspector	
	Pass	Fail
NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Selections have been made based on information provided in this document. If any selection have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
		Pass	Fail
NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐	
NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐	

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-10-18 22:37:21

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	MISSION PLAZA - RESTROOM	**Report Page:**	(Page 3 of 6)
Project Address:		**Date Prepared:**	10/18/2022

H. INDOOR LIGHTING CONTROLS (Not including PAFs)
*This table includes lighting controls for conditioned and unconditioned spaces. When a control having a * is shown, the notes section of this table provides more detail on how compliance is achieved. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls

01	02	03	
Mandatory Demand Response §110.12(c)	Shut-off controls §130.1(c)	Field Inspector	
		Pass	Fail
Not Required <= 10,000 SF	Whole Building Auto Time Switch	☐	☐

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector	
								Pass	Fail
RESTROOMS - 101 &102	Restrooms	Auth. Personnel	Exempt*	Occupancy Sensor	Included	Included	No	☐	☐
P CHASE - 103	Electrical Mechancial Telephone Room	Manual ON/OFF	Dimmer	Occupancy Sensor	Included	Included	No	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved. *EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2*	13
	Plan Sheet Showing Daylit Zones:
RESTROOMS - 101 &102 RESTROOM	

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS
Each area complying using the Complete Building or Area Category Methods per §140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used .

Unconditioned Spaces

01	02	03	04	05	06

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-10-18 22:37:21

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6 and §141.0(b)2 for indoor lighting scopes using the prescriptive path.			
Project Name:	MISSION PLAZA - RESTROOM	**Report Page:**	(Page 1 of 6)
Project Address:		**Date Prepared:**	10/18/2022

A. GENERAL INFORMATION

01	Project Location (city)	SAN LUIS OBISPO	04	Total Conditioned Floor Area (ft²)	0
02	Climate Zone	5	05	Total Unconditioned Floor Area (ft²)	506
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1

• Support Areas

B. PROJECT SCOPE
This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations.

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☒ New Lighting System	Area Category Method	0	Area Category Method	506
☐ New Lighting System - Parking Garage				
Total Area of Work (ft²)	0		506	

C. COMPLIANCE RESULTS
If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1	Allowed Lighting Power per §140.6(b) (Watts)							Adjusted Lighting Power per §140.6(a) (Watts)				Compliance Results
	01	02	03	04		05		06	07		08	09
	Complete Building §140.6(c)1 (See Table I)	Area Category §140.6(c)2 (See Table I)	Area Category Additional §140.6(c)2G (+) (See Table J)	Tailored §140.6(c)3 (+) (See Table K)	=	**Total Allowed** (Watts)	≥	Total Designed (Watts) (See Table F)	Adjustments PAF Lighting Control Credits §140.6(a)2 (-) (See Table P)	=	**Total Adjusted** (Watts) *Includes Adjustments	**05 must be >= 08 §140.6**
Conditioned					=		≥			=		
Unconditioned		301.9	0		=	302	≥	274	0	=	274	COMPLIES

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-10-18 22:37:21

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	MISSION PLAZA - RESTROOM	**Report Page:**	(Page 6 of 6)
Project Address:		**Date Prepared:**	10/18/2022

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: William Thoma	Documentation Author Signature: [signature]
Company: Thoma Electric, Inc	Signature Date: 10.18.2022
Address: 3852 Empleo, Suite C	CEA/ HERS Certification Identification (if applicable): E10757
City/State/Zip: San Luis Obispo CA 93401	Phone: 805-543-3850

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: William Thoma	Responsible Designer Signature: [signature]
Company: Thoma Electric, Inc.	Date Signed: 2022-10-18
Address: 3852 Empleo Street, Suite C	License: E10757
City/State/Zip: San Luis Obispo CA 93401	Phone: 805-543-3850

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-10-18 22:37:21

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	MISSION PLAZA - RESTROOM	**Report Page:**	(Page 4 of 6)
Project Address:		**Date Prepared:**	10/18/2022

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowance / Adjustment	
					Area Category	PAF
RESTOOMS	Restrooms	0.65	398	258.7	No	No
ELECTRICAL, MECHANICAL, TELEPHONE ROOMS	Electrical Mechancial Telephone Room	0.4	108	43.2	No	No
		TOTALS:	506	301.9	See Tables J, or P for detail	

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM
This section does not apply to this project.

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE
This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY
This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING
This section does not apply to this project.

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS
This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE
This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))
This section does not apply to this project.

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-10-18 22:37:21

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	MISSION PLAZA - RESTROOM	**Report Page:**	(Page 2 of 6)
Project Address:		**Date Prepared:**	10/18/2022

C. COMPLIANCE RESULTS

Controls Compliance (See Table H for Details)	COMPLIES
Rated Power Reduction Compliance (See Table Q for Details)	

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE
This table includes all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Unconditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How is Wattage determined	Total Number of Luminaires	Excluded per §140.6(a)3	Design Watts	Field Inspector	
									Pass	Fail
A	A	No	No	34	Mfr. Spec	6	No	204	☐	☐
B1	B1	No	No	35	Mfr. Spec	2	No	70	☐	☐
							Total Designed Watts: UNCONDITIONED SPACES	274		

[1]*FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*

[2]*Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS
This section does not apply to this project.

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-10-18 22:37:21

thoma ENGINEERING
THOMA ELECTRIC, INC.
P.O. Box 1167 - 3562 Empleo St.
San Luis Obispo, CA 93406
Phone: (805) 543-3850
Fax: (805) 543-3829
cad@thomaelec.com

CITY OF SAN LUIS OBISPO

PROJECT TITLE: **MISSION PLAZA ENHANCEMENTS**

SHEET TITLE: **ENERGY COMPLIANCE DOC. - INTERIOR LIGHTING (RESTROOM)**

REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. THOMA
NO. 10757
ELECTRICAL
STATE OF CALIFORNIA
EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY: CJ
DRAWN BY: TR
CHECKED BY: CJ
APPROVED BY: CJ
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO. 91439-01
PLAN FILE NO. / LOCATION 0256-03-CU20
SHEET NO. ET24101

Feb 16, 2024 - 1:58pm - CReyes - K:\ENG\2020\20-8170\20-8170_ET24101-ET24102_ENERGY COMPLIANCE DOCUMENTATIONS.dwg

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	MISSION PLAZA - KIOSK	**Report Page:**	(Page 5 of 6)
Project Address:		**Date Prepared:**	10/18/2022

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Form/Title	Field Inspector	
	Pass	Fail
NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selection have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title	Systems/Spaces To Be Field Verified	Field Inspector	
		Pass	Fail
NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐	

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	MISSION PLAZA - KIOSK	**Report Page:**	(Page 3 of 6)
Project Address:		**Date Prepared:**	10/18/2022

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

*This table includes lighting controls for conditioned and unconditioned spaces. When a control having a * is shown, the notes section of this table provides more detail on how compliance is achieved. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls

01	02	03	
Mandatory Demand Response §110.12(c)	Shut-off controls §130.1(c)	Field Inspector	
		Pass	Fail
Not Required <= 10,000 SF	Whole Building Other	☐	☐

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector	
								Pass	Fail
KIOSK	All Other Space Types	Manual ON/OFF	Dimmer	Occupancy Sensor	N/A	N/A	No	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2

13 — Plan Sheet Showing Daylit Zones:

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Each area complying using the Complete Building or Area Category Methods per §140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used .

Unconditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowance / Adjustment	
					Area Category	PAF
UNLEASE TENANT ARE	All Other Space Types	0.4	164	65.6	No	No
		TOTALS:	164	65.6	See Tables J, or P for detail	

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRCC-LTI-E

This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6 and §141.0(b)2 for indoor lighting scopes using the prescriptive path.

Project Name:	MISSION PLAZA - KIOSK	**Report Page:**	(Page 1 of 6)
Project Address:		**Date Prepared:**	10/18/2022

A. GENERAL INFORMATION

01	Project Location (city)	SAN LUIS OBISPO	04	Total Conditioned Floor Area (ft²)	0
02	Climate Zone	5	05	Total Unconditioned Floor Area (ft²)	164
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1

B. PROJECT SCOPE

This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations.

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☒ New Lighting System	Area Category Method	0	Area Category Method	164
☐ New Lighting System - Parking Garage				
Total Area of Work (ft²)	0		164	

C. COMPLIANCE RESULTS

If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1	Allowed Lighting Power per §140.6(b) (Watts)							Adjusted Lighting Power per §140.6(a) (Watts)				Compliance Results
	01	02	03	04		05		06	07		08	09
	Complete Building §140.6(c)1	Area Category §140.6(c)2	Area Category Additional §140.6(c)2G (+)	Tailored §140.6(c)3 (+)	=	Total Allowed (Watts)	≥	Total Designed (Watts)	Adjustments PAF Lighting Control Credits §140.6(a)2 (-)	=	Total Adjusted (Watts) *Includes Adjustments	05 must be >= 08 §140.6
	(See Table I)	(See Table I)	(See Table J)	(See Table K)				(See Table F)	(See Table P)			
Conditioned					=		≥			=		
Unconditioned		65.6	0		=	66	≥	28	0	=	28	COMPLIES

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	MISSION PLAZA - KIOSK	**Report Page:**	(Page 6 of 6)
Project Address:		**Date Prepared:**	10/18/2022

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: William Thoma	Documentation Author Signature:
Company: Thoma Electric, Inc	Signature Date: 10.18.2022
Address: 3852 Empleo, Suite C	CEA/ HERS Certification Identification (if applicable): E10757
City/State/Zip: San Luis Obispo CA 93401	Phone: 805-543-3850

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: William Thoma	Responsible Designer Signature:
Company: Thoma Electric, Inc.	Date Signed: 2022-10-18
Address: 3852 Empleo Street, Suite C	License: E10757
City/State/Zip: San Luis Obispo CA 93401	Phone: 805-543-3850

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	MISSION PLAZA - KIOSK	**Report Page:**	(Page 4 of 6)
Project Address:		**Date Prepared:**	10/18/2022

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This section does not apply to this project.

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This section does not apply to this project.

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS

This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS

This section does not apply to this project.

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS

This section does not apply to this project.

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	MISSION PLAZA - KIOSK	**Report Page:**	(Page 2 of 6)
Project Address:		**Date Prepared:**	10/18/2022

C. COMPLIANCE RESULTS

Controls Compliance (See Table H for Details)	COMPLIES
Rated Power Reduction Compliance (See Table Q for Details)	

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE

This table includes all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Unconditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How is Wattage determined	Total Number of Luminaires	Excluded per §140.6(a)3	Design Watts	Field Inspector	
									Pass	Fail
B	B2	No	No	7	Mfr. Spec	4	No	28	☐	☐
							Total Designed Watts: UNCONDITIONED SPACES	28		

[1]FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.

[2]Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.

G. MODULAR LIGHTING SYSTEMS

This section does not apply to this project.

THOMA ENGINEERING
THOMA ELECTRIC, INC.
P.O. Box 1167 - 3562 Empleo St.
San Luis Obispo, CA 93406
Phone: (805) 543-3850
Fax: (805) 543-3829
cad@thomaelec.com

CITY OF SAN LUIS OBISPO

PROJECT TITLE: **MISSION PLAZA ENHANCEMENTS**

SHEET TITLE: **ENERGY COMPLIANCE DOC. - INTERIOR LIGHTING (KIOSK)**

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA NO. 10757 ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 06/30/26
THOMA #20-8170

DESIGNED BY:	CJ
DRAWN BY:	TR
CHECKED BY:	CJ
APPROVED BY:	CJ
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	ET24102

Feb 16, 2024 - 1:58pm - CReyes - K:\ENG\2020\20-8170\20-8170_ET24101~ET24102_ENERGY COMPLIANCE DOCUMENTATIONS.dwg

PLUMBING GENERAL NOTES

1. All work shown herein shall comply with the requirements of the following codes:
   - 2019 California Administrative Code (CAC): Part 1, Title 24, California Code of Regulations (CCR)
   - 2019 California Building Code (CBC): Part 2, Title 24 CCR
   - 2019 California Electrical Code (CEC): Part 3, Title 24 CCR
   - 2019 California Mechanical Code (CMC): Part 4, Title 24 CCR
   - 2019 California Plumbing Code (CPC): Part 5, Title 24 CCR
   - 2019 California Energy Code (CEnC): Part 6, Title 24 CCR
   - 2019 California Fire Code (CFC): Part 9, Title 24 CCR
   - 2019 California Green Building Standards Code (CALGreen): Part 11, Title 24 CCR
2. Contractors are referred to the specifications of the project for more detailed and additional requirements.
3. Furnish all labor, materials, transportation, and perform all required operations to provide a complete and operable system, in accordance with the full intent and meaning of the Drawings, Specifications, and per standard trade practices.
4. The installation of piping and equipment shall be made in such a manner to clear beams and obstructions. Do not cut into or reduce the size of plates or any load carrying members without approval of the Architect. Check drawings and work of others to prevent interference.
5. All plumbing fixtures, fittings and piping shall be "lead-free" per California AB1953 and meet the requirements of ANSI/NSF 61, Section 9.
6. All locations of piping and equipment are shown diagrammatically. Adhere to locations as closely as possible. Vary runs or arrangement of piping as required to meet structural and other interferences or as required by Architect.
7. Pipe sizes shown on drawings shall be installed as shown. Branch line sizes to fixtures when not indicated shall be per minimum branch line size as indicated on fixture schedule. Equipment and appliance supply piping shall be as indicated on drawings. Contractor shall verify size of equipment or appliance connection and provide reducing fittings to suit.
8. No product will be accepted on the job site without prior approval by the Architect. The Contractor shall submit catalog sheets of all plumbing equipment.
9. All piping materials are to be stored and capped in a clean dry location. All piping installed shall be capped at the end of each work day to prevent dust, dirt or foreign material entering the pipe from the time of rough-in installation until the final connection of the piping to fixtures or equipment.
10. Rough-in and/or install plumbing fixtures at heights indicated on plans, or as directed by Architect. If a conflict in fixture location is noted on the drawings, the architectural drawings shall take precedence.

SERVICE WATER HEATING STANDARDS AND CODE MEASURES

Service Water Heating Systems

1. Service water heating systems and equipment may be installed only if the manufacturer has certified that the system or equipment complies with all the requirements of section 110.3 of the CEnC.
2. Service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use as listed in Table 3, Chapter 51 of the ASHRAE Handbook, HVAC Applications Volume.
3. All hot water piping shall be insulated in accordance with CEnC section 120.3. (See: Table 120.3-A, For Ref)

WATER HEATER SCHEDULE

MARK	MAKE	MODEL	STORAGE CAPACITY (GALLONS)	DIMENSIONS	FULL WEIGHT (POUNDS)	INLET/ OUTLET (INCHES)	POWER			KW (WATTS)	MBTUH	BRANCH SIZE (INCHES)	FLUE SIZE (INCHES)	REMARKS
							VOLTS	PH	CY					
WH-1	A.O. SMITH	DEL-15	15	26"x18"ø	183	3/4"	120	1	60	1.5	–	–	–	

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	MIN. BRANCH SIZE (")				MAKE AND MODEL	FITTINGS	REMARKS
		W	V	CW	HW			
DF-1	ADA DRINKING FOUNTAIN FREE STANDING W/BOTTLE FILLRER	2	1-1/2	1/2	–	MOST DEPENDABLE FOUNTAIN #10140SMSS, 65" TALL, COLOR=BLUE	PROVIDE WITH 10"SS SURFACE CARIER	INSTALL PER ADA REQUIREMENT REFER TO LANDSCAPE PLANS FOR LOCATION
FD-1	FLOOR DRAIN W/ ROUND STRAINER & TRAP PRIMER	2	1-1/2	1/2	–	ZURN #Z4158Z1-2NH-VP-P 5"ø, CAST IRON W/ BRONZE STRAINER	ZURN #Z1022-XL LEAD FREE SANI-GUARD AUTOMATIC TRAP PRIMER	
FS-1	FLOOR SINK W/HALF GRATE & TRAP PRIMER	3	2	–	–	ZURN #Z1901-3NH-2-15, 12"x12"x6" ENAMELED CAST IRON	ZURN #Z1022-XL LEAD FREE SANI-GUARD AUTOMATIC TRAP PRIMER	INSTALL WITH SOLID LOOSE COVER, PROVIDE 1/2 GRATE TO OWNER FOR FUTURE INSTALLATION DURING TI
FS-2	FLOOR SINK W/HALF GRATE & TRAP PRIMER	2	1-1/2	–	–	ZURN #Z1900-2NH-2-15, 12"x12"x6" ENAMELED CAST IRON	ZURN #Z1022-XL LEAD FREE SANI-GUARD AUTOMATIC TRAP PRIMER	INSTALL WITH SOLID LOOSE COVER, PROVIDE 1/2 GRATE TO OWNER FOR FUTURE INSTALLATION DURING TI
GT-1	GREASE TRAP FLOOR MOUNT 35 GPM	3	2	–	–	CANPLAS #3935A03, 31"x23.5"x17" TALL GREY THERMOPLASTIC	PROVIDED WITH 35 GPM FLOW CONTROL FITTING	SEE DETAIL A/P2.0
HB-1	HOSE BIBB RECESSED W/ VACUUM BREAKER	–	–	3/4	–	ACORN #8104-SSLF, CAST ALUMINUM W/STAINLESS VALVE	PROVIDE W/LOOSE TEE KEY	
HB-2	HOSE BIBB RECESSED W/ VACUUM BREAKER	–	–	3/4	–	ACORN #8151-SSLF, STAINLESS STEEL	PROVIDE WITH LOCKABLE COVER	
L-1	ADA LAVATORY WALL MOUNT 0.50 GPM, 0.16 GPC HARDWIRED SENSOR	2	1-1/2	1/2	–	ACORN "DURA-WARE" 1953LC-1-DMS-9-H34-GE-EE, 20"x22", 304 STAINLESS STEEL	CHICAGO #116.706.AB.1 W/GRID STRAINER, STOPS, SUPPLIES, C.P. BRASS "P" TRAP,	INSTALL PER ADA REQUIREMENTS SEE NOTE #2
JS-1	SERVICE SINK WALL MOUNTED W/VACUUM BREAKER	3	2	3/4	3/4	ZURN Z5900-IP3, 24"X20", ENAMELED CAST IRON	ZURN FAUCET #Z843M1-XL-CS,	
WC-1	ADA WATER CLOSET WALL MOUNTED ELONGATED, 1.28 GPF HARDWIRED SENSOR	4	2	1-1/4	–	ACORN "DURA-WARE" 2105-T-1-1.28-FVBO-CN-ADA 29"x14", 304 STAINLESS STEEL	SENSOR FLUSH VALVE: ZURN #ZEMS6152AV-HET ZURN CARRIER Z1202-1N-4	PROVIDE CARRIER WITH REAR ANCHOR SUPPORT SEE NOTE #1
WC-2	WATER CLOSET WALL MOUNTED ELONGATED, 1.28 GPF HARDWIRED SENSOR	4	2	1-1/4	–	ACORN "DURA-WARE" 2105-T-1-1.28-FVBO-CN-ADA 29"x14", 304 STAINLESS STEEL	SENSOR FLUSH VALVE: ZURN #ZEMS6152AV-HET ZURN CARRIER Z1202-1N-4 OR Z1202-1N-4	INSTALL PER ADA REQUIREMENTS PROVIDE CARRIER WITH REAR ANCHOR SUPPORT SEE NOTE #1

NOTES:
1. PROVIDE WITH 1 ZURN HARDWIRED POWER CONVERTER -HW6 (SERVES UP TO 8 FIXTURES). LOW VOLTAGE WIRING TO BE INSTALLED IN CONDUIT.
2. PROVIDE WITH 1 CHICAGO HARDWIRED POWER TRANSFORMER 243.259.00.1(SERVES UP TO 8 FIXTURES). LOW VOLTAGE WIRING TO BE INSTALLED IN CONDUIT.

UTILITY SIZING

DOMESTIC WATER SERVICE – 989 BROAD ST

TOTAL WSFU	FT/FV	GPM	PIPE SIZE	METER SIZE	STREET PSI	REGULATED PSI	PSI/100' FRICTION
40	FV	47	2"	1-1/2	55	N/A	8

MAXIMUM FIXTURE UNITS ALLOWED

PIPE	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
HOT WATER (5 FPS MAX.)	2"	7	17	28	47	115	–	–
COLD WATER (8 FPS MAX.)	3	11	25	55	96	249	459	692
FLUSH VALVES (8 FPS MAX.)	–	–	–	14	31	127	317	631

Piping sized per 2019 California Plumbing Code

SEWER – 989 BROAD ST

TOTAL DFU	PIPE SIZE	BUILDING DRAIN SLOPE	BUILDING SEWER SLOPE
29	4"	2%	SEE CIVIL

Piping sized per 2019 California Plumbing Code

PLUMBING LEGEND

SYMBOL	ABBREV.	DESCRIPTION
		GATE VALVE
		BALL VALVE
	TPV	TRAP PRIMER VALVE
		VALVE IN RISER
	YB	SOV IN YARD BOX
	FCO	FLOOR CLEANOUT
	COTG	CLEANOUT TO GRADE
WCO	WCO	WALL CLEANOUT
		PIPE UP
		PIPE DOWN
		PIPE CONNECTION
		CAPPED/PLUGGED PIPE
		FLOOR DRAIN
	S/W	SOIL OR WASTE BELOW GRADE
	V	SANITARY VENT
	CW	COLD WATER
	HW	HOT WATER
	HWR	HOT WATER RETURN
TP	TP	TRAP PRIMER LINE

PLUMBING ABBREVIATIONS

ABV	ABOVE	IE	INVERT ELEVA
ADA	AMERICAN DISABILITIES ACT	KW	KILOWATTS
AFF	ABOVE FINISHED FLOOR	LAV	LAVATORY
AG	ABOVE GRADE	LBS	POUNDS
AMP	AMPERAGE	MAX	MAXIMUM
ARCH	ARCHITECT	MBTUH	BTU PER HOUI
BEL	BELOW	MECH	MECHANICAL
BFP	BACKFLOW PREVENTOR	MFR	MANUFACTURE
BLDG	BUILDING	MIN	MINIMUM
CFH	CUBIC FOOT PER HOUR	(N)	NEW
CI	CAST IRON	NPS	NOMINAL PIPE
℄	CENTER LINE	NTS	NOT TO SCALE
CONN	CONNECTION	PH	PHASE
CONT	CONTINUE(D)	PP	POLYPROPYLE
CP	CHROME PLATED	PSI	POUNDS PER
CPVC	CHLORINATED POLYVINYL CHLORIDE	RM	ROOM
CY	CYCLES	RPM	REVOLUTIONS
DFU	DRAINAGE FIXTURE UNITS	RWL	RAIN WATER LEADER
DN	DOWN	RWO	RAIN WATER OVERFLOW
(E)	EXISTING	SOV	SHUT-OFF VALVE
ELEC	ELECTRICAL	TW	TEMPERED WATER
EQPT	EQUIPMENT	TYP	TYPICAL
FLR	FLOOR	UON	UNLESS OTHERWISE NOTED
FR	FROM	V	VENT
FT	FLUSH TANK	VAC	VACUUM
FV	FLUSH VALVE	VTR	VENT THRU ROOF
GA	GAGE OR GAUGE	W	WASTE
GALV	GALVANIZED	W/	WITH
GPC	GALLONS PER CYCLE	W/O	WITHOUT
GPF	GALLONS PER FLUSH	WC	WATER CLOSET
GPM	GALLONS PER MINUTE	WSFU	WATER SUPPLY FIXTURE UNIT
HP	HORSEPOWER	WT	WEIGHT

PROJECT TEAM LIST

MANAGING PRINCIPAL	Brandon Rodgers	(805) 548-1443	brandonr@bmaslo.com
PROJECT MANAGER	Chris Schellhase	(805) 548-1446	chriss@bmaslo.com
PLUMBING DESIGNER	Chris Schellhase	(805) 548-1446	chriss@bmaslo.com

MISSION PLAZA ENHANCEMENTS

CITY OF SAN LUIS OBISPO

MISSION PLAZA RESTROOM & KIOSK
CONSTRUCTION DOCUMENTS

PROJECT TITLE:

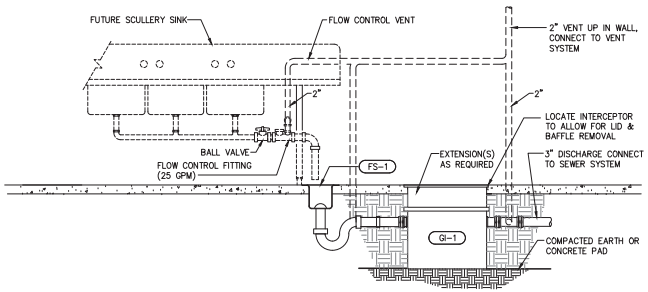
PLUMBING NOTES, SCHEDULES, LEGEND & ABBREVIATIONS

SHEET TITLE:

100% CONSTRUCTION DOCUMENTS

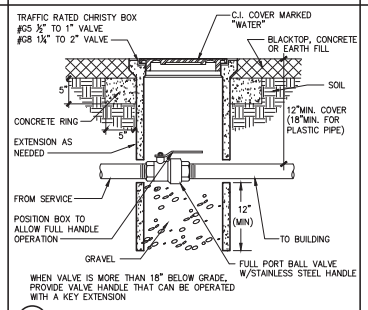
BMA Mechanical +
689 Tank Farm Rd., Ste 240
SLO, CA 93401
OFF: (805) 544-4269
BMA JOB# 22.051.00

DESIGNED BY: CS
DRAWN BY: ITM
CHECKED BY: CS
APPROVED BY: CS
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO.: 91439-01
PLAN FILE NO. / LOCATION: 0256-03-CU20
SHEET NO.: P1.0

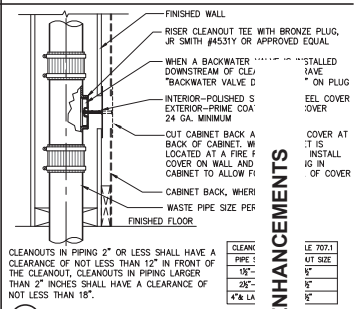


A GREASE INTERCEPTOR

9

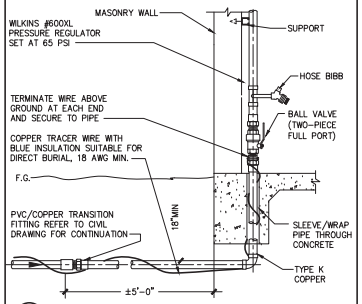


6 VALVE IN YARD BOX

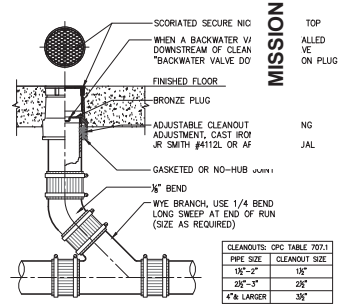


3 WALL CLEANOUT
NTS

8



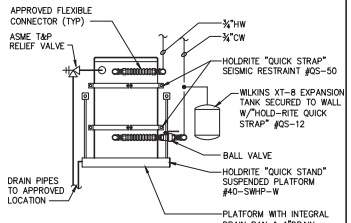
5 BUILDING WATER SUPPLY
NTS



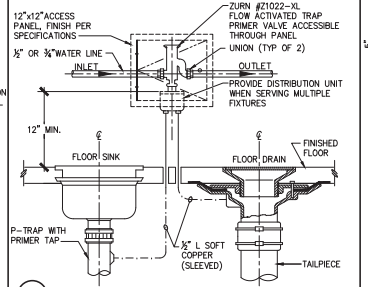
CLEANOUTS: OPC TABLE 707.1	
PIPE SIZE	CLEANOUT SIZE
1¼"–2"	1½"
2½"–3"	2½"
4"& LARGER	3½"

2 FLOOR CLEANOUT

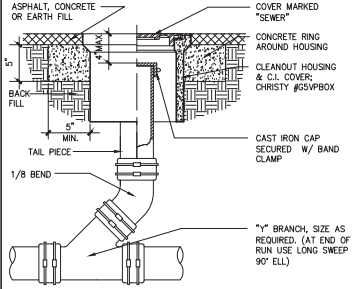
7



7 WH-1



4 FLOOR SINK / DRAIN TRAP PRIMER



1 CLEANOUT TO GRADE

MISSION PLAZA ENHANCEMENTS

MISSION PLAZA RESTROOM & KIOSK
CONSTRUCTION DOCUMENTS

PLUMBING DETAILS

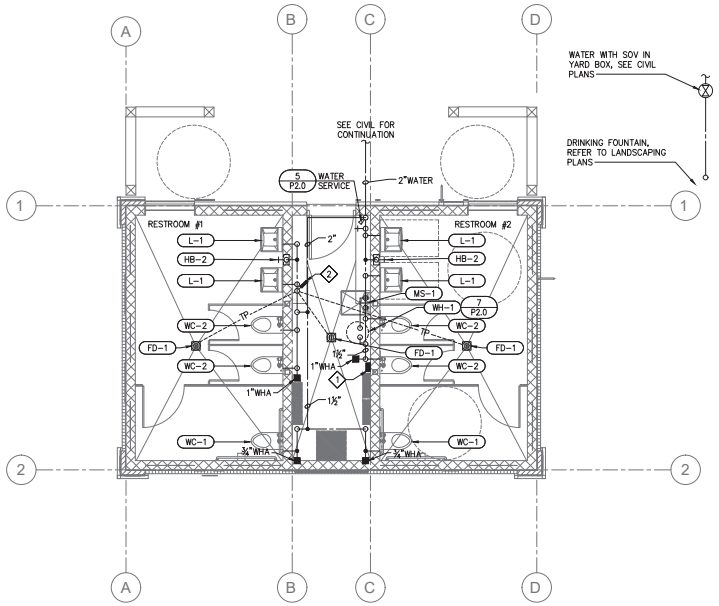
PROJECT TITLE:

SHEET TITLE:

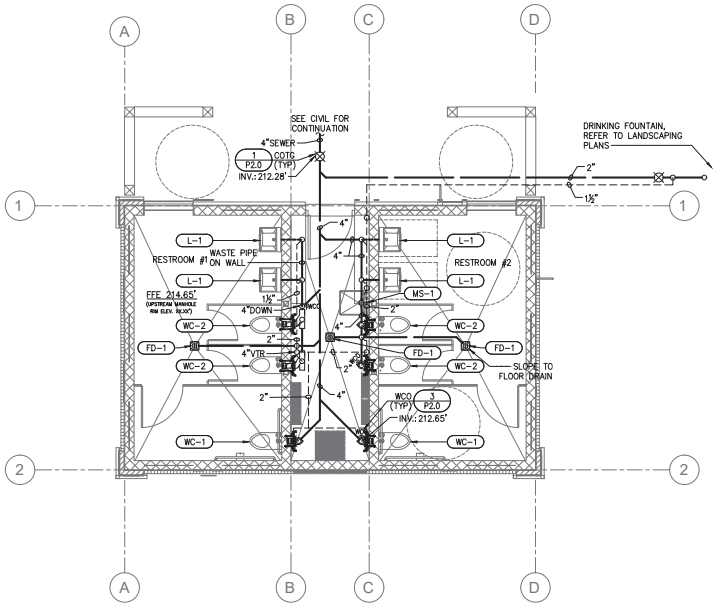
100% CONSTRUCTION DOCUMENTS

BMA Mechanical +
689 Tank Farm Rd., Ste 240
SLO, CA 93405
OFF: (805) 544-4269
BMA JOB# 22203.00

DESIGNED BY: CS
DRAWN BY: ITM
CHECKED BY: CS
APPROVED BY: CS
SCALE: AS NOTED
DATE: 05.14.2024
CITY SPECIFICATION NO.: 91439-01
PLAN FILE NO. / LOCATION: 0256-03-CU20
SHEET NO.: P2.0



HOT & COLD WATER



WASTE & VENT

MISSION PLAZA ENHANCEMENTS

PLUMBING FLOOR PLANS (RESTROOMS) - WASTE & WATER

SCALE: 1/4" = 1' - 0"

REFERENCE NOTES

1. 24v transformers for water closets and lavatories. Install low voltage wiring in conduit.
2. Flow activated trap primer, see detail 4/P2.0.

GENERAL NOTES

1. See plumbing fixture schedule for pipe branch size to individual fixtures.
2. Install all waste piping with a minimum 2% slope unless otherwise noted.

MISSION PLAZA RESTROOM & KIOSK CONSTRUCTION DOCUMENTS

PROJECT TITLE:

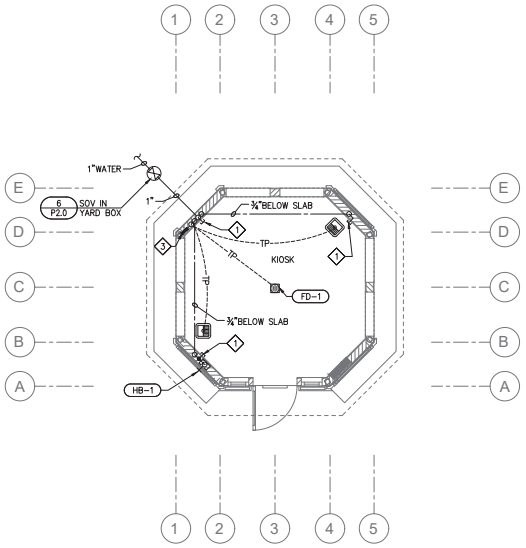
PLUMBING FLOOR PLANS (RESTROOMS) WASTE & WATER

SHEET TITLE:

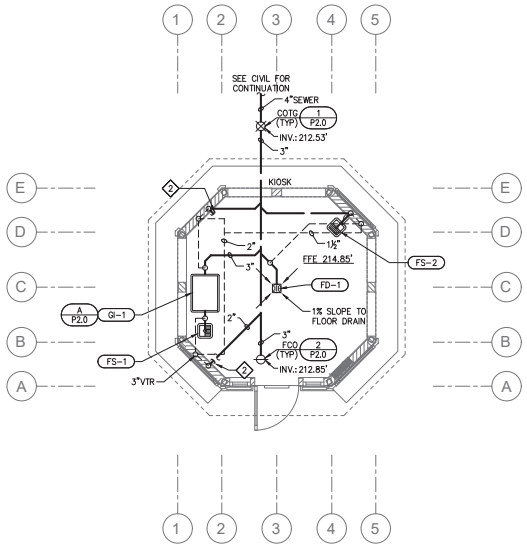
100% CONSTRUCTION DOCUMENTS

BMA Mechanical +
689 Tank Farm Rd., Ste 240
SLO, CA 93405
OFF: (805) 544-4269
BMA JOB# 22203.00

DESIGNED BY:	CS
DRAWN BY:	ITM
CHECKED BY:	CS
APPROVED BY:	CS
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	P3.0



COLD WATER



WASTE & VENT

MISSION PLAZA ENHANCEMENTS

PLUMBING FLOOR PLANS (KIOSK) - WASTE & WATER

SCALE: 1/4" = 1' - 0"

REFERENCE NOTES

1. Rough-in ¾" water for future sink. Provide with angle stop and cap.
2. Rough-in 2" waste & 1½" vent for future sink.
3. Flow activated trap primer, see detail 4/P2.0.

GENERAL NOTES

1. See plumbing fixture schedule for pipe branch size to individual fixtures.
2. Install all waste piping with a minimum 2% slope unless otherwise noted.

CITY OF SAN LUIS OBISPO

MISSION PLAZA RESTROOM & KIOSK CONSTRUCTION DOCUMENTS

PROJECT TITLE:

PLUMBING FLOOR PLANS (KIOSK) WASTE & WATER

SHEET TITLE:

100% CONSTRUCTION DOCUMENTS

BMA Mechanical +
689 Tank Farm Rd., Ste 240
SLO, CA 93405
OFF: (805) 544-4269
BMA JOB# 22203.00

DESIGNED BY:	CS
DRAWN BY:	ITM
CHECKED BY:	CS
APPROVED BY:	CS
SCALE:	AS NOTED
DATE:	05.14.2024
CITY SPECIFICATION NO.	91439-01
PLAN FILE NO. / LOCATION	0256-03-CU20
SHEET NO.	P3.1

SPECIAL PROVISIONS

FOR

CITY OF SAN LUIS OBISPO

Mission Plaza Enhancements

Specification No. 91439-01

August 2024

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

919 Palm Street
San Luis Obispo, CA 93401
(805) 781-7200

Mission Plaza Enhancements

Specification No. 91439-01

Approval Date June 20, 2023

ARCHITECT OF RECORD

STRUCTURAL ENGINEER OF RECORD

LANDSCAPE ARCHITECT OF RECORD

CIVIL ENGINEER OF RECORD

MECHANICAL ENGINEER OF RECORD

EXPIRES: 06/30/26
THOMA #20-8170
ELECTRICAL ENGINEER OF RECORD

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NOTICE TO BIDDERS
BID SUBMISSION

Sealed bids will be received by the City of San Luis Obispo at the Public Works Administration Office located at 919 Palm Street, San Luis Obispo California, 93401 until

11:30 a.m. on September 12, 2024

at which time they will be publicly opened and read aloud. Public bid opening may be accessed via Microsoft Teams video conference and conference call. In person attendance will be permitted. Use the following link:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZDZkNmNmNTMtMjkyYi00MzMwLWJjZmEtMTlkOWViNmQ4NjVj%40thread.v2/0?context=%7b%22Tid%22%3a%22a78b182d-94e4-4507-a9a9-330dcb148164%22%2c%22Oid%22%3a%2255684c81-fa0a-443f-b6a5-1f55eacc1141%22%7d

or join by phone with this number: (209)645-4165 AND CONFERENCE ID: 423 163 152#

Submit bid in a sealed envelope plainly marked:

MISSION PLAZA ENHANCEMENTS, SPECIFICATION NO. 91439-01

Any bid received after the time and date specified will not be considered and will be returned to the bidder unopened. Bids received by Fax or Email will not be considered.

By submission of bid you agree to comply with all instruction and requirements in this notice and the contract documents.

All bids must be submitted on the Bid Item List form(s) provided and submitted with all other Bid Forms included in these Special Provisions.

Each bid must be accompanied by either a:

1. certified check
2. cashier's check
3. bidder's bond

made payable to the City of San Luis Obispo for an amount equal to ten percent of the bid amount as a guaranty. Guaranty will be forfeited to the City San Luis Obispo if the bidder, to whom the contract is awarded, fails to enter into the contract.

The City of San Luis Obispo reserves the right to accept or reject any or all bids or waive any informality in a bid.

All bids are to be compared based on the City Engineer's estimate of the quantities of work to be done, as shown on the Bid Item List.

Bids will only be accepted from bidders that are licensed in compliance with the provisions of Chapter 9, Division III of Business and Professions Code.

The award of the contract, if awarded, will be to the lowest responsive bid submitted by a responsible contractor whose bid complies with the requirements prescribed. If the contract is awarded, the contract will be awarded within 60 calendar days after the opening of the bids.

Failure to raise defects in the notice to bidders or bid forms prior to bid opening constitute a waiver of those defects.

BID DOCUMENTS

A copy of the plans and special provisions may be downloaded, free of charge, from the City's website at:

www.slocity.org/government/department-directory/public-works/public-works-bids-proposals

No printed copies are available for purchase at the City office.

Standard Specifications and Engineering Standards referenced in the Special Provisions may be downloaded, free of charge, from the City's website at:

www.slocity.org/government/department-directory/public-works/documents-online/construction-documents

You are responsible to obtain all issued addenda prior to bid opening. Addenda will be available to download at the City's website listed above or at the office of the City Engineer.

Contact the project manager, Sandra Golonka at 805-781-7239 or the Public Works Department at (805) 781-7200 prior to bid opening to verify the number of addenda issued.

You are responsible to verify your contact information is correct on the plan holders list located on the City's website at:

www.slocity.org/government/department-directory/public-works/public-works-bids-proposals.

PROJECT INFORMATION

In general, the project consists of demolition of the existing restroom building, trellis structure, and site improvements for the construction of a new restroom and kiosk building with adjacent plaza and patio.

The project estimated construction cost is $2,250,000.

Contract time is established as 180 working days.

The fixed liquidated damages amount is established at $1,725 per day for failure to complete the work within the contract time.

In compliance with section 1773 of the Labor Code, the State of California Department of Industrial Relations has established prevailing hourly wage rates for each type of workman. Current wage rates may be obtained from the Division of Labor at:

https://www.dir.ca.gov/oprl/DPreWageDetermination.htm

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

QUALIFICATIONS

You must possess a valid Class A or Class B Contractor's License at the time of the bid opening.

You and any subcontractors required to pay prevailing wage must be registered with the Department of Industrial Relations pursuant to Section 1725.5 of the Labor Code.

You as the prime contractor or a qualified subcontractor utilized by you must have experience constructing projects similar to the work specified for this project. Provide six separate reference projects completed by you or your qualified subcontractor as described below. All referenced projects must have been completed within the last five years from this project's bid opening date unless otherwise noted below.

Two of the six referenced projects must include construction of a new public building completed by you as the prime contractor or a qualified subcontractor used for this project.

One of the six referenced projects must include brick paving work completed by either you as the prime contractor or a qualified subcontractor used for this project.

One of the six referenced projects must include plasterwork on a historic adobe structure completed by either you as the prime contractor or a qualified subcontractor used for this project within the last years twenty years from this project's bid opening date.

Two of the six reference projects must be for projects completed under contract with a city, county, state or federal government agency as the prime contractor for a project involving some work similar to this project.

Failure to provide reference projects as specified in this section and as required on the qualification form is cause to reject a bid as being non-responsive.

The City reserves the right to reject any bid based on non-responsiveness if a bidder fails to provide a bid that complies with all bidding instructions.

The City reserves the right to reject a responsive bid based on the non-responsibility of the bidder if the Director of Public Works or Designee finds, after providing notice and a hearing to the bidder, that the bidder lacks the

1. knowledge
2. experience,
3. or is otherwise not responsible as defined in Section 3.24 of the San Luis Obispo Municipal Code to complete the project in the best interest of the City.

Rejected bidders may appeal this determination. Appeal must comply with the requirements in this Notice to Bidders.

It is the City of San Luis Obispo's intent to award the contract to the lowest responsive bid submitted by a responsible bidder. If in the bidder's opinion the contract has been or may be improperly awarded, the bidder may protest the contract award.

Protests must be filed no later than five working days after either:

1. Bid opening date
2. Notification of rejected bid.

Protest must be in writing and received by the project manager located at:

919 Palm Street
San Luis Obispo, CA 93401.

Valid protests must contain the following information:

1. The reasons for the protest
2. Any supporting documentation
3. The ruling expected by the City to remedy the protest.

Any protest not containing all required information will be deemed invalid and rejected.

The City will consider additional documentation or other supporting information regarding the protest if submitted in compliance to the specified time limits. Anything submitted after the specified time limit will be rejected and not be considered.

The Director of Public Works or Designee may request additional information to be submitted within three days of the request, unless otherwise specified, and will notify the protester of ruling within ten days of determination.

If the protester is not satisfied with ruling, the protester may appeal the ruling to the City Council in compliance with Chapter 1.20 of the City of San Luis Obispo Municipal Code.

Pursuant to the Public Records Act (Government Code, § 6250, et seq.), the City will make public records available upon request.

AWARD

The lowest bidder will be determined in compliance with Public Contract Code Section 20103.8(c) with the Publicly Disclosed Funding Amount of $2,400,000 using the TOTAL PROJECT BID.

As a condition to executing a contract with the City, two bonds each equal to one hundred percent of the total contract price are required in compliance with Section 3-1.05 of the Standard Specifications.

You may substitute securities for moneys withheld under the contract in compliance with the provisions of the Public Contract Code, Section 10263.

ACCOMMODATION

If any accommodations are needed to participate in the bid process, please contact Allie Gernard at (805) 781-7200 or by Telecommunications Device for the Deaf at (805) 781-7107. Requests should be made as early as possible in the bidding process to allow time for accommodation.

BID FORMS

All bid forms must be completed and submitted with your bid. Failure to submit these forms and required bid bond is cause to reject the bid as nonresponsive. Staple all bid forms together.

THE UNDERSIGNED, agrees that they have carefully examined:

1. the location of the proposed work
2. the plans and specifications
3. read the accompanying instructions to bidders

and propose to furnish all:

4. materials
5. labor

to complete all the required work satisfactorily in compliance with

6. plans
7. specifications
8. special provisions

for the prices set forth in the bid item list:

BID ITEM LIST FOR MISSION PLAZA ENHANCEMENTS, SPECIFICATION NO. 91439-01

Item No.	SS(1)	Item Description	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
1	8, 12	TRAFFIC AND PEDESTRIAN CONTROL	LS	1	---	
2	13	WATER POLLUTION CONTROL	LS	1	---	
3	13	STREET SWEEPING	LS	1	---	
4 (S)	15, 39, 73	DEMOLITION OF EXISTING IMPROVEMENTS	LS	1	---	
5	14	HAZARDOUS MATERIALS ABATEMENT IN COMPLIANCE WITH OSHA	LS	1	---	
6	15, 20	CLEAR AND GRUB	LS	1	---	
7	20	TREE REMOVAL	EA	4		
8	5	CONSTRUCTION SURVEYING	LS	1	---	
9	5, 7	CONSTRUCTION FENCING	LS	1	---	
10	77	POTHOLE EXISTING UTILITIES	EA	20		
11	3, 5, 7	OSHA COMPLIANCE FOR TRENCHING	LS	1	---	
12	16	TEMPORARY POWER	LS	1	---	
13	7	SECURITY AND PATHWAY LIGHTING DURING NON-WORKING HOURS	LS	1	---	

Item No.	SS(1)	Item Description	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
14	16, 20	TEMPORARY IRRIGATION AND CONTROLLER	LS	1	---	
15 (S)	19	ROUGH GRADING CUT	CY (F)	80		
16 (S)	19	ROUGH GRADING FILL	CY (F)	70		
17 (S)	19	PRECISE GRADING	SQFT	6700		
18	20	TREE PROTECTION MEASURES	LS	1	---	
19	20	RELOCATE OLIVE TREE	LS	1	---	
20	73	CONCRETE CURB AND GUTTER	LF	70		
21	19, 39, 40, 77	STREET PAVING	SQFT	550		
22	84	CURB PAINT	LF	70		
23	84	4” WHITE TRAFFIC STRIPE	LF	215		
24	82	RELOCATE STREET SIGN	EA	1		
25	64, 77	4" PVC STORM DRAIN	LF	85		
26	68, 77	4” PERFORATED PVC STORM DRAIN	LF	90		
27	77	12” SQUARE CATCH BASIN AND GRATE	EA	4		
28	77	POP UP EMITTER WITH RIPRAP	EA	2		
29	70, 77	TRENCH DRAIN	LF	6		
30	20, 70, 77	TRENCH DRAIN GRATE COVER	LF	6		
31	77	2” WATER SERVICE	EA	1		
32	77	2” BACKFLOW PREVENTION DEVICE	EA	1		
33	77	4” PVC SEWER LATERAL	LF	50		
34	77	SEWER CLEANOUTS	EA	2		
35	20	DECORATIVE UTLITY LID COVER	EA	17		
36 (S)	99	BRICK UNIT PAVING	SQFT	3330		
37 (S)	99	BRICK UNIT PAVING – PERMEABLE SECTION	SQFT	310		
38 (S)	20	GRANITECRETE PAVING	SQFT	960		
39 (S)	99	BRICK EDGE BAND	LF	610		
40 (S)	99	BRICK EDGE BAND AT PERMEABLE BRICK	LF	40		
41	20	MOW CURB	LF	82		

Item No.	SS(1)	Item Description	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
42 (S)	99	GRANITE PLANTER CURB	LF	72		
43 (S)	99	BRICK STEPS	SQFT	70		
44 (S)	73	CONCRETE RETAINING CURB	LF	60		
45 (S)	99	BRICK SEATWALL	LF	66		
46 (S)	99	STONE SEATWALL	LF	28		
47 (S)	20	BENCH	EA	2		
48	20	TRIPLE STREAM WASTE RECEPTACLE	EA	2		
49	20	PLANTER POT A	EA	2		
50	20	PLANTER POT B	EA	1		
51	20	BIKE RACK	EA	1		
52	20	DRINKING FOUNTAIN & ASSOCIATED UNDER-GROUND PLUMBING LINES	EA	1		
53	20	BRONZE PLAQUE	EA	1		
54 (S)	20	PLANTING – SHRUB AREA	SQFT	1740		
55 (S)	20	PLANTING – GRASS SOD	SQFT	750		
56	20	TREES – 24” BOX	EA	1		
57	20	TREES – 48” BOX	EA	2		
58	20	TREE – 60” BOX	EA	1		
59	20	TREE – 96” BOX	EA	4		
60 (S)	20	IRRIGATION SYSTEM	LS	1	---	
61	20	ROOT BARRIER	LF	124		
62	20	INSTALL SOIL AND PLANTS IN FENCED PLANTING AREA	EA	2		
63	99	DECORATIVE PICKET FENCE	LF	80		
64	99	PLANTER FENCE	LF	32		
65	99	STAIR HANDRAIL	LF	20		
66	99	BAR COUNTER	LF	34		
67	77	MISSION STYLE RAILING	LS	1	---	
68	20	STRING LIGHT POST, CABLE, AND FOUNDATION	EA	5		
69	20	LANDSCAPE BOULDER	EA	17		

Item No.	SS(1)	Item Description	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
70	20	1 YEAR PLANT ESTABLISHMENT AND MAINTENANCE PERIOD	LS	1	---	
71 (S)	99	RESTROOM BUILDING	LS	1	---	
72 (S)	99	KIOSK BUILDING	LS	1	---	
73	99	PRIVACY SCREENS AND TRASH ENCLOURE	LS	1	---	
74 (S)	99	ELECTRICAL AND COMMUNICATION IMPROVEMENTS	LS	1	---	
75 (S)	99	PERMANENT ELECTRICAL SERVICE AND METERS	LS	1	---	
76	99	TEMPORARY SERVICE COORDINATION WITH PG&E	LS	1	---	
77	99	ELECTRONIC ART KIOSK DIRECTORY	LS	1	---	
78	99	DECORATIVE LIGHT POLE, FOUNDATION AND LUMINARE	LS	1	---	
79	99	SECURITY CAMERA POLE AND FOUNDATION	EA	2		
80	99	COMPLIANCE WITH ARCHEOLOGICAL MONITORING PLAN	LS	1	---	
81	99	ADOBE PRESERVATION	LS	1	---	
82	99	PERMANENT SERVICE COORDINATION WITH PG&E	LS	1	---	
83	99	COMPLIANCE WITH BUILDING PERMIT REQUIREMENTS	LS	1	---	
84	5	STAGING AREA RESTORATION	LS	1	---	
85	99	PULL FIBER THROUGH EXISTING CONDUIT	LF	1200		
					Bid Total	
Company Name:						

(1) refers to section in the Standard Specifications, with modifications in the Special Provisions, that describe required work.

(S) Specialty item per Section 5-1.13A SUBCONTRACTING, General of the Standard Specifications.

(F) final pay item per Section 9-1.02A

LIST OF SUBCONTRACTORS

Pursuant to Section 4100 of the Public Contracts Code and section 2-1.33C of the standard specifications, the Bidder is required to furnish the following information for each Subcontractor performing more than 1/2 percent (0.5%) of the total base bid. Do not list alternative subcontractors for the same work.

For Streets & Highways projects, subcontractors performing less than ten thousand dollars ($10,000) worth of work need not be mentioned. **Subcontractors required to pay prevailing wage, must be registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 to be listed.**

NOTE: If there are no subcontractors, write "NONE" and submit with bid.

Name Under Which Subcontractor is Licensed	License Number	**DIR Public Works Registration Number**	Address and Phone Number of Office, Mill or Shop	Specific Description of Subcontract	% of Total Base Bid

Attach additional sheets as needed.

PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT

In compliance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder, or any subcontractor to be engaged by the bidder, **has ____, has not ____** been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

NOTE: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Bid. Signing this Bid on the signature portion constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In compliance with Public Contract Code Section 10162, the Bidder must complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

_____ Yes _____ No

If the answer is yes, attach a letter explaining the circumstances

PUBLIC CONTRACT CODE SECTION 10232 STATEMENT

In compliance with Public Contract Code Section 10232, you hereby state under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against you within the immediately preceding two-year period because of your failure to comply with an order of a federal court which orders you to comply with an order of the National Labor Relations Board.

LABOR CODE SECTION 1725.5 STATEMENTS

The bidder has delinquent liability to an employee or the state for any assessment of back wages or related damages, interest, fines, or penalties pursuant to any final judgment, order, or determination by a court or any federal, state, or local administrative agency, including a confirmed arbitration award. Any judgment, order, or determination

that is under appeal is excluded, provided that the contractor has secured the payment of any amount eventually found due through a bond or other appropriate means.

_____ Yes _____ No

The bidder is currently debarred under Section 1777.1 or under any other federal or state law providing for the debarment of contractors from public works.

_____ Yes _____ No

NOTE: The above Statements and Questionnaire are part of the Bid. Signing this Bid on the signature portion constitute signature of this Statement and Questionnaire. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

NON-COLLUSION DECLARATION

I, _____, declare that I am _____ of _____, the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone refrained from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Executed on _____, 20_____, in _____

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____

(Signature and Title of Declarant)

(SEAL)

Subscribed and sworn to before me
this _____day of _____, 20_____

_____

Notary Public

Company Name:_____

BIDDER ACKNOWLEDGEMENTS

By signing below, the bidder acknowledges and confirms that this bid is based on the information contained in all contract documents, including the notice to bidders, plans, specifications, special provisions, and addendum number(s) _____. **(Note: You are responsible to verify the number of addenda prior to the bid opening.)**

The undersigned further agrees that in case of default in executing the required contract, with necessary bonds, within eight days, (not including Saturdays, Sundays, and legal holidays), after having received a mailed notice that the contract is ready for signature, the proceeds of the check or bond accompanying his bid will become the property of the City of San Luis Obispo.

Licensed in accordance with an act providing for the registration of contractors, License No._____, Expiration Date _____.

The above statement is made under penalty of perjury, and any bid not containing this information "will be considered non-responsive and will be rejected" by the City.

Signature of Bidder _____

_____
(Print Name and Title of Bidder)

DIR– Public Works Registration No: _____

Business Name (DBA): _____

Owner/Legal Name: _____

Indicate One: ☐Sole-proprietor ☐ Partnership ☐Corporation

List Partners/Corporate Officers: _____
Name Title

_____
Name Title

_____
Name Title

Business Address _____

Street Address _____

Mailing Address _____

City, State, Zip Code _____

Phone Number _____

Fax Number _____

Email Address _____

Date _____

QUALIFICATIONS

Failure to furnish complete reference information **ON THIS FORM**, as specified in this project's Notice to Bidders and indicated below, is cause to reject the bid. Additional information may be attached but is not a substitute for this form.

Reference Number 1

Name of Prime Contractor or Subcontractor Used for this Reference Project:	
Customer Name & Contact Individual:	
Telephone & Email:	
Project Name (Site Address):	
Did this project include new public building construction? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	
Is this reference project from work complete as the prime contractor for the project? Yes □ No □	Date project completed:

Reference Number 2

Name of Prime Contractor or Subcontractor Used for this Reference Project:	
Customer Name & Contact Individual:	
Telephone & Email:	
Project Name (Site Address):	
Did this project include new public building construction? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	
Is this reference project from work complete as the prime contractor for the project? Yes □ No □	Date project completed:

Reference Number 3

Name of Prime Contractor or Subcontractor Used for this Reference Project:	
Customer Name & Contact Individual:	
Telephone & Email:	
Project Name (Site Address):	
Did this project include brick paving work? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	
Is this reference project from work complete as the prime contractor for the project? Yes □ No □	Date project completed:

Reference Number 4

Name of Prime Contractor or Subcontractor Used for this Reference Project:	
Customer Name & Contact Individual:	
Telephone & Email:	
Project Name (Site Address):	
Did this project include plasterwork on a historic adobe structure? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	
Is this reference project from work complete as the prime contractor for the project? Yes □ No □	Date project completed:

Reference Number 5

Name of Prime Contractor or Subcontractor Used for this Reference Project:	
Customer Name & Contact Individual:	
Telephone & Email:	
Project Name (Site Address):	
Does this reference include some work similar to the project being bid? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	
Is this reference project from work complete as the prime contractor for the project? Yes □ No □	Date project completed:

Reference Number 6

Name of Prime Contractor or Subcontractor Used for this Reference Project:	
Customer Name & Contact Individual:	
Telephone & Email:	
Project Name (Site Address):	
Does this reference include some work similar to the project being bid? Yes □ No □	Describe the services provided and how this project is similar to that which is being bid:
Was this contract for a public agency? Yes □ No □	
Is this reference project from work complete as the prime contractor for the project? Yes □ No □	Date project completed:

ATTACH BIDDER'S BOND TO ACCOMPANY BID

Know all men by these presents:

That we _____, AS PRINCIPAL, and

_____, AS SURETY, are held and firmly bound unto the City of San Luis Obispo in the sum of:

_____ Dollars (_____) to be paid to said City or its certain attorney, its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents:

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the certain bid of the above

bounden _____

to construct _____
(insert name of street and limits to be improved or project)

dated _____ is accepted by the City of San Luis Obispo, and if the above

bounden _____, his heirs, executors, administrators, successors, and assigns shall duly enter into and execute a contract for such construction and shall execute and deliver the two bonds described within ten (10) days (not including Saturdays, Sundays, or legal holidays) after the above bounden,

_____, has received notice by and from the said City of San Luis Obispo that said contract is ready for execution, then this obligation shall become null and void; otherwise, it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, we hereunto set our hands and seals this ___ day of _____, 20____.

Bidder Principal:

_____

Signature Date
Title:

Surety:

_____

_____

_____

Bidder's signature is not required to be notarized. Surety's signature must be notarized.
Equivalent form may be substituted
(Rev. 6-30-14)

SPECIAL PROVISIONS
ORGANIZATION

Special provisions are under headings that correspond with the main section heading of the Standard Specifications. Each special provision begins with a revision clause that describes or introduces a revision to the Standard Specifications. Any paragraph added or deleted by a revision clause does not change the paragraph number of the Standard Specifications for any other reference to a paragraph of the Standard Specifications.

DIVISION I GENERAL PROVISIONS
1 GENERAL

Add to Section 1-1.01 GENERAL:

The work must be done in compliance with the City of San Luis Obispo, Department of Public Works:

1. Mission Plaza Enhancements - Special Provisions
2. City of San Luis Obispo Standard Specifications and Engineering Standards – 2020 edition
3. State of California, Department of Transportation Standard Specifications and Standard Plans – 2015 edition

In case of conflict between documents, governing ranking must comply with section 5-1.02 of the City of San Luis Obispo's Standard Specifications. All work must conform to these Special Provisions and appendices, project plans, and the most current Building Codes. In the event of a conflict, the more stringent requirement shall apply.

Failure to comply with the provisions of these sections is a material breach of contract:

1. Sections 5 through 8 of the Standard Specifications
2. Section 12 through 15 of the Standard Specifications
3. Section 77-1 of the Standard Specifications
4. Section 81 of the Standard Specifications
5. authorized working hours
6. OSHA compliance

3 CONTRACT AWARD AND EXECUTION

Add Section 3-1.18B CONTRACT EXECUTION, Building Permit:

3-1.18B Building Permit

The contractor must obtain a no-fee building permit from the Community Development Department. All requirements of the building permit shall be applied to the project. The contractor is responsible for coordinating inspection with the building division for the project. Request for inspection must be scheduled 72 hours in advance of the required inspection.

4 SCOPE OF WORK

Add to Section 4-1.03 WORK DESCRIPTION:

Comply with the provisions of Sections 3, 5, 6, 7, 8, 12, 13, 14, 15, 16, 19, 20, 37, 39, 40, 56, 64, 68, 70, 73, 77, 82, 84, 86, 90, and 99 for general, material, construction, and payment specifics. Refer to these Special Provisions including Appendix B Supplemental Technical Specifications for modifications to the above Sections.

5 CONTROL OF WORK

Add to Section 5-1.01 GENERAL:

Work hours are restricted to 7:00 a.m. to 4:00 p.m Monday through Friday with noise restricted quiet hours from 11:00 a.m. to 1:00 p.m. Quiet hours prohibits use of pneumatic equipment, sawcutting or jackhammer use, but work shall otherwise continue.

Work on and near the Adobe must be completed in consecutive working days. Commenced work should proceed without interruption until completed. Unless instructed by the Historical Monitor or Engineer. Notice to commence work in this area must given 5 days before intended start date in order for City staff to notify the Historical Monitor.

Replace 5th paragraph in Section 5-1.13A SUBCONTRACTING, General with:

You must perform work equaling at least 25 percent of the value of the original total bid with your:

1. Employees
2. Equipment
3. Rental equipment with operator
4. Rental equipment without operators

Excluding items designated with an “S” on the Bid Item List. “S” indicates specialty items of work. The value of specialty items of work is not included in the calculation.

A representative of the prime contractor must be on site when any subconsultant is performing contract work. Contract work will not be allowed to continue until prime contractor’s representative is on site.

Contractor shall provide a sequencing plan for the tie over for electrical from permanent to temporary service. The sequencing plan must be approved prior to work. Electrical service shall be provided to the plaza lighting at the end of each day.

The Contractor shall maintain a clean set of drawings and document weekly any changes to the project construction, document the location and depth of any existing utility or irrigation lines that are exposed, and the location of water and sewer lines under the buildings. The record drawings shall be submitted as a part of project closeout.

Add to Section 5-1.23A SUBMITTALS, General:

All critical submittals or items with long lead times shall be submitted within 3 weeks of the award of contract. All submittals and shop drawings shall be received within 6 weeks of award of contract. Late submittals may be allowed if the contractor can show the delivery of those items will not delay the completion of the project. When more than 4 submittals are submitted at one time the contractor shall prioritize the review process. The contractor will be allowed to start work when all critical submittals have been approved and the contractor can show that the delivery time of those items will not interrupt continuous work and that the project will be completed within the allowable working days. Attention to the start date should be given to avoid working on items that could be slowed during wet weather. The contractor shall give the city a two week notice before starting work. The contractor must start work within three weeks of approval of all critical submittals and proof of continuous work schedule.

Add Section 5-1.27A RECORDS with:

The Contractor must provide a digitally red-lined PDF version of the project that includes red line changes or revisions to plans and specifications at the completion of construction. Scans of the field record set will not be accepted. Release of retention and final payments will be held until the digital version of red line markups of the plans and specifications are provided for review and approved by the Engineer.

Replace Section 5-1.32 AREAS FOR USE with:

Contractor shall be allowed area for parking, staging, and construction in accordance with Appendix J: Construction Staging Plan. You are allowed to use three parking spaces along Broad Street for vehicle parking during work hours. Contractor Staging and work area must be fenced and secured as specified in Section 7-1.04 Public Safety of these Special Provisions.

Contractor shall maintain an approximate 18' clear path of travel within existing hardscape through the plaza between the mission and the worksite to allow for vehicle access to the plaza and parking lot across the creek via the Warden Bridge. Construction fencing posts and support legs shall not encroach into the clear path of travel.

The Contractor shall maximize pedestrian and vehicular egress along Monterey Street and the project frontage.

The Contractor shall maintain a safe pedestrian path of travel from Monterey Street through the plaza throughout construction of the project. The contractor shall select from options A or B when implementing the pedestrian path of travel: reference Appendix J: Construction Staging Plan. Redirecting pedestrians to Monterey and Broad crosswalk is not an option. Implementation and maintenance of the required pedestrian path of travel from Monterey Street to the plaza shall be included in the payment for Traffic and Pedestrian Control. Any modification to the striping on Monterey Street shall be restored to it original conditions and included in the price of Traffic and Pedestrian Control.

The Contractor shall restore or replace all areas of use for staging to its original condition.

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Add to Section 7-1.03B PUBLIC CONVENIENCE, Traffic Control Plan:

Work hours are Monday through Friday between 7:00 a.m. to 4:00 p.m.

Contractor shall provide traffic control plan and traffic control application at or before the preconstruction meeting. Traffic control plan must be drawn to scale. Contractor shall coordinate with the city when required during construction to provide modified traffic control for special public events, including but not limited to, holiday, music, and cultural celebrations and associated set up and tear down times. Traffic control application may be obtained on the City's website:

www.slocity.org/government/department-directory/public-works/documents-online/construction-documents

Upon approval of the traffic control plan, the City will issue a no-fee Encroachment Permit. Permittee is responsible to comply with all conditions of the traffic control plan. Complete work using due diligence to restore free flowing of traffic.

Add to Section 7-1.04 PUBLIC SAFETY:

You must provide a rigid 6' minimum high chain link or other rigid work site fence around any exterior storage and staging areas and provide other such safeguards and facilities to keep Mission Plaza users from entering the construction area. The City will supply fence screening materials for installation by the Contractor. The Contractor is responsible to maintain the fence screening throughout the duration of the project. You must control and maintain Mission Plaza access and vehicular traffic in a safe manner around the work site at all times. You must leave the work site clean and free from hazards at the end of each day and on weekends. Walkways must be swept daily. All tools, forms, stakes, hardware, paint cans, building materials and/or any other items that could be a potential hazard to the public and Plaza users must be removed from the work site at the end of each day. Coordinate work-site fence with staging area as specified in Section 5-1.32, "Areas of Use," of the Special Provisions. Contractor to provide security lighting for secure construction area during non-daylight, non-working hours and pathway lighting along fence adjacent to pedestrian path of travel for the duration of the project to the satisfaction of the Engineer.

8 PROSECUTION AND PROGRESS

Replace the 1st paragraph in Section 8-1.02A SCHEDULE, General with:

Provide a Level 2 Critical Path Method schedule for this work. A one week look ahead schedule shall be provided to the Engineer before commencing the following week's work. This requirement shall be completed in order to continue construction work.

Add to Section 8-1.03 PRECONSTRUCTION CONFERENCE:

14. Schedule of Values for all lump sum bid items.

9 PAYMENT

Add to Section 9-1.01 GENERAL:

Work as specified in these specifications and as shown on the Plans for which no separate payment is provided for in the Bid Item List will be considered a subsidiary obligation of the Contractor and the cost thereof shall be included in the applicable Contract prices for the item to which the work applies.

The following additional Bid Item descriptions are included for those atypical bid items not fully covered in the Standard Specifications:

BID ITEM 4 – DEMOLISION OF EXISTING IMPROVEMENTS - Payment for this lump sum bid item shall be made on a percentage basis based on the lump sum amount of the bid item. Work shall include removal of all items shown on the plans to be demolished, removed or replaced but not limited to existing restrooms, footings, concrete, walls, curbs, fences and footings, electrical systems, light poles and footings, landscaping, and irrigation. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 6 – CLEAR AND GRUB - Payment for this lump sum bid item shall be made on a percent complete basis, based on lump sum amount for this item, and includes full compensation for removal of all vegetation, including but not limited to roots, soil, logs, brush, stumps, and debris. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 9 – CONSTRUCTION FENCING - Payment for this lump sum bid item shall be made on a percent complete basis, based on lump sum amount for this item, and includes full compensation for installation and maintenance of temporary fencing for the entire project. Contractor shall install and maintain a City provided custom screening throughout the project. Fence footing must not create a tripping hazard within pedestrian or vehicular pathway. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 12 – TEMPORARY POWER - Payment for this lump sum bid item shall be made on a percent complete basis, based on lump sum amount for this item, and includes full compensation for sequencing plan, installation of temporary power service, cutover, and maintenance of the temporary service during construction. The temporary power service shall include but not limited to conduits, pull boxes and connecting all circuits need to operate the plaza lighting systems, cameras and receptacles during the duration of construction. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 14 – TEMPORARY IRRIGATION AND CONTROLLER - Payment for this lump sum bid item shall be made on a percent complete basis, based on lump sum amount for this item, and includes full compensation for temporary irrigation to plants and trees during construction. The temporary controller and irrigation system shall be maintained in a full operating condition to ensure survival of the existing plantings Contractor shall submit a plan on how temporary irrigation will be provided. Plan must include electrical requirements for temporary controller. Temporary controller needs to be protected from rain and vandalism throughout the project and located in an area accessible to City maintenance staff. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 60 – IRRIGATION SYSTEM - Payment for this lump sum bid item shall be made on a percent complete basis, based on lump sum amount for this item, and includes full compensation for a complete permanent irrigation system to plants and trees and lawn. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work as shown on the plans and called for in the special provisions.

BID ITEM 62 – INSTALL SOIL/ PLANTS IN FENCED PLANTING AREA - Measurement and payment for installation of soil and plants for planters adjacent to the granitecrete seating area will be made at the unit price bid per each in accordance with the Contract Documents including but not limited to all the necessary labor, tools, materials, and equipment as shown on the plans and called for in the special provisions and required to do all the work.

BID ITEM 67 – MISSION STYLE RAILING – Payment for this lump sum bid item shall be made on a percent complete basis, based on the lump sum amount for this item, and includes full compensation for a complete installation of mission style footings, posts, approximately 72’ of railing, and burying exposed conduit. Any existing exposed conduit must be buried as part of work completed per city standards. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 79 – SECURITY CAMERA POLE AND FOUNDATION - Payment for this lump sum bid item shall be made on a percent complete basis, based on lump sum amount for this item, and includes full compensation for a complete installation of foundation, camera poles, and installation of city provided camera. Camera must be fully functional to be considered complete. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 81 – ADOBE PRESERVATION - Payment for this lump sum bid item shall be made on a percent complete basis, based on lump sum amount for this item, and includes full compensation for a complete installation of plaster walls, window frame, insert, and surrounding drainage. All work shall comply with recommendations listed in Appendix D – Murray Adobe Recommendations and plan sheet A-911. Adobe work shall comply with the approved historical monitoring plan and monitored by a city provided historic architectural consultant. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 84 – STAGING AREA RESTORATION - Payment for this lump sum bid item shall be made on a percent complete basis, based on lump sum amount for this item, and includes full compensation for a complete repair or replace of damaged sod, concrete, asphalt, including but not limited to other materials within areas used for staging. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

BID ITEM 85 – PULL FIBER THROUGH EXISTING CONDUIT - Measurement and payment for pulling 1200 linear feet of fiber through existing conduit will be paid by linear feet. Fiber pull will begin at 879 Morro and continue to Palm. From Palm extend fiber pull to Broad. From Palm and Broad pull fiber to manhole within project limits at Broad and Monterey. This bid item shall include all the necessary labor, tools, materials, and equipment required to do all the work.

Add to Section 9-1.02A MEASUREMENT, General:

Contractor must submit a Schedule of Values for all lump sum bid items of work at the Preconstruction Meeting in compliance with Section 9-1.16B. Payment application pay items shall match the bid item sheet and subcategories to a pay item will not be allowed. Payment for Lump Sum items will be based on the percentage of acceptable work and the schedule of values for that item.

Add to Section 9-1.03 PAYMENT SCOPE:

Any item of work that does not have separate bid item is considered included in the project cost of work and no additional compensation will be paid.

DIVISION II GENERAL CONSTRUCTION

13 WATER POLLUTION CONTROL

Add to Section 13-7.02C STREET SWEEPING, Construction:

The Contractor must submit a street sweeping schedule for approval by the Engineer in compliance with the erosion control plan and Caltrans Section 13. Provide stabilized construction entrance per erosion control plan and remove all mud and other debris to the satisfaction of the City Engineer. Street sweeping must be done in a manner that street parking is available within 600 ft from affected addresses, unless approved by the Engineer.

Add to Section 13-7.02D Payment, STREET SWEEPING, Payment:

The lump sum item price for Street Sweeping shall include full compensation for furnishing all labor, materials, tools, equipment, personnel, “No Parking” notices, door hangers, and incidentals, and for doing all the work involved with Street Sweeping and no additional compensation therefor.

14 ENVIRONMENTAL STEWARDSHIP

Add to Section 14-2.03A ARCHAEOLOGICAL RESOURCES, General:

The Contractor shall comply with all requirements listed in Appendix E – Archeological Monitoring Plan. The City will hire an archeological monitor to inspect all ground disturbing activities.

Add to Section 14-2.04 HISTORIC STRUCTURES:

The Contractor shall comply with all recommendations listed in Appendix D – Murray Adobe Recommendations.

Add to Section 14-11.01 HAZARDOUS WASTE AND CONTAMINATION, GENERAL:

The Contractor shall comply with all requirements listed in Appendix H – Lead Testing Report. Contractor shall refer to Appendix G – Asbestos Testing Report for current conditions of existing restroom building.

15 EXISTING FACILITIES

Add Section 15-2.01 PAVEMENT REMOVAL:

The outline of the asphalt concrete pavement area to be removed must be cut on a neat line with a power driven diamond saw to a minimum depth of the existing asphalt concrete before removing all existing asphalt. As an alternative, the Contractor may use a grinding device such as a “zipper” to remove the AC patch area. All areas of removal must be cut as marked in the field and must be uniform in pattern (square, rectangle) and reviewed by the Engineer prior to removal.

Paving is not to be done without the inspection of the Engineer.

A mechanical tamp is to be used for compacting the base or subgrade and bottom lifts of the AC. A roller is to be used for the top lift of AC. Vibrating Plates are not allowed.

Additional AC patch repair areas and extents may be identified by the Engineer. Pavement repair locations must be field verified by the Engineer before the start of work. Pavement restoration must comply with Section 19, 39, and 77.

Add Section 15-3.01 ADOBE PROTECTION:

A qualified contractor with demonstrated experience working with Adobe structures shall be used for all work adjacent to and on the Murray Adobe.

Refer to Appendix D: Murray Adobe Recommendations for additional information.

DIVISION III EARTHWORK AND LANDSCAPE

20 LANDSCAPE AND IRRIGATION

Add to Section 20-1.01D(1) GENERAL, Quality Assurance - General:

1. Nursery Qualifications: Company specializing in growing and cultivating the plants with three years documented experience.

2. Installer Qualifications: Company specializing in installing and planting the plants with five years experience.

3. Testing Laboratory: Recognized laboratory for soil and plant disease analysis for ornamental horticulture, approved by the Inspector. Testing laboratory is to perform all work in accordance with the current methods of the Association of Official Agricultural Chemists.

Replace Section 20-1.02A MATERIALS, General with:

FINE COMPOST

1. Compost for soil amendment and preparation to be a well decomposed, stable, weed free organic matter source derived from waste materials including yard debris, wood wastes or other organic materials. Compost to have a dark brown color and a soil like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or is hot (120f) upon delivery or rewetting is not acceptable.
2. Compost facility and compost material must meet the following requirements:
3. Inspected and regulated by the local enforcement agency for CalRecycle. The past 3 inspection reports to be submitted verifying compliance with title14 requirements of the process to further reduce pathogens (pfrp), fecal coliform and salmonella testing and pathogen and epa, 40 cfr 503 regulations.
4. Certified through the uscc seal of testing assurance (sta) program (a compost testing and information disclosure program).
5. Analyzed by a laboratory that is enrolled in the us composting council’s compost analysis proficiency (cap) program and using approved test methods for the evaluation of composting and compost (tmecc).
6. Facility must provide proof of compost testing within 120 calendar days prior to delivery of material to project site.

Apply a four-inch lift of compost during cultivation.

Add to Section 20-1.02E Fertilizer:

AMENDMENTS AND MYCORRHIZAL FUNGI INOCULANT

Apply the following product to all new planting holes:

- Granular Tri-c myco Revival Plus applied at the manufacturer’s recommended rates based on plant material container size.

Add to Section 20-1.03A CONSTRUCTION, General:

TEST REPORTS

1. Soil tests shall be performed by a certified soils analyst by the state of California. Provide the following tests and submit the results to the City:

   - Existing Site Soil: Provide two separate tests at distinctly separate on-site locations, for agricultural suitability, fertility, particle size analysis; including recommendations for soil amendment, and fertilization during the maintenance period.
   - Import Soil: Submit test reports of representative sample(s) for approval prior to delivery and for every 100 yards delivered to the site. Test for agricultural suitability, fertility, particle size analysis; including recommendations for soil amendment, and fertilization during the maintenance period.

Replace 1st paragraph of Section 20-1.03C(2) Remove Existing Plants with:

Removal of existing plants includes removing their stumps and roots 2 inches or larger in diameter to a minimum depth of 24 inches below finished grade. Backfill holes resulting from stump removal to the finished grade with material obtained from adjacent areas.

Replace Section 20-1.03D Cultivation with:

All planting areas to be cultivated. The areas to be cultivated must extend 12 inches beyond the outer limit of each planting area.

Repeat cultivation until the soil is loose to a minimum depth of 12 inches. Soil clods must not be larger than 1 inch in maximum dimension after cultivation.

Remove native soil as needed prior to adding amendments, to allow for addition of compost amendment and mulch to achieve final grades.

Bring to the surface encountered rocks or debris during soil preparation work in planting areas. Remove rocks or debris larger than 1 inch in maximum dimension.

Place compost amendment and till to a depth of twelve inches.

Roll compact soil to achieve compaction of 85% of dry weight density in areas where plantings are located.

After natural settlement and light rolling, the complete work to conform strictly to the lines, grades and elevation indicated, under the contract without additional cost to the City.

Finish grading of landscape areas: fine grade all prepared planting areas to lines and grades shown on plans and as specified within this section. Finish grade to account for placement of specified mulch.

Top of finished mulch surface to be 1/2” below adjacent pedestrian or bicycle paths unless otherwise specified on civil grading plans.

Add to Section 20-1.04 PAYMENT:

Trees to be paid as each regardless of species per bid item list.

Add to Section 20-3.01B(2) GENERAL, Materials - Plants:

1. Any requests for plant material substitutions must be accompanied by documentation of inability to locate plants, including a list of plant nurseries contacted (minimum of three).
2. Substitutions may be denied if plant material is available at regional wholesale nurseries.
3. Submit photos of all trees for approval by Landscape Architect prior to purchase.

Replace Section 20-3.01B(7) GENERAL, Materials – Root Barrier with:

Root barrier must be an injection-molded or extruded modular panel made of high-density polypropylene or polyethylene plastic.

Each panel must:

1. Be at least: 1/8 inch
2. Have at least 4 molded root-deflecting vertical ribs from 0.5 to 0.8 inch wide and 6 to 8 inches apart
3. Have a locking strip or an integral male-female sliding lock designated to resist slippage between panels
4. Be at least 2 feet wide and 3 feet deep.

Add to Section 20-4.01A GENERAL, Summary:

Provide a one(1) year plant establishment and maintenance period for this project. The one year plant establishment and maintenance period will not begin until all other work of the project is complete and the project is accepted by the City. The City will issue a separate purchase order for the one year plant establishment and maintenance period directly to the contractor or subcontractor for this item of work. Payment of this lump sum bid item will be made on a quarterly basis (1/4 of the Lump Sum bid item price) upon acceptance of each maintenance quarter.

Add to Section 20-5.03A(1)(a) INERT GROUND COVERS AND MULCHES, General – General - Summary:

Mulch to be applied to all planting areas. Mulch in planting areas shall be 3” depth walk on bark – fir bark mulch, 1” pieces and smaller. Contractor shall provide sample for approval. Mulch shall be free of weed seeds or substances injurious to plant growth.

Add to Section 20-5.03A(3)(c) INERT GROUND COVERS AND MULCHES, General – Construction - Treatment of Soils:

Do not apply pre-emergent herbicide for weed control.
Contractor to carry out manual removal of weeds prior to planting.

ADD SECTION 20-5.03D(2)(C) GRANITECRETE PAVING, General, Summary:
Section Includes: Crushed aggregate blended with GraniteCrete admixture surfacing.

QUALITY ASSURANCE:

1. Installations 500 square feet and over up to 3,000 square feet must be a recommended installer at a minimum. Installations 3,000 square feet and over must be an Approved Installer.
2. An installer not approved, but with sufficient experience for the project as determined by Granitecrete, Inc., may fulfill this requirement by providing a current letter from Granitecrete, Inc. verifying their ability to complete a successful installation for this specific project. For assistance, contact GraniteCrete, Inc. at (800) 670-0849.
3. Porous Base Rock Testing:
   - Testing shall occur during installation at 1 ton increments of shipping for sieve conformance. Results shall be submitted prior to completion of the stone base installation.
     a. The stone field area shall have a permeable rate no less than 14” per hour. The testing shall be per Din 8035 Part 7, ASTM 2434 (constant head), or ASTM F2898 testing methods.
     b. In addition to the lab testing, after installation of any aggregate base cross-section, designed to conduct rainfall to the sub-soils and/or under-drain system, the finished aggregate base shall be tested, *in situ* for infiltration rate, using method ASTM F2898. The test shall be performed by a registered Geotechnical Engineer or certified agronomist. Testing shall be provided by an independent testing agency hired by the city and shall be scheduled by the contractor.

- The Contractor is responsible to meet this performance specification, before proceeding with installation, and shall bear the cost of the on-site testing and the cost of any additional work necessary to achieve compliance with the specification.

- All test results shall be logged and documented by the Owner's Technical Representative or Geotechnical Engineer. If at any time the processed stone base does not meet specifications, it shall be the Contractor's responsibility to restore, at his expense, the processed stone base to the required grade, cross-section and density.

- After the contractor has independently confirmed compliance with all the

above tolerances (planarity and elevation verified by a licensed surveyor and compaction, gradation, & permeability verified by Geotechnical Engineer, he shall notify the appropriate party and schedule a final inspection for approval. The contractor shall make available an orbital laser system to the Inspection Team for the inspection process.

- The compaction rate for porous base rock should be 88%. The compaction rate for non-porous base rock should be 95%.

MOCK-UP

1. Construct mockup of 10 square feet minimum of crushed aggregate blended with GraniteCrete admixture surfacing, including base course and edging, at location approved by Owner's Representative. Build mockup 5 days prior to installation. Intent of the mockup is to demonstrate surface finish, texture, color and standard of workmanship
2. Notify Owner's Representative 3 days in advance of mockup construction.
3. Allow Owner's Representative to view and obtain approval of mock-up before proceeding with rest of crushed aggregate blended with GraniteCrete admixture surfacing.
4. Approved mock-up may remain as first in place construction.

DELIVERY, STORAGE, AND HANDLING

Deliver all GraniteCrete Admixture materials in original, unopened packaging. Protect materials and aggregate from contamination with foreign matter. Store under waterproof cover and protect from dampness.

FIELD CONDITIONS

1. Do not install crushed aggregate blended with GraniteCrete admixture surfacing when sub-base is wet at saturated field capacity.
2. Do not install GraniteCrete materials when rain will fall on it within 48 hours after the install, or when the temperature will go below freezing within the next five days following installation.

PRODUCTS

Crushed aggregate blended with granitecrete admixture surfacing materials. Products listed below or City approved equal.

1. GraniteCrete, Inc. 419 Webster Street, Suite 202 Monterey, CA 93940
   Phone: (800) 670-0849; Fax: (800) 670-0849
   www.granitecrete.com
2. GraniteCrete admixture is an all-natural product and does not contain oils, polymers, resins, or enzymes.
3. Decomposed Granite (DG), crushed aggregate.

1. DG shall have a 3/8” maximum gradation, produced from naturally friable rock/granite with enough fines to produce a smooth walking surface. Materials should be free from clay lumps, organic matter, and deleterious material. Blends of coarse sand and rock dust are not acceptable.
2. Use a single supply source for the entire quantity required.
3. Gradation, in accordance with ASTM C136:
4. Color: Should have gold to yellow hues. To be selected by Landscape Architect from manufacturer’s standard colors.
5. Supplier: Vineyard Rock Products, Hollister, CA. - (831) 637-6443[Or equal].

4. Aggregate binder: Provide GraniteCrete Admixture. Color: To be selected from manufacturer’s full range of colors.
5. Base course material
   A. Class II Permeable Base Rock.
   B. Soft stone materials (i.e. sandstone, limestone and shale materials) are not suitable. Stone supplier shall certify that all supplied stone will be clean of this type of stone. All types of stone shall meet the following stability requirements.

TEST METHOD	CRITERIA
LA Abrasion (Calif. Test 211)	Not to exceed 40
Durability Index (Calif. Test 229)	Not less than 40

   In addition, if stone stability to water and vehicles is in question, Owner has the right to perform additional testing to ensure material shall adhere to requirements of Caltrans Section 68, as well as additional applicable ASTM tests.
   C. All testing fees shall be paid for by the Contractor.
   D. Permeable Stone: Stone base materials shall be washed, 100% fractured**,** by mechanical means, with elongated characters on each individual particle larger than 1/4”. Materials shall be devoid of mineral fines. All particles smaller than 1/4” shall be produced by manufactured means only. Rounded sands or aggregates are prohibited.
   E. Delivery Moisture Content: Processed stone shall contain 90% to 110% of the optimum moisture content to ensure that fines do not migrate in transit or during placement and to facilitate proper compaction. The contractor shall ensure that aggregate leaving the source plant meets this requirement. The contractor is required to apply water to the processed stone on site to attain and maintain this minimum moisture content.
6. Accessories
   A. Water: Free from contaminants that would discolor or be deleterious to crushed aggregate blended with GraniteCrete

admixture surfacing.

7. Installation: Do not use a vibratory plate to compact the GraniteCrete. Use a lawn roller filled with water to compact the GraniteCrete. Use a 36" drum roller or dual-drum roller in **static position** for driveways and larger installations. It is highly recommended to use a volumetric truck for driveways and larger installations; if possible, the use of a paver is highly recommended as well.

EXECUTION

EXAMINATION

1. Examine grading and subsoil conditions. Do not proceed until conditions are acceptable.

PREPARATION

1. Excavation: Excavate to depth required so edges of crushed aggregate blended with GraniteCrete admixture surfacing will match adjacent grades and have a maximum cross slope of 1 percent.
2. Sub-grade Preparation: Comply with Caltrans Standard Specifications Section 301-1 – “Sub-grade Preparation.”
3. Base Course Installation: Class II permeable base rock at 90% compaction.
4. Install per manufacturer’s recommended method.

Add to Section 20-5.05A SITE FURNISHINGS, General:

Provide manufacturer’s specifications and descriptive literature, installation instructions, and maintenance information for all site furnishing products.

Replace Section 20-5.05B SITE FURNISHING, Materials with:

1. **Bench**
   - Model per City Standard 9040 with two center armrests.
2. **Triple Stream Waste Receptacle**
   - Manufacturer: Big Belly
   - Product: HC5/SC.5/SC.5.5 Triple Station

   OPTIONS:

   Enclosed Hopper for Landfill Waste, Recycling and Compost
   Foot Pedal
   Graphic Wrap - Pattern to be provided by the city.
   Surface mount per manufacturer, epoxy set.
3. **Moveable Bistro Table – City Furnished and Installed**
   - Manufacturer: webstaurantstore.com
   - Product: Lancaster Table & Seating Alloy Series 36”x36” Dining Height Outdoor Table with 4 Industrial Café Chairs
   - Color: Copper
4. **Planter Pot**
   - Manufacturer: Tournesol Siteworks
   - Product: Florence Lightweight GFRC Planter
   - Type A: FCR-482424

- Type B: FCR-3024

5. **Bike Rack**
   - Manufacturer: Peak Racks
   - Product: 4-bike single sided bike rack
   - 16” wheel spacing
   - Color: Black Powdercoat
6. **Drinking Fountain**
   - Manufacturer: Most Dependable Fountains
   - Product: 10145 SMSSFA
   - Options: Safe stream bubbler
   - Options: Paver extension bolts for installation to concrete subslab below pavers
   - Color: Black
7. **String Light Post**
   - Manufacturer: lightpolesplus.com
   - Product: *HP-RTAAVS-12-4030-C-AB-FP.* 12ft tall x 4”base OD x 3” top OD x .125” thick, round tapered aluminum Arlen Style Anchor Base Light Pole
   - Color: Black powder coat
   - No light fixture for top mounting.
   - Pole should be ordered with hand hole cut out for receptacle per detail
   - Aluminum acorn post cap for 3” post, black powder coat finish available from www.signaturestreetscapes.com
8. **Cast Bronze Plaque**
   - 8” x 12” x ½” thick cast bronze plaque
   - Blind stud mount
   - Graphic file to be provided by owner
9. **Decorative Utility Lid Covers**
   - Manufacturer: Wundercovers
   - Product: Paver Style to fit bricks, Stainless Steel frame
   - Size: Per Plans
10. **Trench Drain Grate**
    - Manufacturer: Iron Age Designs
    - Product: Oblio 4” x 18” heel proof trench grate to fit NDS Spee-D Channel
    - Finish: Baked On Oil Finish

Replace Section 20-5.05C Construction with:

EXAMINATION

Verify proper installation of mounting surfaces, preinstalled anchor bolts, and other mounting devices. Verify site is ready to receive site furnishing items prior to delivery.

INSTALLATION

Install site furnishings in accordance with approved shop drawings and manufacturer's installation instructions.

DIVISION V SURFACINGS AND PAVEMENTS

39 ASPHALT CONCRETE

Add to Section 39-1.02B MATERIALS, Tack Coat:

All vertical edges to be paved against shall be tack coated. These include, but are not limited to, curb faces, gutter lips, swale edges, cross gutter edges, and asphalt concrete edges.

Add to Section 39-1.03 HOT MIX ASPHALT DESIGN REQUIREMENTS:

Mix voids to be targeted at 4.0%. TSR to be minimum 70 in accordance with CTM 371.

Add to Section 39-6 PAYMENT:

The contract price paid per square foot of HOT MIX ASPHALT OVER PCC PATCH PAVING shall include full compensation for all labor, materials (including hot mix asphalt), tools, equipment and incidentals for completing AC patch repairs to the length, depth, and width shown on the plans. Work includes, but is not limited to, saw-cutting, grinding, removal and disposal of existing pavement, compaction of underlaying materials, tack coat, and placement and compaction of asphalt.

DIVISION VIII MISCELLANEOUS CONSTRUCTION

73 CONCRETE CURBS AND SIDEWALKS

Add to Section 73-1.03 CONSTRUCTION:

You must meet with the Engineer to complete the following coordination tasks:

1. Before saw-cutting to agree on the limits of demolition and removal.
2. After formwork is set, to verify that grades meet those stated on the Plans.
3. Upon completion of new curb and sidewalk installation to verify finished grades.

You must give the City 24-hour notice for inspection of formwork before pouring concrete.

You are responsible for storing existing signs and boxes for reuse.

All exposed concrete must be mission colored.

DIVISION IX TRAFFIC CONTROL DEVICES

84 MARKINGS

Add to Section 84-2.03C Application of Stripes and Markings:

Preformed thermoplastic is only allowed with the approval of the Engineer.

DIVISION X ELECTICAL WORK

86 ELECTRICAL SYSTEMS

Add to Section 86-1.07 SCHEDULING OF WORK:

Plaza power and lighting must not be disrupted for more than 8 hours or temporary generator must be provided. Plaza must maintain lighting throughout the project. After the temporary electrical service has been set, if service load allows, the contractor may use the temporary service for construction. All connection points must be locked off when not in use for construction.

See Appendix F for PG&E Handout Package for additional information.

DIVISION XII BUILDING CONSTRUCTION

99 BUILDING CONSTRUCTION

Add Section 99-1.01 GENERAL:

Fiber pulled through existing conduit must be an all-in-one 12-strand fiber optic cable. Fiber pull should run from the exterior conduit located at 879 Morro and will extend to Palm. Palm fiber shall extend to Broad and from Broad to Monterey at the manhole within the project site. Fiber pulled onto the project site to the restroom and kiosk shall be a minimum of 6-strand fiber optic cable.

See Appendix B for Technical Specifications for the project.
See Appendix C for City Communication Cabling Specifications for the project.
See Appendix I for the Geotechnical Engineering Report prepared for the project.
See Appendix K for Photos of Existing Restroom Chase for additional information.

DIVISION XIII APPENDICES

Add Section 100-1.01 APPENDICES:

Refer to Appendix A: Form of Agreement
Refer to Appendix B: Supplemental Technical Specifications
Refer to Appendix C: City Communications Cabling Specifications
Refer to Appendix D: Murray Adobe Recommendations
Refer to Appendix E: Archaeological Monitoring Plan
Refer to Appendix F: PG&E Handout Package
Refer to Appendix G: Asbestos Testing Report
Refer to Appendix H: Lead Testing Report
Refer to Appendix I: Geotechnical Engineering Report
Refer to Appendix J: Construction Staging Plan
Refer to Appendix K: Photos of Existing Restroom Chase

APPENDIX A - FORM OF AGREEMENT

THIS AGREEMENT, made on _____, by and between the City of San Luis Obispo, a municipal corporation and charter city, San Luis Obispo County, California (hereinafter called the Owner) and COMPANY NAME (hereinafter called the Contractor).

WITNESSETH:

That the Owner and the Contractor for the consideration stated herein agree as follows:

ARTICLE 1, SCOPE OF WORK: The Contractor shall perform everything required to be performed, shall provide and furnish all of the labor, materials, necessary tools, expendable equipment, and all utility and transportation services required to complete all the work of construction of

MISSION PLAZA ENHANCEMENTS, SPEC NO. 91439-01

in strict compliance with the plans and specifications therefor, including any and all Addenda, adopted by the Owner, in strict compliance with the Contract Documents hereinafter enumerated.

It is agreed that said labor, materials, tools, equipment, and services shall be furnished and said work performed and completed under the direction and supervision and subject to the approval of the Owner or its authorized representatives.

ARTICLE II, CONTRACT PRICE: The Owner shall pay the Contractor as full consideration for the faithful performance of this Contract, subject to any additions or deductions as provided in the Contract Documents, the contract prices as follows:

Item No.	Item	Unit of Measure	Estimated Quantity	Item Price (in figures)	Total (in figures)
1.					
2.					
3.					

BID TOTAL: $ .00

Payments are to be made to the Contractor in compliance with and subject to the provisions embodied in the documents made a part of this Contract.

Should any dispute arise respecting the true value of any work omitted, or of any extra work which the Contractor may be required to do, or respecting the size of any payment to the Contractor, during the performance of this Contract, said dispute shall be decided by the Owner and its decision shall be final, and conclusive.

ARTICLE III, COMPONENT PARTS OF THIS CONTRACT: The Contract consists of the following documents, all of which are as fully a part thereof as if herein set out in full, and if not attached, as if hereto attached:

1. Notice to Bidders and Information for Bidders
2. Standard Specifications and Engineering Standards
3. Special Provisions, any Addenda, Plans and Contract Change Orders
4. Caltrans Standard Specifications and Standard Plans 2015
5. Accepted Bid and Bid Bond
6. List of Subcontractors
7. Public Contract Code Sections 10285.1 Statement
8. Public Contract Code Section 10162 Questionnaire
9. Public Contract Code Section 10232 Statement
10. Labor Code Section 1725.5 Statements
11. Bidder Acknowledgements
12. Qualifications
13. Non-collusion Declaration
14. Agreement and Bonds
15. Insurance Requirements and Forms

ARTICLE IV INDEMNIFICATION: The Contractor shall indemnify, defend with legal counsel approved by City, and hold harmless City, its officers, officials, employees and volunteers from and against all liability, loss, damage, expense, cost (including without limitation reasonable legal counsel fees, expert fees and all other costs and fees of litigation) of every nature arising out of or in connection with the Contractor's negligence, recklessness or willful misconduct in the performance of work hereunder or its failure to comply with any of its obligations contained in this Agreement, except such loss or damage which is caused by the sole or active negligence or willful misconduct of the City. Should conflict of interest principles preclude a single legal counsel from representing both the City and the Contractor, or should the City otherwise find the Contractor's legal counsel unacceptable, then the Contractor shall reimburse the City its costs of defense, including without limitation reasonable legal counsel fees, expert fees and all other costs and fees of litigation. The Contractor shall promptly pay any final judgment rendered against the City (and its officers, officials, employees and volunteers) with respect to claims determined by a trier of fact to have been the result of the Contractor's negligent, reckless or wrongful performance. It is expressly understood and agreed that the foregoing provisions are intended to be as broad and inclusive as is permitted by the law of the State of California and will survive termination of this Agreement.

The Contractor obligations under this section apply regardless of whether such claim, charge, damage, demand, action, proceeding, loss, stop notice, cost, expense, judgment, civil fine or penalty, or liability was caused in part or contributed to by an Indemnitee. However, without affecting the rights of the City under any provision of this agreement, the Contractor shall not be required to indemnify and hold harmless the City for liability attributable to the active negligence of City, provided such active negligence is determined by agreement between the parties or by the findings of a court of competent

jurisdiction. In instances where the City is shown to have been actively negligent and where the City's active negligence accounts for only a percentage of the liability involved, the obligation of the Contractor will be for that entire portion or percentage of liability not attributable to the active negligence of the City.

ARTICLE V. It is further expressly agreed by and between the parties hereto that should there be any conflict between the terms of this instrument and the bid of said Contractor, then this instrument shall control and nothing herein shall be considered as an acceptance of the said terms of said bid conflicting herewith.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands this year and date first above written.

CITY OF SAN LUIS OBISPO
A Municipal Corporation

_____
Whitney McDonald, City Manager

APPROVED AS TO FORM

_____
J. Christine Dietrick
City Attorney

CONTRACTOR:

Name of Company

By:_____
Name of CAO/President
Its: CAO/PRESIDENT

(2nd signature required if Corporation):

By:_____
Name of Corporate Officer

Its: _____

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Section 01 3300
Submittals

PART 1 GENERAL

1.01 Submittals

A. Submittals shall be provided in accordance with City of San Luis Obispo Standard Specification Section 5-1.23.

PART 2 - PRODUCTS

PART 3 - EXECUTION

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Section 01 4000
Quality Control

PART 1 - GENERAL

1.01 Quality Control

A. Quality Control shall be completed in accordance with City of San Luis Obispo Engineering Standards and Standard Specifications and Caltrans Standard Specifications. See Section 6 for Control of Work and Appendix J for the City's Quality Assurance Program.

PART 2 - PRODUCTS

PART 3 - EXECUTION

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Section 03 0516
Underslab Vapor Barrier

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sheet vapor barrier under new concrete slabs on grade.

1.02 RELATED REQUIREMENTS

A. Section 02 4119 - Selective Structure Demolition

B. Section 03 1000 - Concrete Forming and Accessories: Forms and accessories for formwork.

C. Section 03 2000 - Concrete Reinforcing.

D. Section 03 3000 - Cast-in-Place Concrete: Preparation of subgrade, granular fill, placement of concrete.

1.03 REFERENCE STANDARDS

A. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2011.

B. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2011.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Submit manufacturers' data on manufactured products.
   1. Manufacturer’s samples and literature.
   2. Manufacturer’s installation instructions for placement, seaming, penetration prevention and repair, and perimeter seal per ASTM E1643.
   3. Summary of test results per paragraph 9.3 of ASTM E1745.
   4. Provide third party documentation that all testing was performed on a single production roll per ASTM E1745 Section 8.1

C. Test Data: Submit report of tests showing compliance with specified requirements.

D. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent construction.

PART 2 PRODUCTS

2.01 MATERIALS

A. Underslab Vapor Barrier:
   1. Water Vapor Permeance: Not more than 0.010 perms, maximum [grains/(ft2 ? hr ? inHg)] as tested in accordance with mandatory conditioning tests per ASTM E1745 Section 7.1 (7.1.1-7.1.5).
   2. Complying with ASTM E1745 Class A.
   3. Thickness: 15 mils.
   4. Manfacturers:
      a. Stego Industries LLC; Stego Wrap Vapor Barrier (15-mil) Basis of Design: www.stegoindustries.com.
      b. Perminator 15 mils, polyolefin by W.R. Meadows.
      c. Moistop Ultra 15 mils, polyolefin by Fortifiber
      d. VaporBlock 15 mils, polyethylene by Raven Industries.

B. Accessory Products: Vapor barrier manufacturer's recommended tapes, adhesive, mastic, etc., for sealing seams and penetrations in vapor barrier and forming/screeding accessories to prevent undue penetrations of the membrane.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surface over which vapor barrier is to be installed is complete and ready before proceeding with installation of vapor barrier.

3.02 INSTALLATION

A. Install vapor barrier in accordance with manufacturer's instructions and ASTM E1643.
   1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement and face laps away from the expected direction of the placement whenever possible.
   2. Extend vapor barrier to the perimeter of the slab. If practicable, terminate it at the top of the slab, otherwise (a) at a point acceptable to the structural engineer or (b) where obstructed by impediments, such as dowels, water stops, or any other site condition requiring early termination of the vapor barrier. At the point of termination, seal vapor barrier to the foundation wall, grade beam or slab itself.
   3. Apply seam tape/textured tape/double-sided tape to a clean and dry vapor barrier.
   4. Seal all penetrations (including pipes) per manufacturer’s instructions.
   5. Avoid the use of stakes driven through vapor barrier by utilizing screed and forming systems that will not leave punctures in the vapor barrier.
   6. Repair damaged areas with vapor barrier material of similar (or better) permeance, puncture and tensile.

B. Lap joints minimum 6 inches and seal with manufacturer's tape.

C. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions.

D. No penetration of vapor barrier is allowed except for reinforcing steel and permanent utilities.

E. Repair damaged vapor retarder before covering with other materials.

F. Where installing in existing building tie into existing vapor barrier if possible.

END OF SECTION

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Section 03 1000
Concrete Forming and Accessories

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Formwork for cast-in-place concrete, with shoring, bracing and anchorage.

B. Installation of items to be embedded in concrete, such as anchor bolts, inserts, embeds, and sleeves.

C. Openings for other work.

D. Form accessories.

E. Form stripping.

1.02 RELATED REQUIREMENTS

A. Drawings and general provisions of the Contract, Including General and Supplementary Conditions Division 01 Specification Sections, apply to this Section

B. Section 03 2000 - Concrete Reinforcing.

C. Section 03 3000 - Cast-in-Place Concrete.

D. Section 04 2000 - Unit Masonry: Reinforcement for masonry.

E. Section 05 1200 - Structural Steel Framing: Placement of embedded steel anchors and plates in cast-in-place concrete.

1.03 REFERENCE STANDARDS

A. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials; 2010.

B. ACI 301 - Specifications for Concrete Construction; 2020.

C. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2011.

D. ACI 347R - Guide to Formwork for Concrete; 2014.

E. PS 1 - Structural Plywood; 2009.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Provide data on void form materials and installation requirements.

C. Shop Drawings: Indicate pertinent dimensions, materials, bracing, and arrangement of joints and ties. Review and approval will not include form strength and adequacy.

D. Keep an accurate record of the dates of removal of forms, form shores and reshores, and furnish copies to the SEOR.

1.05 QUALITY ASSURANCE

A. Comply with the pertinent provisions of 01 40 00 "Quality Requirements."

B. Construct forms according to ACI 347, "Guide to Formwork for Concrete," and conforming to tolerances of ACI 117, "Standard Specifications for Tolerances for Concrete Construction and Materials"

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with pertinent provisions of Division 01 Section 01 60 00 "Product Requirements," delivering materials in a timely manner to ensure uninterrupted progress.

B. Store prefabricated forms off ground in ventilated and protected manner to prevent deterioration from moisture.

PART 2 PRODUCTS

2.01 FORMWORK - GENERAL

A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.

B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions.

C. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.

D. Comply with relevant portions of ACI 347R, ACI 301, and ACI 318.

2.02 WOOD FORM MATERIALS

A. Softwood Plywood: PS 1, B-B Medium or High Density Concrete Form Overlay, Class I, grade marked, not mill oiled.

B. Lumber: DF species; WCLIB Construction grade or better, WWPA No. 1 grade or better; with grade stamp clearly visible.

2.03 REMOVABLE PREFABRICATED FORMS

A. Void Forms: Moisture resistant treated paper faces, biodegradable, structurally sufficient to support weight of wet concrete mix until initial set; 2 inches thick.

2.04 FORMWORK ACCESSORIES

A. Form ties: Prefabricated rod, flat band, wire, internally threaded disconnecting ty pe, or equal, not leaving meatl within 1-1/2" of concrete surface.

B. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.
   1. Do not use materials containing diesel oil or petroleum-based compounds.

C. Embedded Anchor Shapes, Plates, Angles and Bars: As specified in Section 05 1200.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

3.02 EARTH FORMS

A. Hand trim sides and bottom of earth forms. Remove loose soil prior to placing concrete. Sides of all footings and grade beams shall be formed, unless the member detail provies at least 3" clear cover to reinforcement and indicates the member is cast against earth. Remove formwork prior to backfilling operations.

3.03 ERECTION - FORMWORK

A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.

B. Rigidly construct forms to prevent mortar leekage, sagging, displacement or bulging between studs. Use clean, sound, approved form material, coated with specified materials only, not oil. Provide backing on all plywood joints.

C. Coat forms with the specified resin coating, not form oil. Construct forms to exact shapes, sizes, lines and dimensions required to obtain level, plumb, and straight surfaces. Provide openings, offsets, keys, reglets, anchorages, recesses, moldings, chamfers, blocking, screeds, drips, bulkheads, and all other required features. Make forms easily removable without hammering or prying against concrete. Space forms apart with metal spreaders. Construct forms to accurate alignment, locations and grades, and provide against sagging, leakage of concrete mortar, or displacement occuring during and after placing of concrete. Coordinate installation of inserts and anchors in forms according to shop drawings and requirements for work of other sections.

D. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.

E. Corners and angles: Provide 3/4" x 3/4" beveled chamfer strips for all exposed concrete corners and angles square unless indicated otherwise.

F. Reglets and Rebates: Form required reglets and rebates to receive frames, flashing and other equipment. Obtain required dimnesions, details, and precise positions for work to be installed under other sections and form concrete accordingly.

G. Form Joints: Align joints and make watertight. Keep form joints to a minimum. Fill joints to produce smooth surfaces, intersections, and arises. Use polymer foam or equivalent fillers at joints and where forms abut or overlap existing concrete to prevent leakage of mortar.

H. Recesses, Drips, and Profiles: Provide smooth milled wood or pre-formed rubber or plastic shapes of types shown and required.

I. Cleanouts and Cleaning: Provide Temorary openings in all wall forms and other vertical forms for cleaning and inspection. Clean forms and surfaces to receive concrete prior to placing.

J. Re-Use: Clean and Recondition form material before re-use.

3.04 APPLICATION - FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.

C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS

A. All necessary pipe sleeves, anchors, or other required inserts shall be accurately installed as part of the work of other sections, according to Specification Section 03 30 00, Section 1.3.B for sumittal requirements related to this scope.

B. Obtain approval before framing openings in structural members that are not indicated on drawings.

C. Provide formed openings where required for items to be embedded in passing through concrete work.

D. Locate and set in place items that will be cast directly into concrete.

E. Conduits or pipes:
   1. Locate so as not to reduce strength of the concrete
   2. Do not place pipes, other than conduits, in a slab 4-1/2" thick or less in any case. Conduit buried in a concrete slab shall not have an outside dimension greater than 1/3 the slab

thickness nor be placed below the bottom reinforcing or over the top reinf.

3. Sleeves: Pipe sleeves may pass through the slab or walls if not exposed to rusting or other deterioration and are of uncouted or galvanized iron or steel. Provide sleeves of diameter large enough to pass any hub or coupling on pipe, including any insulation.
4. Conduits may be embedded in walls only if the outside diameter does not exceed 1/3 the wall thickness, are spaced no closer than 3 diameters on centers and not impair the strength of the structure.

F. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.

G. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.

H. Install waterstops in accordance with manufacturer's instructions, so they are continuous without displacing reinforcement. Heat seal joints so they are watertight.

I. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.

J. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

3.06 FORM CLEANING

A. Clean forms as erection proceeds, to remove foreign matter within forms.

B. Clean formed cavities of debris prior to placing concrete.

3.07 FORMWORK TOLERANCES

A. Construct formwork to maintain tolerances required by ACI 117, unless otherwise indicated.

B. Deflection: Limit Deflection of forming surfaces from concrete pressure to L/240.

C. Finish Lines: Position formwork to maintain hardened concrete finish lines within following permissible deviations.

1. Variation from Plumb:
   - In 10'-0" 1/4 inch
   - In any story or 20'-0" 3/8 inch
   - In 40'-0" or more 3/4 inch
2. Variation from Level or Grades Indicated
   - In 10'-0" 1/4 inch
   - In any story or 20'-0" 3/8 inch
   - In 40'-0" or more 3/4 inch
3. Cross-Sectional Dimensions
   a. Minus 1/4 inch
   b. Plus 1/2 inch

3.08 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.

B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.

3.09 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and all superimposed loads as determined by testing field cured cylinders, but not sooner than specified in ACI 347 Section 3.6.2.3. Load supporting forms may be removed when concrete has attained 75 percent of required 28 day compressive strength, but no sooner than 3 days, provided construction is reshored.
   1. Reshore structural members as specified per ACI 347.
   2. Avoid damage to concrete surfaces during removal.
   3. Remove formwork in same sequence as concrete placement to achieve similar concrete surface coloration.

END OF SECTION

Section 03 2000
Concrete Reinforcing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Reinforcing Steel for Cast-in-Place Concrete Foundations

B. Reinforcing Steel for Cast-in-Place Concrete Slabs-on-Grade

C. Supports and accessories for steel reinforcement.

1.02 RELATED REQUIREMENTS

A. Comply with pertinent provisions of Division 01, "General Requirements".

B. Section 03 1000 - Concrete Forming and Accessories.

C. Section 03 3000 - Cast-in-Place Concrete.

D. Section 04 2000 - Unit Masonry: Reinforcement for masonry.

E. Section 05 1200 - Structural Metal Framing

1.03 REFERENCE STANDARDS

A. ACI 301 - Specifications for Concrete Construction; 2020.

B. ACI 315 - Manual of Standard practice for Detailing Reinforced Concrete Structures; 2011.

C. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2011.

D. ACI SP-66 - ACI Detailing Manual; 2004.

E. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.

F. ASTM A706/A706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement; 2014.

G. ASTM A775/A775M - Standard Specification for Epoxy-Coated Steel Reinforcing Bars; 2007b (Reapproved 2014).

H. ASTM D3963/D3963M - Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Reinforcing Steel Bars; 2001 (Reapproved 2007).

I. AWS D1.4/D1.4M - Structural Welding Code - Reinforcing Steel; 2011.

J. CRSI (DA4) - Manual of Standard Practice; 2009.

K. CRSI (P1) - Placing Reinforcing Bars; 2011.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Shop Drawings: Comply with requirements of ACI SP-66. Include the following:
1. complete bar layout
2. representative sections
3. details for congested conditions
4. proposed layout where vertical and horizontal bars intersect
5. bar schedules
6. typical bending diagrams and offsets
7. shapes of bent bars
8. spacing of bars
9. splice lengths and locations

C. Where welding is proposed:
1. Detail welding to conform to AWS D1.4
2. Submit Copies of welding operator's certificate
3. Where reinforcement complying with ASTM A615 is to be welded, chemical tests shall be performed to determine the weldability in accordance with Section 3.5.2 of ACI 318-11.
4. Weld Procedure Specifications:
   a. All WPS's shall be submitted to the Structural Engineer of Record (SEOR) for review and approval prior to use.
   b. For WPS's that have been qualified by test, the supporting Procedure Qualification Record (PQR) shall be submitted to teh SEOR for review and approval.
   c. Included shall be WPS for repair welds

D. Reports: Submit certified copies of mill test report of reinforcement materials analysis.

1.05 QUALITY ASSURANCE

A. Comply with the pertinent provisions of 01 40 00 "Quality Requirements."

B. Perform work of this section in accordance with ACI 301.

C. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.4/D1.4M and no more than 12 months before start of scheduled welding work.

1.06 DELIVERY STORAGE AND HANDLING

A. Comply with pertinent provisions of Division 01 Section 01 60 00 "Product Requirements," delivering materials in a timely manner to ensure uninterrupted progress.

B. Bundle bars, tag with identification, and transport and store so as not to damage any material. Use metal tags inicating size, length and other marking shown on placement drawings. Maintain tags after bundles are broken

C. Avoid exposure to dirt, moisture or conditions harmful to reinf.

1.07 EXTRA MATERIAL

A. Provide an allowance of an additional 10% of the total reinf. steel tonnage in addition to the quantities shown on the drawings. This additional steel shall be installed in sizes and locations as directed by the structural engineer.

PART 2 PRODUCTS

2.01 REINFORCEMENT

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
   1. Deformed billet-steel bars.
   2. Unfinished.
   3. Only to be used for conditions where bars will not be welded.

B. Reinforcing Steel: ASTM A706/A706M, Grade 60 (60,000 psi) deformed low-alloy steel bars.
   1. Unfinished.
   2. Used in all cases where welding of bars is required.

C. Reinforcement Accessories:
   1. Tie Wire: ASTM A82, Annealed copper bearing steel, minimum 16 gage, 0.0508 inch.
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement. Standard manufactured products shall conform to the Concrete Reinforcing Institute, "Manual of Stand Practice," latest edition.
   3. Use dense precast concrete supports with embedded wire ties for reinforcement placed on grade. Elsewhere, use wire bar supports.

D. Welding electrodes: AWS D1.4, Table 5.1 and 5.3, low hydrogen electrodes, E8018 for Grade 60 Steel.

2.02 Re-bar Splicing:

A. Coupler Systems: Mechanical devices for splicing reinforcing bars conforming to the requirements of ACI 318-11 Section 12.14.3; capable of developing 1.25fy of the steel reinforcing yield strength in tension and compression. For reinf.

   All mechanical splices in Special Structural Walls, Special Moment Frames and Concrete Diaphragms shall be Type 2 conforming to the requirements of ACI 318-11 Section 21.1.6 & 21.11.7.4, capable of developing 1.25fy of the steel reinforcing yield strength in tension and compression and develop the specified tensil strength of the spliced bar.
   1. Products:
      a. Dayton Superior Corporation; Bar Lock Coupler System: www.daytonsuperior.com (UES-ER 319).
      b. Lenton Lock Couplers (IAPMO-ES 129.

B. Dowel Bar Splicer with Dowel-Ins: Mechanical devices for connecting dowels; capable of developing full steel reinforcing design strength in tension and compression.

1. Products:
    a. Dayton Superior Corporation; UES-ER 319: www.daytonsuperior.com/#sle.
    b. Lenton Form Savers (IAPMO-ES 129).

2.03 FABRICATION

A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice.

B. Bending and Forming
    1. Fabricate bars of the indicated sizes and bend and form to required shapes and lengths by methods not injurous to materials
    2. Do not heat reinforcement for bending
    3. Bend bars No. 6 size and larger in the shop only.
    4. Bars with unscheduled kinks or bends are subject to rejection.
    5. Use only tested and approved bar materials

C. Welding: Use only ASTM A706 steel where welding is proposed. Perform welding where shown or approved, by the direct electric arc process in accordance with AWS D1.4 using specified low hydrogen electrodes. Preheat 6" each side of joint. Protect joints from drafts during the cooling process; accelerated cooling is prohibited. Do not tack weld bars. Welding shall not be done on or within two bar diameters of any bent portion of a bar that has been bent cold. Welding of crossing bars shall not be permitted for assembly reinforcement unless authorized by the SEOR. Clean metal surfaces to be welded of all loose scale and foreign material. C
    1. Use only ASTM A706 steel where welding is proposed.
        a. Perform welding where shown or approved, by the direct electric arc process in accordance with AWS D1.4 using specified low hydrogen electrodes.
        b. Preheat 6" each side of joint.
        c. Protect joints from drafts during the cooling process; accelerated cooling is prohibited.
        d. Do not tack weld bars.
        e. Welding shall not be done on or within two bar diameters of any bent portion of a bar that has been bent cold.
        f. Welding of crossing bars shall not be permitted for assembly reinforcement unless authorized by the SEOR.
        g. Clean metal surfaces to be welded of all loose scale and foreign material.
        h. Clean welds each time electrode is changed and chip burned edges before placing welds
        i. When wire brushed, the completed welds must exhibit uniform section, smooth welded metal, feather edges without undercuts or overlays, freedom from porosity and clinkers, and good fusion and penetration to the base metal.
        j. Cut out welds or parts of welds found defective with chisel and replace with proper welding
        k. Fillet welds may be considered prequalified per AWS D1.4, section 6.1.2.
        l. Other welds are to be qualified per AWS D1.4 Section 6.1.2.
    2. Where ASTM A615 steel is to be used or occurs in existing elements and is to be welded
        a. Complete chemical analyses shall be performed to determine chemical composition and, for a new bar, provided in the mill certifications to determine weldability in accordance with ACI 318 Section 3.5.2 with modifications per AWS D1.4.
        b. The carbon equivalency (CE) shall be clearly defined and bars with a CE above 0.75 shall not be welded.

c. Welding Procedure Specifications and supporting Procedure Qualification Records with required testing per AWS D1.4, shall be provided for review and approval prior to welding.
d. These WPS's and PQR's shall be specific to the CE as determined above, and shall, in addition to the other AWS requirement, include minimum and maximum preheat and interpass temperatures that are specified to the CE. This preheat and interpass temperature shall be strictly enforced in the field.
e. If separate shipments of bars vary the weldability, the process listed in the above requirements shall be repeated for these new bars.

D. Locate reinforcing splices not indicated on drawings at point of minimum stress. Review locations of splices with SEOR.

PART 3 EXECUTION

3.01 PLACEMENT

A. Before placing bars, and again before concrete is placed, clean bars of loose rust and/or mill scale, dirt, oil, or any other coating that may be deleterious or could reduce bond with the concrete.

B. Securing in place:
1. Accurately place bars and wire tie in precise position where bars cross.
2. Bend ends of wire ties away from the forms.
3. Wire tie bars to the corners of ties and stirrups.
4. Support bars according to the Concrete Reinforcing Steel Institute (CRSI) "Placing Reinforcing Bars," using approved accessories and chairs.
5. Place precast concrete cubes with embedded wire ties to supporting reinforcing steel bars in concrete placed on grade and in footings.
6. Take adequate precautions to ensure that reinforcing bar position and spacing is maintained during concrete placement.

C. Do not displace or damage vapor barrier.

D. Maintain concrete cover around reinforcing as follows:
1. Refer to Drawings for cover requirements

E. Splices:
1. Do not splice reinforcing bars at the points of maximum stress except where indicated.
2. Lap splices as shown or required to develop the full strength or stress of the bars.
3. Stagger splices in horizontal wall bars at least 48" longitudinally in alternate bars and opposite faces.

F. Field Welding: As specified for fabrication.

3.02 FIELD QUALITY CONTROL

A. Comply with all pertinent provisions of Division 01 Section 01 40 00 "Quality Requirements".

B. Supervision: Perform Work to this Section under supervision of a capable superintendent.

C. An independent testing agency, as specified in Section 01 40 00, shall inspect installed reinforcement for conformance to contract documents before concrete placement.

D. Where welding is done in the shop or at the site, perform welding of reinforcing bars under inspection of the Testing Laboratory Welding Inspector in accordance with Chapter 17 of the CBC. The welding inspector shall make a systematic record of all welds:
   1. Identification marks of welders;
   2. List of defective welds;
   3. Manner of correction of defects.

   The welding inspector shall check the material, equipment details of construction and procedures as well as the welds. The inspector shall check the ability of the welder. The welding inspector shall furnish the structural eingeer and the enforcement agency with a verified report that the welding which is required to be inspected is proper and has been done in confromity with the approved plans and specifications. The welding inspector shall use all means necessary to determine the quality of the weld. The inspector may use gamma ray, magnaflux, trepanning, sonics or any other aid to visual inspection, which the inspector may deem necessary to assure the adequacy of the welding.

END OF SECTION

Section 03 3000
Cast-in-Place Concrete

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Section Includes cast-in-place concrete, concrete materials, mixture design, placement procedures and finishes for the following:

B. Floors and slabs on grade.

C. Joint devices associated with concrete work.

D. Concrete curing.

E. Concrete foundations

F. Concrete footings

G. Concrete walls

1.02 RELATED REQUIREMENTS

A. Drawings and general provisions of the Contract, Including General and Supplementary Conditions Division 01 Specification Sections, apply to this Section

B. Section 03 1000 - Concrete Forming and Accessories: Forms and accessories for formwork.

C. Section 03 2000 - Concrete Reinforcing.

D. Section 07 9200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

1.03 REFERENCE STANDARDS

A. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials; 2010.

B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).

C. ACI 301 - Specifications for Concrete Construction; 2020.

D. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015.

E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000.

F. ACI 305R - Hot Weather Concreting; 2010.

G. ACI 306R - Cold Weather Concreting; 2010.

H. ACI 308R - Guide to Curing Concrete; 2001 (Reapproved 2008).

I. ACI 309R - Guide for Consolidation of Concrete

J. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2011.

K. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.

L. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement; 2015.

M. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

N. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2015a.

O. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2015.

P. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens); 2013.

Q. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2012.

R. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2007.

S. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a.

T. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2013.

U. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2015.

V. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2014.

W. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Comply with the pertinent provisions of Section 01 60 00 " Product Requirements." Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
   1. Material Certificates: For Each of the following, signed by the manufacturer(s)

a. Cementitious materials
b. Admixtures
c. Curing compounds
d. Non-shrink grout

2. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with the requirements:
   a. Aggregates

C. Mix Design: Submit proposed concrete mix design(s). For each concrete mixture:
   1. Inidcate Intended Locations for use
   2. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
   3. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.
      a. Mixes shall be based on existing approved compressive strength test data for concrete mixes in accordance with ACI 318 Section 5.3.1.1 and requirements below:
         1) Strength Requirements: Design mixes for structural concrete for minimum 28-day compressive strengths required by Drawings and Specifications. The trial batch strength for each mix shall exceed indicated or specified strength by 750 psi or a lesser amount based on the standard deviations of strength test records according to ACI 318.
         2) Normal Weight Concrete Mix Design: Design all mixes for workability and durability of concrete. Control the mixes in accordance with the CBC, ACI 318 Section 5.2, ACI 211.1, Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete, and Chapter 4, ACI 318, Building Code Requirements for Reinforced Concrete. Make adjustments in cement content required for concrete strengths at Contractor's expense and do not exceed 0.50 (or as indicated on concrete general notes of approved plans) absolute water-cement or cement plus fly ash ratio by weight. Do not use calcium chloride or any admix containing such material. Admixtures containing a material releasing nitrates in solution are limited to 0.06 percent by weight for the chloride ion.
         3) Maximum Aggregate Sizes: Not exceeding 3/4 of minimum clear space between bars and
            between bars and forms, nor larger than 1/5 of least dimensions between the forms.
            Design the mixes with 1" maximum size, except maximum 1-1/2" size for foundations as submitted by the contractor and approved by the Architect and Structural Engineer of Record.
         4) Pumped Concrete: Design Concrete mixes specifically for pump placing with dry loose volume of fine aggregates not more than 47 percent of total aggregates.
         5) ACI 318 Section 5.3.1.1 with test records. Where a testing laboratory acceptable to the enforcement agency has records of compressive strength tests, a standard deviation shall be established. Test records from which a standard deviation is calculated shall:
            (a) Represent materials, quality control procedures and conditions similar to those expected, and changes in materials and proportions within the test records shall not have been more restricted than those for proposed work.
            (b) Represent concrete produced to meet a specified strength or strengths f’ c within 1,000 psi of that specified for proposed work.

(c) Must consist of at least 30 consecutive tests or two groups of consecutive tests totaling at least 30 tests as defined in ACI 318 Section 5.3.1.1, except as provided in ACI 318 Section 5.3.1.2.

4. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

D. Samples for Pigment Color Selection: Submit manufacturer's complete sample chip set, including pigment number and required dosage rate for each color.

E. Verification Samples: Submit sample chips of specified colors indicating pigment numbers and required dosage rates, for subsequent comparison to installed concrete.

F. Test Reports: Submit report for each test or series of tests specified.

G. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.

H. Delivery Tickets: With each transit truck provide delivery ticket, signed by an authorized representative from the batch plan, containing all information required by ASTM C94, as well as time batched, type of brand of cement, cement content, maximum size of aggregate and total water content.

1.05 QUALITY ASSURANCE

A. Comply with the pertinent provisions of 01 40 00 "Quality Requirements."

B. Qualifications
1. Installer Qualifications: And experienced installer who has completed concrete work similar in material, design, and extendt to that indicated for this project and whose work has resulted in construction with a record of successful in-service performance. Adequate numbers of trained and experienced personnell shall be used.
2. Manufacturer Qualifications: The production facility supplying hydraulic cement concrete shall have a current Certification of Ready Mixed Concrete Production Facilities from the National Ready Mixed Concrete Association, or equivalent.
3. Concrete Testing and Inspection Services: The owner shall engage a qualified Independent Testing Agency to perform evaluation test and special inspections per Structural Notes on Drawings and as required per the code. Personnel conducting test shallbe qualified as ACI Concrete Field Testing Technician, Grade 1 according to ACI CP-1 or an equivalent program.

C. Perform work of this section in accordance with ACI 301 and ACI 318.
1. Maintain one copy of each document on site.

D. Source Quality Control: Refer to the following paragraphs for specific procedures. Concrete materials which, by previous tests or actual service, have shown conformance may be used without testing when so approved by SEOR. Testing laboratory shall perform the following conformance testing
1. Cementitious Material Test: The concrete supplier shall furnish to the enforcement agency certification from the cement manufacturer that the cement proposed for use on the project has been manufactured and tested in compliance with the requirements of ACI 318-11 Section 3.2.1 and the ASTM standards listed in the materials section of this Specification.

2. Aggregates for Normal Weight Concrete: Test the aggregate before and after concrete mix is designed and whenever character of aggregate varies or source of material is changed in accordance with ASTM C33 and CBC. Include a sieve analysis. Obtain samples of aggregates at the dry batching or ready-mix concrete plant in accordance with ASTM D75 and perform tests for the properties listed in the following table:

Physical Properties		
Physical Properties, units	Test Method	Minimum Values
Sieve analysis	ASTM C136	Loss after 5 cycles not more than 8 percent of coarse aggregate, nor more than 10 percent of fine aggregate
Organic impurities	ASTM C40	Fine aggregate not darker than reference standard color
Soundness	ASTM C88	
Abrasion	ASTM C131	Weight loss not more than 10.5 percent after 100 revolutions, 42 percent after 500 revolutions
Deleterious materials	ASTM C33, C330	
Materials finer than No. 200 sieve	ASTM C117	Not over 1 percent for gravel, 1.5 percent for crushed aggregate
Reactivity potential	ASTM C227, C289, C342	Ratio of silica released to reduction in alkalinity not to exceed 1.0.
Sand equivalent	ASTM D2419	California sand equivalent values operating range not below 71 percent

3. Concrete Batch Plant Inspections: Conform to CBC and ACI. Continuous batch plant inspection is required for structural concrete, performed by a specially qualified inspector.

E. Compliance with Regulations: All materials shall comply with the current rules and regulations of the local air quality management district, with the rules regarding volatile organic compounds, and with FDA rules and regulations for dangerous substances in construction products.

F. Allowable Tolerances: Construct concrete conforming to the tolerances specified in ACI 117 "Recommended Tolerances for Concrete Construction and Materials", as applicable, unless exceeded by the requirements of regulatory agenciesor otherwise indicated or specified.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with pertinent provisions of Section 01 60 00, "Product Requirements."

B. Ready-mix concrete shall be mixed and delivered in accordance with ASTM C 94. Each batch of concrete delivered to the Project site shall be accompanied by a time slip bearing departure time and signature of batch plant supervisor. Concrete shall be placed within 90 minutes after start of mixing. Concrete which has developed initial set shall not be used. Concrete which has partially hardened shall not be used. Deliver all materials in timely manner to ensure uninterrupted progress of the work.

C. Deliver, store and handle all cement and aggregate materials so as to prevent their deterioration or intrusion by foreign matter. Deteriorated or contaminated materials shall not be furnished.

1.07 JOB CONDITIONS

A. Cold Weather Requirements:
   1. Follow recommendations of ACI 306R when concreting during cold weather.
   2. Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near-freezing weather. Surfaces, in which concrete is to come in contact with, shall be free from frost or ice. No frozen materials or materials containing ice shall be furnished.
   3. When placing concrete during freezing or near-freezing weather the mix shall have a temperature of at least 50 degrees F., but not more than 90 degrees F. when cement is added. Concrete shall be maintained at a temperature of at least 50 degrees F. for at least 72 hours after placing or until it has thoroughly hydrated. When necessary, concrete materials shall be heated before mixing. Special precautions shall be provided for protection of transit-mixed concrete.

B. Hot Weather Requirements:
   1. Follow recommendations of ACI 305R when concreting during hot weather.
   2. During hot weather, proper attention shall be provided for ingredients, production methods, handling, placing, protection and curing, to prevent excessive concrete temperatures or water evaporation which could impair required strength or durability.

PART 2 PRODUCTS

2.01 FORMWORK

A. Comply with requirements of Section 03 1000.

2.02 REINFORCEMENT MATERIALS

A. Comply with requirements of Section 03 2000.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type II - Moderate Portland type, low alkali. Provide Type V where concrete is in contact with soil corrosive to concrete. Use Type III from one batch by a single source for all architecturally exposed concrete.

B. Fine and Coarse Aggregates: ASTM C 33, C330, and C 227, from approved pits, free from vegetable matter and of opaline, feldspar, or siliceous magnesium substances; all washed, clean,

hard, fine-grained sound crushed rock or gravel; not over 5 percent by weight of flat, thin, elongated, friable, or laminated pieces (pieces having major dimension over 5 times average dimension) or more than 2 percent by weight of shale or cherty material. Any suitable individual grading of coarse aggregate may be furnished, provided Grading of Combined Aggregate indicated in following table is obtained.

GRADING OF COMBINED AGGREGATE			
Sieve Number or Size in Inches	1-1/2" Maximum (Percent)	1" Maximum (Percent)	3/4" Maximum (Percent)
Passing a 2"	-	-	-
Passing a 1-1/2"	95-100	-	-
Passing a 1"	70-90	90-100	-
Passing a 3/4"	50-80	70-95	90-100
Passing a 3/8"	40-60	45-70	55-75
Passing a No. 4	35-55	35-55	40-60
Passing a No. 8	25-40	27-45	30-46
Passing a No. 16	16-34	20-38	23-40
Passing a No. 30	12-25	12-27	13-28
Passing a No. 50	2-12	5-15	5-15
Passing a No. 100	0-3	0-5	0-5

C. Water: Water shall be potable and free from deleterious matter or shall otherwise satisfy the requirements of ASTM C1602.

D. Pozzolan: ASTM C618, Class F or N Fly Ash (Class C Not permitted) subject to the conditions of the CBC, containing two percent or less carbon. Fly ash shall not be used in excess of 15 percent by weight of total cement quantity for structural concrete. Where fly ash replacement is 25% or higher, maximum water-cement ratio shall be 0.45. Fly ash need not be included in lightweight concrete mix designs.

E. Water: Clean, potable and not detrimental to concrete, complying with ASTM C94 and ASTM C1602

2.04 ADMIXTURES

A. Admixtures to be used in concrete shall be subject to prior approval by the Structural Engineer. Where more than one admixture is used, they shall be compatible. Use of admixtures shall be consistent throughout Work.

B. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

C. Air Entrainment Admixture: ASTM C260/C260M.

D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.
   1. Super-Plasticizers (High Range Water Reducers): ASTM C494, Type F. Capable of producing concrete which can be placed at 8 11 inch slump without segregation, capable of maintaining slump within 2" of that initially mixed for 2 hours, and of maintaining concrete temperature within 2 degrees F. from time of batching for 2 hours minimum.

E. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.
   1. Only one brand. When used, are subject to approval of Structural Engineer of Record, and must reduce the mixing water at least 10 percent without entraining air in excess of 2 percent by volume. If the water reducing agent entrains more than 2 percent air, the water reduction shall be at least 12 percent, but in no case shall the water reducing agent entrain air in excess of 4 percent.

F. Water Reducing Admixture: ASTM C494/C494M Type A.
   1. Only one brand. When used, are subject to approval of Structural Engineer of Record, and must reduce the mixing water at least 10 percent without entraining air in excess of 2 percent by volume. If the water reducing agent entrains more than 2 percent air, the water reduction shall be at least 12 percent, but in no case shall the water reducing agent entrain air in excess of 4 percent.

G. Waterproofing Admixture: Admixture formulated to reduce permeability to liquid water, with no adverse effect on concrete properties.
   1. A crystalline permeability reducing admixture (PRAH) may be used in accordance with ACI 212.3R-10, where reduced concrete permeability is desired. Trial batches should be performed to ensure that the plastic and hardened properties of concrete meet expectations.
   2. Admixture Composition: Crystalline, functioning by growth of crystals in capillary pores.

2.05 ACCESSORY MATERIALS

A. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
   2. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 7,000 pounds per square inch.
   3. non-gas-forming and free of oxidizing catalysts and inorganic accelerators, used as dry or damp pack, or mixed to a 20-second flow (CRC-C 611), without segregation or bleeding at any temperature between 45 degrees F and 100 degrees F.
   4. Low-Slump, Dry Pack Products:
      a. Drypack: Field mixture of I part Portland cement to 2 parts fine aggregate mixed to a damp consistency such that a ball molded in the hands will stick together and hold its shape. In lieu of field mixing, Contractor may use factory mixed drypack material, such as Master Builders "Set Grout." f'c shall be equal to 5,000 psi.

B. Non-Shrink Epoxy Grout: Moisture-insensitive, two-part; consisting of epoxy resin, non-metallic aggregate, and activator.

2.06 BONDING AND JOINTING PRODUCTS

A. Bonding Agent: "Weld-Crete," manufactured by Larsen Products Co., P.O. Box 2127, Rockville, MD 20852, Master Builders "Concresive," or equal.

B. Construction Joint Materials: "Key-Kold" or "Kwik-Joint," of profiles indicated.

C. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.

D. Expansion Joint Fillers: Preformed strips, non-extruding and resilient bituminous type, of thickness indicated, conforming to ASTM D 1751 and ASTM D1752.

2.07 CURING MATERIALS

A. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.

B. Moisture-Retaining Sheet: ASTM C171.
   1. Curing paper, regular.
   2. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard.

2.08 CONCRETE MIXING

A. Furnish ready-mixed concrete from an approved commercial off-site plant. Conform to ASTM C 94, except materials, testing, and mix designs as specified herein. Use transit mixer trucks equipped with automatic devices for recording number of revolutions of drum. Comply with CBC Section, 1905.

B. Admixtures: All approved admixtures shall be introduced into the concrete at the batch plant. Field additions are not acceptable.

C. Slump: Adjust quantity of water so concrete at point and time of placing does not exceed the slumps per plans when tested according to ASTM C143. Use the minimum water necessary for workability required by part of structure being cast.

D. For compressive strength, density, fly ash content, slump, and water-cement ratio, refer to the general notes in the plans.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 GENERAL

A. Time of Placing: Do not place concrete until reinforcement, conduits, outlet boxes, anchors, hangers, sleeves, bolts, and other embedded materials are securely fastened in place. Contact the inspector at least 24 hours before placing concrete; do not place concrete until inspected by the inspector.

B. Pouring Record: A record shall be kept on the Project site of time and date of placing concrete in each portion of structure. Such record shall be maintained on the Project site until Substantial Completion and shall be available for examination by the SEOR.

3.03 PREPARATION

A. Earth Subgrade: Dampen 24 hours before placing concrete, but do not muddy. Re-roll where necessary for smoothness and remove loose material.

B. Verify that forms are clean and free of rust before applying release agent.

C. Reglets and Rebates:
   1. Form reglets and rebates in concrete to receive flashing, frames and other equipment as detailed and required. Coordinate dimensions and locations required with other related Work.
   2. If concrete slabs on grade adjoin a wall or other perpendicular concrete surface, form a reglet in wall to receive and carry horizontal concrete Work. Reglet shall be full thickness of the slab and shall be 3/4 inch wide, unless otherwise indicated. Requirement does not apply to exterior walks, unless specifically indicated.

D. Screeds: Install screeds accurately and maintain at required grade or slab elevations after steel reinforcement has been installed , but before starting to place concrete. Install screeds adjacent to walls and in parallel rows not to exceed 8 feet on centers.

E. Screeds Over Vapor Barrier: Use weighted pad or cradle type screeds and do not drive stakes through the vapor barrier. Check with an instrument level, transit, or laser.

F. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

G. Remove all free water from forms before concrete is deposited. Remove hardened concrete, debris, and foreign materials from interior surfaces of forms, exposed reinforcing, and from surfaces of mixing and conveying equipment.

H. Wetting: Wet wood forms sufficiently to tighten up cracks. Wet other materials sufficiently to reduce absorption and to help maintain concrete workability.

I. Gravel Fill: Recompact disturbed gravel and bring to correct elevation.

J. Sand Beds or Subslab Drainage Fill: Recompact disturbed material and bring to correct elevation.

K. All concrete shall be thoroughly consolidated by suitable means during placement and shall be thoroughly worked around reinforcement and embedded fixtures and into corners of forms.

L. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.04 PLACING CONCRETE

A. Sheet Vapor Retarders:
   1. Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer’s written instructions.
   2. Lap joints 6 inches and seal with manufacturer’s recommended adhesive or tape.

B. Conveying and Placing:
   1. Place concrete in accordance with ACI 304R.
   2. Do not place concrete until reinforcing steel and forms or decks have been approved by the Inspector and other authorities having jurisdiction. Concrete shall be placed only under direct observation of the inspector. Do not place concrete outside of regular working hours, unless the inspector has been notified at least 48 hours in advance.
   3. Comply with CBC Sections 1905.9 and 1905.10.
   4. Concrete shall be conveyed from mixer to location of final placement by methods, which will prevent separation or loss of materials. Place concrete in horizontal layers not more than 18" thick within 90 minutes after water is first added to the batch.
   5. In placing concrete in columns, walls or thin sections, provide openings in forms, elephant trunks, tremies or other recognized devices, to prevent segregation and accumulation of partially hydrated concrete on forms or metal reinforcement above level of concrete being placed. Such devices shall be installed so that concrete will be dropped vertically. Unconfined vertical drop of concrete from end of such devices to final placement surface shall not exceed 5-feet for concealed concrete or over 3-feet for exposed concrete.
   6. Concrete shall be placed as a continuous operation until placing of panel or section is completed. Top surfaces of vertically formed lifts shall be level.
   7. Concrete shall be thoroughly consolidated during placement, and shall be worked around reinforcement and embedded fixtures with mechanical vibrators.
   8. Where new concrete is placed against or on old or existing concrete, apply bonding agent to surface of old concrete prior to placement of new concrete.

C. Compaction and Screeding:
   1. Compacting: Compact each layer of the concrete as placed with mechanical vibrators or equivalent equipment. Transmit vibration directly to concrete and in no case through the forms unless approved. Accomplish thorough compaction. Supplement by rodding or spading by hand adjacent to forms. Compact concrete into corners and angles of forms and around reinforcement and embedded fixtures. Recompact deep sections with congestion due to reinforcing steel as required.
   2. Operation of Vibrators: Do not horizontally transport concrete in forms with vibrators nor allow vibrators to contact forms or reinforcing. Push vibrators vertically into the preceding layers that are still plastic and slowly withdraw, producing maximum obtainable density in concrete without creating voids or segregation. In no case disturb concrete that has partially set. Vibrate at intervals not exceeding two-thirds the effective visible vibration diameter of the submerged vibrator. Avoid excessive vibration that causes segregation.
   3. Tamp freshly placed concrete with a heavy tamper until at least 3/8 inch of mortar is brought to surface. Concrete shall then be tamped with a light tamper and screeded with a heavy straightedge until depressions and irregularities are eliminated, and surface is true to finish grades or elevations. Remove excess water and debris.
   4. Where slabs are to receive separate cement finish or mortar setting bed, continued tamping to raise mortar to surface is not performed. Laitance shall be removed by brushing with a stiff brush or by light sandblasting to expose clean top surface of coarse aggregate.

D. Floating and Troweling:
   1. After concrete has been placed, struck off, consolidated, and restraightened, concrete shall not be worked further until ready for floating. Restraightening operation is best accomplished by use of 8 foot to 10 foot wide bull float. Power floating operations shall begin when the water sheen has disappeared, and when the mix has stiffened sufficiently

to permit proper operation of power-driven float.

2. Consolidate surface with power-driven floats. Hand floating with wood or cork faced floats shall be used in locations inaccessible to power driven machine. Surface shall be restraightened at this stage with ten foot highway straightedge applied at not less than two different angles.
3. High spots shall be cut down and low spots filled during this procedure to produce planes checking true under straightedge in any direction. Uniformly slope surfaces to drains where occurs.
4. Restraightening operation shall be followed by final float pass to uniform, smooth, granular texture.

E. Joints: Comply with CBC Section 1906.4. Locate joints in concrete only where shown or approved and obtain prior approval for points of stoppage of any pour. Clean and roughen surface of construction joints by removing entire surface and exposing 1/4" of clean coarse aggregate solidly embedded in mortar matrix by chipping, use of an approved retarder agent, or equal. Water and keep hardened concrete wet for not less than 24 hours before placing the next lift or abutting concrete. Cover the horizontal surfaces of existing or previously placed and hardened concrete with a 2" thick layer of fresh concrete of required mix less 50 percent of coarse aggregate just before balance of concrete is placed.

F. Vertical Elements: Stop placement of concrete in walls and columns 1 1/2" below bottom of beams or supported slabs. Stop placement at sills and heads of wall openings in the same manner. Allow concrete in vertical elements to be in place at least 2 hours and until vertical settlement has ceased before placing concrete for floor framing.

G. Correction of Segregation: Before placing next layer of concrete, and at the top of each placement for vertical elements, remove all concrete containing excess water or fine aggregate, or showing deficiency of coarse aggregate, and fill the space with compacted concrete of correct proportions. Comply with CBC Section, 1906.4.

H. Filling, Leveling and Patching:
1. Concrete slabs exhibiting high or low spots and indicated to receive resilient floor covering or soft floor covering, shall have surfaces repaired. High spots shall be honed, or ground with power-driven machines to required tolerances. Low spots shall be filled with latex underlayment, installed in strict accordance with manufacturer's written recommendations.
2. Holes resulting from form ties or sleeve nuts shall be solidly packed, through exterior walls, by pressure grouting with cement grout, as specified. Grouted holes on exposed surfaces shall be screeded flush and finished to match adjoining surfaces.

I. Cement Base: Cement base shall be of the height, thickness, and shape detailed. Base shall be reinforced with one inch mesh, 18 gage, zinc-coated wire fabric. Base finish mixture shall be one part Portland cement, 2 parts of fine aggregate and one part pea gravel. Colored cement base shall include a chemically inert mineral oxide pigment in the mix.

J. Place concrete for floor slabs in accordance with ACI 302.1R.

K. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.05 EXPANSION AND CONSTRUCTION JOINTS

A. EXPANSION AND CONSTRUCTION JOINTS
   1. Construction Joints: Details and proposed location of construction joints shall be as indicated on the Drawings, located to least impair strength of structure, in accordance with the following:
      a. Thoroughly clean contact surface by sand blasting entire surface not earlier than 5 days after initial placement.
      b. A mix containing same proportion of sand and cement provided in concrete plus a maximum of 50 percent of coarse aggregate shall be placed to a depth of at least one inch on horizontal joints. Vertical joints shall be wetted and coated with a neat cement grout immediately before placing of new concrete.
      c. Should contact surface become coated with earth, sawdust, or deleterious material of any kind after being cleaned, entire surface shall be re-cleaned before applying mix.
   2. Expansion Joints: Provide expansion joints where indicated in walks and exterior slabs. Space approximately 20 feet apart, unless otherwise indicated. Joints shall extend entirely through slab with joint filler in one piece for width of walk or slab.
   3. Tooled Joints: Slabs, walks and paving shall be marked into areas as indicated with markings made with a V-grooving tool. Marks shall be round-edged, free from burrs or obstructions, with clean cut angles and shall be straight and true. Walks, if not indicated, shall be marked off into rectangles of not more than 12 square feet and shall have a center marking where more than 5 feet wide.

3.06 SLAB JOINTING

A. Locate joints as indicated on drawings.

B. Anchor joint fillers and devices to prevent movement during concrete placement.

C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.

3.07 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. Maximum Variation of Surface Flatness:
   1. Under Seamless Resilient Flooring: 1/8 inch in 10 feet.
   2. Under Carpeting: 1/4 inch in 10 feet.
   3. Under Wood Sports Flooring: 1/8" in 10 feet.

B. Correct the slab surface if tolerances are less than specified.

C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.08 CONCRETE FINISHING

A. Soda and Acid Wash: Concrete surfaces to receive plaster, paint or other finish, and which have been formed by oil coated forms, shall be scrubbed with a solution of 1-1/2 pounds of

caustic soda to one gallon of water. Surfaces where smooth wood or waste molds have been furnished shall be scrubbed with a solution of 20 percent muriatic acid. Wash with clean water after scrubbing.

B. Sacking: Exposed concrete curbs, and other similar surfaces shall be sacked by an application of Portland cement grout, floated, and rubbed. Sacking shall not be performed until patching and filling of holes has been completed. Entire sacking operation for any continuous area shall be started and completed within the same day.
   1. Mix one part portland cement and 1-1/2 parts fine sand with sufficient water to produce a grout having consistency of thick paint. Wet surface of concrete sufficiently to prevent absorption of water from grout. Apply grout uniformly with a brush or spray gun, then immediately float surface with a cork or other suitable float, scouring wall vigorously.
   2. While grout is still plastic, finish surface with a sponge-rubber float, removing excess grout. Allow surface to dry thoroughly, then rub vigorously with dry burlap to completely remove dried grout. No visible film or grout shall remain after rubbing with burlap.

C. Exposed Formed Concrete: Rub surfaces with a carborundum brick or equal until smooth and free of form marks, offsets, and other defects, and in uniform planes. Wet rubbed surface and then brush coat with cement grout consisting of 1 part light-colored Portland cement to 2 parts fine aggregate and mixed with water to the consistency of thick paint. Cork or wood float grout to fill all pits, air bubbles, and surface holes. Scrape off excess grout and rub surface with burlap or equal to remove all grout film. After grout sets, again coat with same grout, cure, then brick and burlap rub as necessary to eliminate remaining defects and blemishes, and damp cure surfaces for not less than 3 days or longer if required for complete curing of concrete. Finish, clean, and cure each surface as a continuous operation. Produce uniformly plane smooth surfaces free of grout film, grout or rubbing marks, defects, or blemishes after painting or covering with a flexible type finish material. Unless otherwise indicated or specified, apply this finish on exposed formed concrete, exposed concrete at the building foundation, and where indicated or scheduled.

D. Sandblasting: Exterior concrete surfaces to receive stucco dash coat finish, where plywood or other smooth forms have been furnished, shall be uniformly sand-blasted with sharp quartz sand under sufficient air pressure to remove dirt, form oil and other foreign materials, and roughen surface to provide a proper bond. Such surfaces shall be thoroughly washed with clean water after sandblasting.

E. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.

3.09 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. All curing shall be per CBC Section 1905.11. Keep forms containing concrete in a wet condition until removed. Keep concrete continuously moist for not less than 7 days after placement. Keep concrete above 50ºF and moist with a fine fog water spray until protected by

curing media.

D. Forms containing concrete, top of concrete between forms, and exposed concrete surfaces after removal of forms shall be maintained in a thoroughly wet condition for at least 7 consecutive days after placing. Use the water curing method, curing sheet material, or a clear liquid membrane-forming curing compound except as otherwise specified.

E. During times of dry or excessive winds, high ambient temperature, low humidity, or other ambient conditions causing rapid drying, use specified evaporation retardant and finishing aid material according to the manufacturers instructions and cure concrete with a fine fog spray of water, or equal, applied both during and after finishing and continued until final curing operations are started.

F. Within 24 hours after finishing, exterior slabs and paving, and interior slabs to receive cement topping or mortar setting beds, shall be covered with sand to a depth of 2 inches and kept thoroughly wet for 7 days.
   1. Instead of sand covering, exterior walks and paving where no other surface treatment is specified, may be cured with clear liquid curing compound immediately installed in accordance with manufacturer's directions.

G. Where fly ash replacement is 20% or higher, floor slabs shall receive a 3 day moist cure and then 1 coat of approved curing compound. All other surfaces, with the exception of foundations, shall receive a coat of approved curing compound immediately after removal of formwork.

H. Surfaces Not in Contact with Forms:
   1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
   2. Final Curing: Begin after initial curing but before surface is dry.

3.10 GROUTING AND DRYPACKING

A. Install as indicated or required. Where grouting and drypacking is part of the work of other sections, it shall conform to the following requirements, as applicable.

B. Drypacking: Mix materials thoroughly with minimum amount of water. Install drypack by forcing and rodding to fill voids and provide complete bearing under plates. Finish exposed surfaces smooth and cure with damp burlap or liquid curing compound.

C. Non-Shrink Grouting:
   1. Mixing: Mix the approved non-shrink grout material with sufficient water per manufacturers recommendations.
   2. Application: Surfaces to receive the non-shrink grout shall be clean, and shall be moistened thoroughly immediately before placing the mortar. Before grouting, surfaces to be in contact shall be roughened and cleaned thoroughly, all loose particles shall be removed and the surface flushed thoroughly with neat cement grout immediately before the grouting mortar is placed. Place fluid grout from one side only and puddle, chain, or pump for complete filling of voids; do not remove the dams or forms until grout attains initial set. Finish exposed surfaces smooth, and cure as recommended by grout manufacturer.

3.11 FIELD QUALITY CONTROL

A. Comply with pertinent provisions of Section 014000: Quality Requirements.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Testing/Evaluation of Concrete: Conform to CBC and ACI. Testing Laboratory shall perform following tests. Samples for testing shall be obtained in accordance with ASTM C 172, and shall be taken from as close to point of placement as possible.
   1. Compressive Strength Tests: Cast one set of three or more cylinders from each days placing and each 50 cubic yards, or fraction thereof, or not less than once for each 2,000 square feet of surface area for slabs and walls, of each strength of structural concrete. Date cylinders, assign record number, and tag showing the location from which sample was taken. Also record slump test result of sample. Do not make more than two series of tests from any one location or batch of concrete.
   2. Test Cylinders: Samples will be made in accordance with ASTM C172. Cast cylinders according to ASTM C31; 24 hours later, store cylinders under moist curing conditions at about 70 F. Test according to ASTM C39 at 7 and 28 day ages. The remaining cylinder shall be kept in reserve in case tests are unsatisfactory.

D. Core Tests: Comply with CBC and ACI. If tests show that compressive strength of any concrete falls below required minimum at 28 day age, additional curing and testing of concrete which unsatisfactory test reports represent may be directed. Testing Laboratory shall take and test drilled cores as directed in accordance with ASTM C42. Contractor shall refill core holes with drypack concrete of the same compressive strength required for cored concrete. If core tests results are unsatisfactory, Contractor shall furnish required labor, equipment, and weights, and the Testing Laboratory shall conduct load testing on involved parts of building or structure as directed. Contractor shall bear additional curing and test costs, including Testing Laboratory costs, for concrete not meeting required compressive strength at 28 day age even if testing demonstrates that concrete has eventually attained required minimum compressive strength, and all costs for required corrections or removals and replacements as directed and required for approved construction.

E. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

F. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

G. Slab Testing: Cooperate with manufacturer of specified moisture vapor reducing admixture (MVRA) to allow access for sampling and testing concrete for compliance with warranty requirements.

3.12 CLEAN UP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

3.13 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

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Section 03 3511
Concrete Floor Finishes

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface treatments for concrete floors and slabs.

B. Liquid densifiers and hardeners.

C. Dry shake hardeners.

D. Concrete stains and dyes.

E. Clear penetrating sealers.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Finishing of concrete surface to tolerance; floating, troweling, and similar operations; curing.

1.03 REFERENCE STANDARDS

A. ACI 301 - Specifications for Concrete Construction; 2020.

B. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015.

C. ANSI A326.3 - American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials; 2017.

D. ASME B46.1 - Surface Texture (Surface Roughness, Waviness, and Lay); 2009.

E. ASTM F2508 - Standard Practice for Validation, Calibration, and Certification of Walkway Tribometers Using Reference Surfaces; 2016.

F. ASTM E1155 - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers; 1996 (Reapproved 2008).

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with concrete floor placement and concrete floor curing.

B. Preinstallation Meeting: Convene a pre-installation meeting with relevant parties.

1.05 SUBMITTALS

A. Product Data: Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.

B. Concrete Floor Protection Plan: Contractor shall provide a concrete floor protection plan.

C. Maintenance Data: Provide data on maintenance and renewal of applied finishes.

D. Specimen Warranty: Manufacturer warranty.

E. Provide letter of certification from concrete floor finish manufacturer for polished concrete system stating that the installer is a certified applicator of the polished concrete system and is familiar with proper procedures and installation requirements required by the manufacturer.

F. Provide copy of tribometer testing and validation reports per ASTM F2508

1.06 QUALITY ASSURANCE

A. Perform work in accordance with ACI 302.1R.

B. Installer Qualifications:
   1. Use an experienced installer and adequate number of skilled workmen who are thoroughly trained and experienced in the necessary craft.
   2. The special concrete finish manufacturer shall certify applicator.
   3. Applicator shall be familiar with the specified requirements and the methods needed for proper performance of work of this section.

C. Concrete floor finishing sub-contractor to attend pre-installation meeting with concrete placement sub-contractor at least 1 week prior to placement of concrete. Architect and manufacturer's representative to attend pre-installation meeting with sub-contractors.
   1. Finishing sub-contractor to review installation techniques for mock up and final floor slab with manufacturer.
   2. Sub-contractors to review concrete mix design for compatibility with approved floor finish materials.

1.07 MOCK-UP

A. For coatings, construct mock-up area under conditions similar to those that will exist during application, with coatings applied.

B. Mock-Up Size: Minimum 15 feet square for each specified finish and color.

C. Locate where directed by Owner and Architect.

D. If the Architect or Owner Representative determines that mock-ups do not meet requirements, demolish and remove them from the siteand cast other until mock-ups are approved.

E. Apprroved mock up to remain onsite until placement concrete slab.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's sealed packaging, including application instructions.

1.09 PROTECTION

A. No satisfactory chemical or cleaning procedure is available to remove petroleum stains from the concrete surface. Prevention is therefore essential.
   1. All hydraulic powered equipment must be diapered to avoid staining of the concrete.
   2. No trade will park vehicles on the inside slab. If necessary to complete their scope of work, drop cloths will be placed under vehicles at all times.
   3. No pipe cutting machine will be used on the inside floor slab.
   4. Steel will not be placed on interior slab to avoid rust staining.
   5. Acids and acidic detergents will not come into contact with slab.
   6. All trades are to be informed that the slab must be protected at all times.

B. Concrete Floor Protection Plan: Concrete floor finish Subcontractor shall assist Contractor in development of Concrete Floor Protection Plan (CFPP). Plan to include
   1. Signage to communicate with subcontractors protection requirements. (Available from ASCC as free download)
   2. Concrete floor protection materials and placement
   3. Plans for maintenance of protection materials

1.10 FIELD CONDITIONS

A. Comply with manufacturers written instructions for cure time, substrate temperature and moisture content, ambietn temperature and humidity, ventilation adn other conditions affecting topping performance.

B. Maintain light level equivalent to a minimum 200 W light source at 8 feet above the floor surface over each 20 foot square area of floor being finished.

C. Maintain ambient temperature of 50 degrees F minimum or as recommended by the manufacturer.

1.11 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Finish Warranty: Provide 10-year manufacturer warranty against excessive degradation of finish and that it will remained hardened, dustproof, and water repellent.

PART 2 PRODUCTS

2.01 CONCRETE FLOOR FINISH APPLICATIONS

A. Liquid Densifier and Hardener:
   1. Use at following locations: Plumbing Chase and Kiosk.

B. Dry Shake Hardener:
   1. Use at following locations: Restrooms.

C. Clear Coating:
   1. Use at following locations: Restroom.

2.02 DENSIFIERS AND HARDENERS AND SEALERS

A. Liquid Densifier and Hardener: Penetrating chemical compound that reacts with concrete, filling the pores, hardening, and dustproofing.
   1. Products:
      a. Ashford Formula; Curecrete Distribution, Inc.: www.ashfordformula.com
      b. Substitutions: See Section 01 6000 - Product Requirements.

B. Dry Shake Hardener: Premixed dry powder for spreading on and working into concrete surface prior to set.
   1. Color(s): As selected by Architect from manufacturer's custom range.
   2. Color(s):
      a. Base Color: 100% Coverage: Arizona Tan A-53
      b. Accent Color: 33% Coverage. Broadcasted over base color for mottled, flashed look: Terra Cotta A-26
   3. Composition: Non-metallic aggregate.
      a. Products:
         1) Sika Color; LITHOCHROME Color Hardener: www.scofield.com/#sle.
         2) Substitutions: See Section 01 6000 - Product Requirements.

2.03 COATINGS

A. Penetrating Sealer: Transparent, nonyellowing, water- or solvent-based coating.
   1. Composition: Silane-siloxane mixture.
      a. Products: From same manufacturer as dry shake hardener
         1) Sika Corporation; SikaCem-102 First Seal: https://usa.sika.com.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that floor surfaces are acceptable to receive the work of this section.

B. Verify that flaws in concrete have been patched and joints filled with methods and materials suitable for further finishes.

C. Concrete must be in place a minimum of 45 days or as directed by the manufacturer before application can begin.

D. Meeting with concrete installer.

E. Letter to contractor and owner idenitfying areas formed not meeting required tolerances for installation.

3.02 TOLERANCES

A. Measure for F(F) and F(L) tolerances for floors in accordance with ASTM E1155, within 48 hours after slab installation.

B. Finish concrete to achieve the following tolerances. Where sloping to a drain, omit level criteria.
   1. Exposed to view without additional finishing: Ff 30 and Fl 20.
   2. Exposed to view with concrete polishing system applied: Ff 40 and Fl 30.

C. Correct the slab surface if tolerances are less than specificed.

D. Correct defects by grinding or by removal and replacement of the defectivve work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.03 GENERAL

A. Apply materials in accordance with manufacturer's instructions.

3.04 FLOOR FINISHING

A. Finish concrete floor surfaces in accordance with ACI 301 and ACI 302.1R.

B. In areas with floor drains, maintain design floor elevation at walls; slope surfaces uniformly to drains at 1/8 inch per foot nominal. No slope shall exceed 1/4 per foot.

C. Densifer Applicaion
   1. Clean floor in accordance with manifacturure's recommendations.
   2. Apply densification in acordance with manufacturer's recommendations over broom finished concrete slab.
   3. Remove excess after 45 minutes or in accordance with manufacturer's recommendations.

D. Dry Shake Hardener Applicaiton
   1. Apply base color and work into concrete surface.
   2. Allow adequate time for base color to cure to ensure no over-bleed of accent color.
   3. Broadcast accent color for "flashed" finish along with additional base color if required and work into concrete surface. Trowel to create mottled amorphic color finish.
   4. Broom finish concrete to achieve slip resistance
   5. Apply penetraiting sealer per manufacturer's recommendations.

E. Slip Resistance:
   1. Minimum wet dynamic coeficient of friction: 0.42 when measured per ANSI A326.3
   2. Minimum floor roughness of 0.41 micrometers (16 micro inches) when measured per ASME B46.1

3.05 COATING APPLICATION

A. Verify that surface is free of previous coatings, sealers, curing compounds, water repellents, laitance, efflorescence, fats, oils, grease, wax, soluble salts, residues from cleaning agents, and other impediments to adhesion.

B. Protect adjacent non-coated areas from drips, overflow, and overspray; immediately remove excess material.

3.06 PROTECTION

A. Protect finished work until fully cured in accordance with manufacturers recommendations.

B. Protect finished work for the duration of construction.

END OF SECTION

Section 04 2000
Unit Masonry

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete block.

B. Concrete facing brick.

C. Mortar and grout.

D. Installation of Reinforcement

E. Placement of anchor bolts, assemblies and embeds

F. Grouting of plates and embeds

G. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 03 2000 - Concrete Reinforcing: Reinforcing steel for grouted masonry.

B. Section 03 3000 - Cast-in-Place Concrete: Installation of dovetail slots for masonry anchors.

C. Section 04 0511 - Masonry Mortaring and Grouting.

D. Section 05 5000 - Metal Fabrications: Loose steel lintels.

E. Section 07 6200 - Sheet Metal Flashing and Trim: Through-wall masonry flashings.

F. Section 07 9200 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

A. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2014.

B. ASTM C140/C140M - Standard Test Methods of Sampling and Testing Concrete Masonry Units and Related Units; 2014.

C. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2018.

D. ASTM C150/C150M - Standard Specification for Portland Cement; 2016.

E. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006 (Reapproved 2011).

F. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.

G. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2011.

H. ASTM C476 - Standard Specification for Grout for Masonry; 2010.

I. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete; 2010.

J. ASTN C1019 - Standard Test Method for Sampling and Testing Grout, 2016

K. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms; 2014.

L. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2016.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Mix Designs and test results:
   1. One of the following for each mortar mix
      a. Mix designs indicating type and proportions of ingredients in compliance with the proportion specification of ASTM C270, or
      b. Mix designs and mortar tests performed in accordance with the property specification of ASTM C270
   2. One of the following for each grout mix
      a. Mix designs indicating type and proportions of ingredients in compliance with the proportion specification of ASTM C476, or
      b. Mix designs and grout strength tests performed in accordance with the property specification of ASTM C476, or
      c. Compressive strength tests performed in accordance with ASTM C1019, and slump flow and Visual Stability Index (VSI) as determined by ASTM C1611/C1611M.

C. Material Certificates- Material certificates for the following, certifying that each material is in compliance.
   1. Reinforcement
      a. Refer to Section 03 2000 Concrete Reinforcement
   2. Anchors, ties, fasteners, and metal accessories
   3. Masonry Units
   4. Mortar and grout materials
   5. Self-Consolidating grout

D. Construction Procedures
   1. Cold weather construction procedures
   2. Hot weather construction procedures

E. Samples: Submit two samples of decorative block units to illustrate color, texture, and extremes of color range.

F. Samples of cured dry mortar showing finish color.

G. Cured sealant colors for control joints.

H. Control Joint Filler, 12" pieces of each size and type.

1.05 QUALITY ASSURANCE

A. Comply with the pertinent provisions of 01 4000 "Quality Requirements."

B. Comply with provisions of the following codes and standards except where exceeded by requirements of the contract documents.
   1. California Building Code (CBC), 2016
   2. ACI 530/530.1/ERTA, Building Code Requirements for Masonry Structures, 2013

C. Inspections:
   1. General: Structural verifications inspections and test shall be performed in accordance with the following codes and standards:
      a. California Building Code (CBC), 2016
      b. ACI 530/530.1/ERTA, Building Code Requirements for Masonry Structures, 2013
   2. Owner Requirements:
      a. The owner or owner's agent shall employ one or more approved agencies to perform inspections during construction as required by code and shown in the contract documents and specifications
   3. Special Inspection
      a. Qualifications: The special inspector(s) shall provide written documentation to the building official demonstrating his or her competence and relevant experience or training. The experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of special inspection activities for projects of similar complexity and material quantities.
      b. Special Inspection Report Requirements
         1) The special inspector shall keep record of inspections
         2) The special inspector shall furnish inspection reports to the building official and to the Architect and Engineer of Record.
         3) Reports shall indicate that work inspected was or was not completed in conformance to approved construction documents.
         4) Discrepancies shall be brought to the immediate attention of the contractor for correction
         5) If not corrected discrepancies shall be brought to the attention of the building official, and the Architect and Engineer of Record prior to completion of that phase of work.
         6) A final report documenting the special inspections and correction of any discrepancies noted shall be submitted to the building official.
   4. Contractor Requirements
      a. Special inspection is in addition to the contractor's quality control inspections and testing. The contractor's quality control inspections and testing shall occur prior to special inspection and reports shall be available to the special inspector.
      b. The contractor will notify, in writing, the owner or owner's agent at least 48 hours in advance of special inspection required.

c. The contractor shall ensure that the work for which special inspection is required remains accessible and exposed for special inspection purposes until completion of the required special inspection.
d. Any contractor responsible for the construction of the main wind and/or seismic force resisting system shall submit a written statement of responsibility to the building official and owner prior to commencement of work on the system or component. The statement of responsibility shall contain acknowledgement and awareness of the special inspection requirements.

5. Inspections Required per TMS 602-13/ACI 530.1/ASCE 6-13:

Level C Quality Assurance				
MINIMUM TESTS				
Verification of f', and f'AAC in accordance with Article 1.4B prior to construction and for every 5,000 sq. ft. during construction. *(see Section a below)*				
Verification of proportions of materials in premixed or preblended mortar and grout other than self-consolidating grout as delivered to the project site.				
Verification of slump flow and visual stability Index (VSI) as delivered to the project site in accordance with Article 1.5 B.1.b.3 for self-consolidating grout				
MINIMUM SPECIAL INSPECTION				
Inspection Task	**Frequency**		**Reference for Criteria**	
	Cont.	Periodic	TMS402/ ACI 530/ ASCE 5	TMS402/ ACI 530.1/ ASCE 6
1. Verify Compliance with the approved submittals		X		Art. 1.5
2. Verify that the following are in compliance:				
a. Proportions of site-mixed mortar, grout		X		Art. 2.1, 2.6A, 2.6B, 2.6C, 2.4G.1.b
b. Grade, type and size of reinforcement and anchor bolts		X	Sec. 6.1	Art. 2.4, 3.4
c. Placement of masonry units and construction of mortar joints		X		Art. 3.3B
d. Placement of reinforcement, connectors	X		Sec. 6.1, 6.2.1, 6.2.6, 6.2.7	Art. 3.2E, 3.4, 3.6A
e. Grout space prior to grouting	X			Art. 3.2D, 3.2F
f. Placement of grout	X			Art. 3.5, 3.6C

g. Size and location of structural elements		X		Art. 3.3F
h. Type, size, and location of anchors including other details of anchorage of masonry to structural members, frames and other construction	X		Sec. 1.2.1(e), 6.1.4.3, 6.2.1	
i. Welding of reinforcement	X		Sec. 8.1.6.7.2, 9.3.3.4(c), 11.3.3.4(b)	
j. Preparation, construction, and protection of masonry during cold weather (temperature below 40 degrees F) or hot weather (temperature above 90 degrees F)		X		Art. 1.8C, 1.8D
3. Observe Preparation of grout specimens, and/or prisms	X			Art. 1.4, B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

a. Masonry compressive strength shall be determined for each wythe by the unit strength method or by the prism method *(Reference the Specification for Masonry Structures (TMS 602-13/ACI 530.1-13/ASCE 6-13 Art. 1.4)*
   1) Unit Strength Method *(Reference the Specification for Masonry Structures (TMS 602-13/ACI 530.1-13/ASCE 6-13 Art. 1.4B.2)*
      (a) Units are to be sampled and tested to very conformance with ASTM C90.
      (b) Thickness of the bed joint shall not exceed 5/8".
      (c) For grouted masonry the grout shall conform to TMS 602-13/ACI 530.1-13/ASCE 6-13 Art. 2.2.
   2) Prism Test Method: Determine the compressive strength of concrete masonry by the prism test method in accordance with ASTM C1314.

1.06 MOCK-UPs

A. Sample panels
   1. Construct sample panels of masonry walls.
      a. Use materials and procedures accepted for the work
      b. The minimum sample panel dimensions are 4 feet by 4 feet.
      c. The acceptable standard for the work is established by the accepted panel
      d. Retain sample panels at the project site until work has been accepted.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

B. Do not use damaged masonry units, damaged components of structure, damaged packaged materials,

C. Protect cementitious materials for mortar and grout from precipitation and groundwater

D. Do not use masonry materials that are contaminated

E. Store different aggregates separately

F. Protect reinforcement, ties and metal accessories from permanent distortions and store them off the ground.

1.08 PROJECT CONDITIONS

A. Construction Loads - Do not apply construction loads that exceed the safe superimposed load capacity of the masonry and shores, if used.

B. Masonry Protection - Cover top of unfinished masonry work to protect it from moisture intrusion

C. Hot Weather Construction - Implement approved hot weather procedures and comply with the following:
   1. Preparation When the ambient air temperature exceeds 100 degrees F, or exceeds 90 degrees F with a wind velocity greater than 8 mph:
      a. Preparation When the ambient air temperature exceeds 100 degrees F, or exceeds 90 degrees F with a wind velocity greater than 8 mph:
         1) Maintain sand piles in a damp, loose condition
         2) Provide necessary conditions and equipment to produce mortar having a temperature below 120°F
   2. Construction — While masonry work is in progress
      a. When the ambient air temperature exceeds 100°F, or exceeds 90°F with a wind velocity greater than 8 mph:
         1) Maintain temperature of mortar and grout below 120°F.
         2) Flush mixer, mortar transport container, and mortar boards with cool water before they come into contact with mortar ingredients or mortar.
         3) Maintain mortar consistency by retempering with cool water.
         4) Use mortar within 2 hr of initial mixing.
   3. Protection — When the mean daily temperature exceeds 100°F or exceeds 90°F with a wind velocity greater than 8 mph, fog spray all newly constructed masonry until damp, at least three times a day until the masonry is three days old.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Concrete Block: Comply with referenced standards and as follows:

1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depth of 8 inches.
2. Load-Bearing Units: ASTM C90, medium weight.
   a. Hollow block, as indicated.

2.02 MORTAR AND GROUT MATERIALS

A. Mortar
   1. Provide mortar conforming to the following parameters
      a. Conform to ASTM C270
      b. Comply with Section 2103.2 of the 2016 CBC
      c. Type S Mortar
      d. 1,800 psi minimum 28 day compressive strength

B. Grout
   1. Provide grout conforming to the following parameters
      a. Conform to ASTM C476
      b. Comply with Section 2103.3 of the 2016 CBC
      c. 2,000 psi minimum 28 day compressive strength. Determine compressive strength of grout in accordance with ASTM C1019.
      d. Do not use admixtures unless accepted by the Engineer of Record. Field addition of admixtures is not permitted in self-consolidating grout.

C. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
   1. Hydrated Lime: ASTM C207, Type S.
   2. Grout Aggregate: ASTM C404.

D. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.

2.03 REINFORCEMENT AND ANCHORAGE

A. Reinforcing Steel: Type specified in Section 03 2000; size as indicated on drawings; uncoated finish.

2.04 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints. See Project Plans for additional control joint requirements.

B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.

C. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.05 MORTAR AND GROUT MIXING

A. Mortar
   1. Mix cementitious materials and aggregates between 3 and 5 minutes in a mechanical batch mixer with a sufficient amount of water to produce a workable consistency. Do not hand

mix mortar. Maintain workability of mortar by remixing or retempering. Discard mortar which has begun to stiffen or is not used within 2-1/2 hours after initial mixing.

2. Limit the weight of mineral oxide or carbon black pigments added to project-site prepared mortar to the following maximum percentages by weight of cement:
   a. Pigmented portland cement-lime mortar
      1) Mineral oxide pigment = 10 percent
      2) Carbon black pigment = 2 percent
   b. Pigmented mortar cement mortar
      1) Mineral oxide pigment = 5 percent
      2) Carbon black pigment = 1 percent
   c. Pigmented masonry cement mortar
      1) Mineral oxide pigment = 5 percent
      2) Carbon black pigment = 1 percent

      Do not add mineral oxide or carbon black pigment to preblended colored mortar or colored cement.
3. Do not use admixtures containing more than 0.2 percent chloride ions

B. Grout
   1. Except for self-consolidating grout, mix grout in accordance with the requirements of ASTM C476.
   2. Unless otherwise required, mix grout other than self-consolidating grout to a consistency that has a slump between 8 and 11 inches.
   3. Proportioning of self-consolidating grout at the project site is not permitted. Do not add water at the project site except in accordance with the self-consolidating grout manufacturer's recommendations.

C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.
   1. Include verification that foundations are constructed within a level alignment tolerance of +/- 1/2 inch.

B. Verify that related items provided under other sections are properly sized and located.
   1. Include verification that reinforcing dowels are positioned in accordance with the project drawings.

C. If stated conditions are not met notify the Architect and Engineer of Record.

3.02 PREPARATION

A. Clean reinforcement and shanks of anchor bolts by removing mud, oil, or other materials that will adversely affect or reduce bond at the time mortar or grout is placed. Reinforcement with rust, mill scale, or both are acceptable without cleaning or brushing provided that the dimensions, of a cleaned sample are not less than required by the ASTM specification

governing the reinforcement.

B. Prior to placing masonry, remove laitance, loose aggregate, and anything else that would prevent mortar from bonding to the foundation.

C. Wetting Masonry units
   1. Concrete Masonry - Unless otherwise required, do not wet concrete masonry before laying. Wet cutting is permitted.

D. Debris - Construct grout spaces free of mortar dropping, debris, loose aggregates, and any material deleterious to masonry grout.

E. Reinforcement - Place reinforcement and ties in grout spaces prior to grouting

F. Cleanouts - Provide cleanouts in the bottom course of masonry for each grout pour when grout pour exceeds 5 ft 4 in.
   1. Construct cleanouts so that the space to be grouted can be cleaned and inspected. In solid grouted masonry, space cleanout horizontally a maximum of 32 inches on center.
   2. Construct cleanouts with an opening of sufficient size to permit removal of debris. The minimum opening dimension shall be 3 in.
   3. After cleaning, close cleanouts with closures braced to resist grout pressure.

3.03 COLD AND HOT WEATHER REQUIREMENTS

A. Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

3.04 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
   1. Bond: Running. Unless Otherwise required on the drawings
   2. Coursing: One unit and one mortar joint to equal 8 inches.

3.05 PLACING AND BONDING

A. Placing mortar units
   1. Mortar joints at foundations - In the starting course on the foundations and other supporting members, construct bed joints so that the bed joint thickness is a least /1/4 inch and not more than:
      a. 1-1/4" when the first course of masonry is solid grouted and supported by a concrete foundation.
   2. Bed and head joints - Unless otherwise required construct 3/8 in thick bed and head joints except at foundation. Construct joints that also conform to the following
      a. Fill holes not specified in exposed and below grade masonry with mortar.
      b. Unless otherwise required, tool joint with a round jointer when the mortar is thumbprint hard.

c. Remove masonry protrusions extending 1/2 inch or more into cells or cavities to be grouted.

3. Hollow units - Place hollow units so:
   a. Face shells of bed joints are fully mortared
   b. Webs are fully mortared in:
      1) all courses of piers, columns and pilasters;
      2) when necessary to confine grout or insulation.
   c. Head joints are mortared, a minimum distance from each face equal to the face shell thickness of the unit.
   d. Vertical cells to be grouted are aligned and unobstructed openings for grout are provided in accordance with the project drawings.
4. Open units with beveled ends - Fully grout open-end units with beveled ends. Head joints of open-end units with beveled ends need not be mortared. At the beveled ends, form a grout key that permits grout within 5/8 inch of the face of the unit to prevent leakage of grout.
5. All Units
   a. Place clean units while the mortar is soft and plastic. Remove and re-lay in fresh mortar any unit disturbed to the extent that the initial bond is broken after initial positioning.
   b. Cut exposed edges or faces of masonry units smooth, or position so that exposed faces or edges are unaltered manufactured surfaces.
   c. When the bearing of a masonry wythe on its support is less than two-thirds of the wythe thickness, notify the Architect and Engineer of Record.

B. Embedded items an accessories - Install embedded items and accessories as follows:
   1. Construct chases as masonry units are laid
   2. Install pipes and conduits passing horizontally through masonry partitions.
   3. Place pipes and conduits passing horizontally through piers, pilasters, or columns
   4. Place horizontal pipes and conduits in and parallel to plane of walls
   5. Install secure connectors, flashing, weep holes, weep vents, nailing blocks, and other accessories.
   6. Install movement joints.
   7. Aluminum - Do not embed aluminum conduits pipes and accessories in masonry, grout or mortar unless they are effectively coated or isolated to prevent chemical reaction between aluminum and cement or electrolytic action between aluminum and steel.

C. Bracing of masonry - Design, provide and install bracing that will assure stability of masonry during construction.

D. Site tolerances - Erect masonry within the following tolerances from the specified dimensions.
   1. Dimension of elements
      a. In cross section or elevation (-1/4 in., +1/2 in.)
      b. Mortar joint thickness
         bed joints between masonry courses (+ 1/8 in)
         bed joint between flashing and masonry (-1/2 in., +1/8 in.)
         head (-1/4 in., +3/8 in.)
      c. Grout space or cavity width, except for masonry walls passing framed construction (-1/4 in., +3/8 in.)
   2. Elements
      a. Variation from level
         bed joints (+/- 1/4 in. in 10 ft, +/- 1/2 in. maximum)

top surface of load bearing walls (+/- 1/4 in. in 10 ft, +/- 1/2 in. maximum)
b. Variation from plumb (+/- 1/4 in. in 10 ft, +/- 3/8 in. in 20 ft,+/- 1/2 in. maximum)
c. True to a line (+/- 1/4 in. in 10 ft, +/- 3/8 in. in 20 ft,+/- 1/2 in. maximum)
d. Alignment of columns and walls (bottom versus top) (+/- 1/2 in. for load bearing walls and columns., +/- 3/4 in. for non-load bearing walls)

3. Location of elements
   a. Indicated in plan (+/- 1/2 in. in 20 ft, +/- 3/4 in. maximum)
   b. Indicated in elevation (+/- 1/4 in. in story height +/- 3/4 in. maximum)
   c. If the above conditions cannot be met due to previous construction, notify the Architect and Engineer of Record.
   d. Reinforcement, tie, and anchor installation

3.06 REINFORCEMENT, TIE AND ANCHOR INSTALLATION

A. Basic requirements - Place reinforcement, wall ties and anchors in accordance with the sizes, types, and locations indicated on the Project Drawings and as specified. Do not place dissimilar metals in contact with each other.

B. Reinforcement
   1. Support reinforcement to prevent displacement caused by construction loads or by placement of grout or mortar, beyond the allowable tolerances.
   2. Completely embed reinforcing bars in grout in accordance with the Section entititled grout placement.
   3. Maintain clear distance between reinforcing bards and the interior of masonry unity or formed surface of at least 1/4 inch for fine grout and 1/2 inch for coarse grout, except where cross webs of hollow units are used as supports for horizontal reinforcement.
   4. Place reinforcing bars maintining the following minimum cover:
      a. Masonry face exposed to earth or weather 2 in for bars larger than No. 5, 1-12/ in. for No. 5 bars or smaller.
      b. Masonry not exposed to earth or weather 1-1/2 in.
   5. Maintain minimum clear distance between parallel bars of the nominal bar size or 1 in., whichever is greater.
   6. In columns and pilasters, maintain minimum clear distance between vertical bars of one and one-half times the nominal bar size or 1-1/2 in., whichever is greater.
   7. Splice only where indicated on the Project Drawings, unless otherwise acceptable. When splicing by welding, provide welds in conformance with the provisions of AWS D1.4.
   8. Do not bend reinforcement after it is embedded in grout or mortar without approval from the Engineer of Record.
   9. Noncontact lap splices - Postion bars spliced by noncontact lap splices no farther apart transversely than one-fift the specified length of lap nor more than 8 in.
   10. Joint reinforcement
      a. Place joint reinforcement so that longitudinal wires are embedded in mortar with a minimum cover of 1/2 in. when not exposed to weather or earth; or 5/8 in. when exposed to weather or earth.
      b. Provide minimum 6 in. lap splice for joint reinforcement.
      c. Ensure that all ends of longitudinal wires of joint reinforcement at laps are embedded in mortar or grout.
   11. Placement tolerances
      a. Place reinforcing bars in walls and flexural elements within a tolerance of +/- 1/2 in. when the distance from the centerline of reinforcing bars to the opposite face of masonry, d, is equal to 8 in. or less, +/- 1in. for d equal to 24 in. or less but greater

than 8 in., and 1-1/4 in. for d greater than 24 in.

b. Place vertical bars within:
   1) 2 in. of the required location along the length of the wall when the wall segment length exceeds 24 in.
   2) 1 in. of the required location along the length of the wall when the wall segment length does not exceed 24 in
   3) If it is necessary to move bars more than one bar diameter or a distance exceeding the tolerance stated above to avoid interference with other reinforcing steel, conduits, or embedded items notify the Engineer of Record.
   4) Foundation dowels that interfere with unit webs are permitted to be be bent to a maximum of 1 in. horizontally for every 6 in. of vertical height.

C. Anchor bolts
   1. Embed headed and bent-bar anchor bolts larger than 1/4 in. diameter in grout that is placed in accordance with Section 3.06A and Section 3.06B. Anchor bolts of 1/4 in.diameter or less are permitted to be placed in grout or mortar bed joints that have a specified thickness of at least 1/2 in. thickness.
   2. For anchor bolts placed in the top of grouted cells and bond beams, maintain a clear distance between the bolt and the face of masonry unit of at least 1/4 in. when using fine grout and 1/2 in. when using coarse grout.
   3. For anchor bolts placed throught the face shell of a hollow masonry unit, drill a hole that is tight-fitting to the bolt or provide minimum clear distance that conforms to Section 3.05D.2 around the bolt and through the face of the shell. For the portion of the bolt that is within the grouted cell, maintain a clear distance between the bolt and the face of masonry unit and between the head or bent leg of the bolt and the formed surface of grout of at least 1/4 in. when using fine grout and at least 1/2 in when using coarse grout.
   4. Place anchor bolt with a clear distance between parallel anchor bolts not less than the nominal diameter of the anchor bolt, nor less than 1 in.

3.07 GROUT PLACEMENT

A. Placing time - Place grout wihin 1-1/2 hr from introducing water in the mixture and prior to initial set.
   1. Discard site-mixed grout that does not meet the specified slump without adding water after initial mixing.
   2. For ready-mixed grout:
      a. Addition of water is permitted at the time of discharge to adjust slump.
      b. Discard ready mixed grout that does not meet the specified slump without adding water, other than the water that was added at the time of discharge.
      The time limit is waived as long as the ready mixed grout meets the specified slump.

B. Confinement - Confine grout to the areas indicated on the project drawings. Use material to confine grout that permits bond between masonry units and mortar.

C. Grout pour height - Do not exceed the maximum grout pour height given in the Table below

Grout Type (1)	Maximum grout pour height, ft	Minimum clear width of grout space, in (2,3)	Minimum clear grout space dimensions for grouting cells of hollow units, in x in (3,4,5)
Fine	1	3/4	1-1/2x2
Fine	5.33	2	2x3

Fine	12.67	2-1/2	2-1/2x3
Fine	24	3	3x3
Coarse	1	3/4	1-1/2x3
Coarse	5.33	2	2-1/2x3
Coarse	12.67	2-1/2	3x3
Coarse	24	3	3x4

1. Fine and course grouts are defined by ASTM C476.
2. For grouting between masonry wythes.
3. Minimum clear width of grout space and minimum clear grout space dimension are the net dimension of the space determined by subtracting masonry protrusions and the diameters of horizontal bars from the as-built cross section of the grout space. Select grout type and maximum grout pour height based on minimum clear space.
4. Area of vertical reinforcement shall not exceed 6 percent of the area of the grout space.

D. Grout lift height
   1. For grout conforming to Section 2.02B
      a. Where the following conditions are met, place grout in lifts not exceeding 12 ft 8 in.
         1) The masonry has cured at least 4 hours
         2) The grout slump is maintained between 10 and 11 in.
         3) No intermediate reinforced bond beams are placed between the top and the bottom of the pour height
      b. When conditions 1 and 2 are met but there are intermediate bond beams within the grout pour, limit the grout lift height to the bottom of the lowest bond beam that is more than 5 ft. 4 in. above the bottom of the lift, but do not exceed a grout lift height of 12 ft. 8 in.
      c. When the conditions of 1 or 2 are not met, place grout in lifts not excedding 5 ft. 4 in.
   2. For self-consolidating grout conforming to Section 2.02B:
      a. When placed in masonry that has cured for at least 4 hours, place in lifts not exceeding the grout pour height.
      b. When placed in masonry that has not cured for at least 4 hours, place in lifts not exceeding 5 ft. 4 in. or the grout pour height, whichever is less.

E. Consolidation
   1. Consolidate grout at the time of placement.
      a. Consolidate grout pours 12 in. or less in height by mechanical vibration or by puddling.
      b. Consolidate pours exceeding 12 in in height by mechanical vibration, and reconsolidate by mechanical vibration after initial water loss and settlement has occurred.
   2. Consolidation or reconsolidation is note required for self-consolidating grout.

F. Grout key - When grouting, form grout keys between grout pours. Form grout keys between grout lifts when the first lift is permitted to set prior to placement of the subsequent lift.
   1. Form a grout key by terminating the grout a minimum of 1-1/2 in. below a mortar joint.
   2. Do not form grout keys within beams.
   3. At beams or lintels laid with closed bottom units, terminate the grout pour at the bottom of the beam or lintel without forming a grout key.
   4. Alternate grout placement - Place masonry units and grout using construction procedures emploiyed in the accepted grout demonstration panel.

G. Lap splices minimum 24 bar diameters.

H. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

I. Place and consolidate grout fill without displacing reinforcing.

3.08 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

3.09 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.

B. Verify f'm and f'AAC in accordance with Section 1.05

C. Sample and test grout as required in Section 1.04 and 1.05.

3.10 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

E. Remove debris

F. Do not damage the masonry

3.11 PROTECTION

A. Protect adjacent construction and in place masonry against damage.

B. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

Section 04 2613
Masonry Veneer

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Clay facing brick.

B. Mortar and grout.

C. Reinforcement and anchorage.

D. Flashings.

E. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 07 6200 - Sheet Metal Flashing and Trim: Through-wall masonry flashings.

B. Section 07 9200 - Joint Sealants: Sealing control and expansion joints.

C. Section 09 9113 - Exterior Painting: Graffiti Resistant Treatment

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.

B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.

C. ASTM C91/C91M - Standard Specification for Masonry Cement; 2018.

D. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006 (Reapproved 2011).

E. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale); 2014.

F. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.

G. ASTM C476 - Standard Specification for Grout for Masonry; 2010.

H. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2017.

I. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing; 2005.

J. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls; 2005.

K. BIA Technical Notes No. 46 - Maintenance of Brick Masonry; 2005.

L. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2016.

1.04 ADMINISTRATIVE REQUIREMENTS

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Provide data for masonry units, fabricated wire reinforcement, and mortar.

C. Samples: Submit four samples of decorative block and facing brick units to illustrate color, texture, and extremes of color range.

D. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

E. Maintenance Materials: Furnish the following for City's use in maintenance of project.
1. See Section 01 6000 - Product Requirements, for additional provisions.

1.06 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

B. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.

C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.07 MOCK-UP

A. Construct a masonry wall as a mock-up panel sized 8 feet long by 6 feet high; include mortar and accessories and structural backup in mock-up.

B. Locate where directed.

C. Mock-up may remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

1.09 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

B. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.

C. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

PART 2 PRODUCTS

2.01 UNIT MASONRY - GENERAL

2.02 BRICK UNITS

A. Manufacturers:
   1. H.C. Muddox;https://www.hcmuddox.com/.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Facing Brick: ASTM C216, Type FBS Smooth, Grade SW.
   1. Color and Texture: 95/5 Blend
      a. 95% Old Sacramento Blend
      b. 5% Clinker - Tubmle to match level of tumbling of Old Sacramento Blend
   2. Nominal Size: Standard - 2-1/2 x 8 inch..
      a. 3/4" thin brick veneer
      b. Approx. 1" thin brick veneer - solid, non cored, full brick cut in half at soldier course.
      c. Full brick veneer with anchoage attachment where indicated
   3. Special Shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.

2.03 MORTAR AND GROUT MATERIALS

A. Masonry Cement: ASTM C91/C91M Type S.
   1. Product: Spec Mix Polymer Modified AVM Mortar.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Hydrated Lime: ASTM C207, Type S.
   1. Color: Grey

C. Water: Clean and potable.

2.04 REINFORCEMENT AND ANCHORAGE

A. Reinforcing Steel: ASTM A615/A615M, Grade 40 (40,000 psi) yield strength, deformed billet bars; galvanized.

B. Joint Reinforcement Type: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.

C. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
   1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
   2. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.
   3. Vertical adjustment: Not less than 3-1/2 inches.

2.05 FLASHINGS

A. Metal Flashing Materials: Galvanized Steel or prefinsihed flashing, as specified in Section 07 6200 or as indicated on the drawings.

2.06 ACCESSORIES

A. Building Paper: ASTM D226/D226M, Type I ("No. 15") asphalt felt.

B. Weeps:
   1. Type: Preformed aluminum vents with sloping louvers.
   2. Color(s): As selected by Architect from manufacturer's full range to complement brick veneer.

C. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.07 MORTAR AND GROUT MIXING

A. Mortar for Unit Masonry: ASTM C270, Proportion Specification.
   1. Masonry below grade and in contact with earth; Type S.

B. Grout: ASTM C476; consistency as required to fill volumes completely for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Brick Units:
   1. Bond: Running.
   2. Coursing: Three units and three mortar joints to equal 8 inches.
   3. Mortar Joints: Concave.

3.03 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

D. Remove excess mortar as work progresses.

E. Interlock intersections and external corners, except for units laid in stack bond.

F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

G. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

H. Isolate top joint of masonry veneer from horizontal structural framing members or support angles with compressible joint filler.

3.04 WEEPS/CAVITY VENTS

A. Install weeps in veneer walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

3.05 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

A. Install horizontal joint reinforcement 12 inches on center.

B. Place continuous joint reinforcement in first and second joint below top of walls.

C. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.

D. Lap joint reinforcement ends minimum 6 inches.

E. Reinforce joint corners and intersections with strap anchors 16 inches on center.

3.06 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.

1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up at least 1 inch, minimum, to form watertight pan at non-masonry construction.
2. Remove or cover protrusions or sharp edges that could puncture flashings.
3. Seal lapped ends and penetrations of flashing before covering with mortar.

B. Terminate flashing up 8 inches minimum on vertical surface of backing:

C. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

3.07 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Form control joint with a sheet building paper bond breaker fitted to one side of the hollow contour end of the block unit. Fill the resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.

C. Size control joints as indicated on drawings; if not indicated, 3/4 inch wide and deep.

D. Locate control joints at intervals recommended by manufacturer. Verify location with architecte prior to installation.

3.08 TOLERANCES

A. Install masonry within the site tolerances found in TMS 402/602.

B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

3.09 CUTTING AND FITTING

A. Cut and fit for pipes and conduit. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.10 CLEANING

A. Remove excess mortar and mortar smears as work progresses.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.11 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

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Section 05 1200
Structural Steel Framing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural steel framing members.

B. Structural steel support members and struts.

C. Base plates, shear stud connectors and expansion joint plates.

D. Grouting under base plates.

1.02 RELATED REQUIREMENTS

A. Section 05 2100 - Steel Joist Framing.

B. Section 05 5000 - Metal Fabrications: Steel fabrications affecting structural steel work.

1.03 REFERENCE STANDARDS

A. AISC (MAN) - Steel Construction Manual; 2011.

B. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges; 2016.

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

D. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.

E. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold Finished; 2013.

F. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.

G. ASTM A242/A242M - Standard Specification for High-Strength Low-Alloy Structural Steel; 2004 (Reapproved 2009).

H. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2014.

I. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2013.

J. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel; 2015.

K. ASTM A992/A992M - Standard Specification for Structural Steel Shapes; 2011 (Reapproved 2015).

L. ASTM E94/E94M - Standard Guide for Radiographic Examination Using Industrial Radiographic Film; 2017.

M. ASTM E164 - Standard Practice for Contact Ultrasonic Testing of Weldments; 2013.

N. ASTM E165/E165M - Standard Test Method for Liquid Penetrant Examination for General Industry; 2012.

O. ASTM E709 - Standard Guide for Magnetic Particle Testing; 2015.

P. ASTM F436/F436M - Standard Specification for Hardened Steel Washers Inch and Metric Dimensions; 2016.

Q. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength; 2007a.

R. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2012.

S. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2014.

T. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

U. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel; International Accreditation Service, Inc.; 2011.

V. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 1999 (Ed. 2004).

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Shop Drawings:
   1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.
   2. Connections not detailed.
   3. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths.

C. Manufacturer's Mill Certificate: Certify that products meet or exceed specified requirements.

D. Mill Test Reports: Indicate structural strength, destructive test analysis and non-destructive test analysis.

E. Materials Test Reports: Submit independent test results or engineered performance analysis of structural thermal-break pad performance in bearing or slip-critical connections where shear and moment loads are applied.

F. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.

G. Fabricator's Qualification Statement.

1.05 QUALITY ASSURANCE

A. Fabricate structural steel members in accordance with AISC (MAN) "Steel Construction Manual."

B. Structural steel members designated as architecturally-exposed structural steel (AESS) to also comply with Section 05 1213.

C. Maintain one copy of each document on site.

D. Fabricator: Company specializing in performing the work of this section with minimum two years of documented experience.

E. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and no more than 12 months before start of scheduled welding work.

F. Fabricator Qualifications: A qualified steel fabricator that is accredited by the International Accreditation Service (IAS) Fabricator Inspection Program for Structural Steel in accordance with IAS AC172. Where IAS certification isn't available, additional Special Inpections shall be required, paid for by the owner.

G. Erector: Company specializing in performing the work of this section with minimum two years of documented experience.

PART 2 PRODUCTS

2.01 MATERIALS

A. Steel Angles and Plates: ASTM A36/A36M.

B. Steel W Shapes and Tees: ASTM A992/A992M.

C. Rolled Steel Structural Shapes: ASTM A992/A992M.

D. Steel Plates and Bars: ASTM A572/A572M, Grade 50 (345) high-strength, columbium-vanadium steel.

E. Cold-Formed Structural Tubing: ASTM A500/A500M, Grade B.

F. Pipe: ASTM A53/A53M, Grade B, Finish black.

G. Structural Bolts and Nuts: Carbon steel, ASTM A307, Grade A and galvanized in compliance with ASTM A153/A153M Class C.

H. Headed Anchor Rods: ASTM F1554 Grade 36, plain.

I. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

J. Grout: ASTM C1107/C1107M; Non-shrink; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
   2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch.

2.02 FABRICATION

A. Shop fabricate to greatest extent possible.

2.03 FINISH

A. Shop prime structural steel members. Do not prime surfaces that will be fireproofed, field welded, in contact with concrete, or high strength bolted.

2.04 SOURCE QUALITY CONTROL

A. Welded Connections: Visually inspect all shop-welded connections and test all complete penetration welds and at least ten percent of fillet welds using one of the following:
   1. Radiographic testing performed in accordance with ASTM E94/E94M.
   2. Ultrasonic testing performed in accordance with ASTM E164.
   3. Liquid penetrant inspection performed in accordance with ASTM E165/E165M.
   4. Magnetic particle inspection performed in accordance with ASTM E709.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

3.02 ERECTION

A. Erect structural steel in compliance with AISC 303.

3.03 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

3.04 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.

B. Welded Connections: Visually inspect all field-welded connections and test all complete penetration welds and at least ten percent of welds using one of the following:
   1. Radiographic testing performed in accordance with ASTM E94/E94M.
   2. Ultrasonic testing performed in accordance with ASTM E164.
   3. Liquid penetrant inspection performed in accordance with ASTM E165/E165M.
   4. Magnetic particle inspection performed in accordance with ASTM E709.

END OF SECTION

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Section 05 4000
Cold-Formed Metal Framing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Formed steel stud exterior wall and interior wall framing.

B. Exterior wall sheathing.

C. Formed steel joist and purlin framing and bridging.

1.02 RELATED REQUIREMENTS

A. Section 051200: Structural building framing.

1.03 REFERENCE STANDARDS

A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members; 2016.

B. AISI SG02-1 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2001 with 2004 supplement. (replaced SG-971)

C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.

E. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2015.

F. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2011a.

G. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

H. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 1999 (Ed. 2004).

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with work of other sections that is to be installed in or adjacent to the metal framing system, including but not limited to structural anchors, cladding anchors, utilities, insulation, and firestopping.

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Provide data on standard framing members; describe materials and finish, location in project, product criteria, limitation.

C. Shop Drawings: Indicate component details, framed openings, bearing, anchorage, loading, welds, and type and location of fasteners, and accessories or items required of related work.
   1. Indicate stud and ceiling joist layout.
   2. Describe method for securing studs to tracks and for bolted framing connections.

D. Manufacturer's Installation Instructions: Indicate special procedures, conditions requiring special attention .

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, and with minimum three years of documented experience.

B. Manufacturer Qualifications: Member of Steel Stud Manufacturers Association (SSMA): www.ssma.com/#sle.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Framing:
   1. CEMCO: www.cemcosteel.com/#sle.
   2. ClarkDietrich: www.clarkdietrich.com/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Framing Connectors and Accessories:
   1. Same manufacturer as metal framing.

2.02 FRAMING SYSTEM

A. Provide primary and secondary framing members, bridging, bracing, plates, gussets, clips, fittings, reinforcement, and fastenings as required to provide a complete framing system.

2.03 FRAMING MATERIALS

A. Studs and Track: ASTM C955; studs formed to channel, C- or Sigma-shaped with punched web; U-shaped track in matching nominal width and compatible height.
   1. Gauge and Depth: As indicated on drawings.
   2. Products:
      a. CEMCO; ProX Header: www.cemcosteel.com/#sle.

B. Joists and Purlins: Fabricated from ASTM A1008/A1008M Designation SS (structural steel) sheet, shop painted.
   1. Gauge and Depth: As indicated on drawings.
   2. Finish: Manufacturer's standard, rust-inhibitive paint.

C. Framing Connectors: Factory-made, formed steel sheet.
   1. Material: ASTM A653/A653M SS Grade 33 and 40 (minimum), with G90/Z275 hot dipped galvanized coating for base metal thickness less than 10 gauge, 0.1345 inch, and factory punched holes and slots.
   2. Structural Performance: Maintain load and movement capacity required by applicable code, when evaluated in accordance with AISI S100.
   3. Fixed Connections: Provide non-movement connections for tie-down to foundation, floor-to-floor tie-down, roof-to-wall tie-down, joist hangers, gusset plates, and stiffeners.

2.04 FASTENERS

A. Self-Drilling, Self-Tapping Screws, Bolts, Nuts and Washers: Hot dip galvanized per ASTM A153/A153M.

B. Anchorage Devices: Powder actuated.

C. Welding: Comply with AWS D1.1/D1.1M.

2.05 ACCESSORIES

A. Bracing, Furring, Bridging: Formed sheet steel, thickness determined for conditions encountered; finish to match framing components.

B. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION OF STUDS

A. Install components in accordance with ASTM C1007 requirements and ASTM C1007 requirements.

3.03 INSTALLATION OF JOISTS AND PURLINS

A. Install framing components in accordance with manufacturer's instructions.

B. Make provisions for erection stresses. Provide temporary alignment and bracing.

END OF SECTION

Section 05 5000
Metal Fabrications

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated steel and aluminum items.

B. Ventilation Screens

C. Metal Roof Accessories - Fineals, Fasica Brackets, Overhand Support Brackets etc.

1.02 RELATED REQUIREMENTS

A. Section 05 1200 - Structural Steel Framing: Structural steel

B. Section 09 9113 - Exterior Painting: Paint finish.

1.03 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

B. ASTM A48/A48M - Standard Specification for Gray Iron Castings; 2003 (Reapproved 2012).

C. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.

D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.

E. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2013.

F. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2014.

G. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2014.

H. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.

I. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2013.

J. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions; 2015a.

K. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

L. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 1999 (Ed. 2004).

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

C. Designer's Qualification Statement.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.

C. Plates: ASTM A283/A283M.

D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.

E. Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.

F. Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.

G. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.

H. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

I. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

2.02 MATERIALS - ALUMINUM

A. Extruded Aluminum: ASTM B 221 (ASTM B 221M), 6063 alloy, T6 temper.

B. Bolts, Nuts, and Washers: Stainless steel.

2.03 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

D. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.04 FABRICATED ITEMS

A. Ventilation Screens:
   1. Size: As indicated on the drawings
   2. Thickness: As indicated on the drawings
   3. Pattern: Custom cut pattern as designed by architect and fabricator
   4. Finish: To match decorative steel light fixtures as manufactured by Steven Handelman Studios

B. Steel roof overhang knee bracket: Steel pipe, angle, and plate as detailed on drawings
   1. Size: As indicated on the drawings
   2. Thickness: As indicated on the drawings
   3. Pattern: Custom cut pattern as designed by architect and fabricator
   4. Finish: To match decorative steel light fixtures as manufactured by Steven Handelman Studios

C. Roof and fasia finials: Steel pipe, angle, sheet, and plate as detailed on drawings
   1. Size: As indicated on the drawings
   2. Thickness: As indicated on the drawings
   3. Pattern: Custom cut pattern as designed by architect and fabricator
   4. Finish: To match decorative steel light fixtures as manufactured by Steven Handelman Studios, roofing or building siding . Finish to be approved by architect and city engineer priore to fabrication.

2.05 DECORATIVE METAL HANDRAILS, FENCE AND BAR COUNTER

A. Mission Style Railing: Per City Standard Detail 4240

B. Handrails
   1. Material: Steel and bronze
   2. Manufacturer: Julius Blum, www.juliusblum.com
   3. Product Numbers:
      a. 4428 - Steel Handrail Moulding
      b. 340 - Steel with Bronze Center Post
      c. 3/8"x1 1/4" flat bar per detail
      d. 481 - Round Hole Post Base
      e. 4428 S - Straight Lamb's Tounge
   4. Finish: Shop primed and painted matte black with epoxy paint, Pro Insustrial Water Based Catalyzed Epoxy or approved equal.
   5. Fabricator: Jeff Thies, Thiessen Design 805-547-1947 www.thiessendesign.com

C. Fence and Planter Fence
   1. Material: Steel and Bronze

2. Manufacturer: Julius Blum, www.juliusblum.com
3. Product Numbers:
   a. 340 - Steel with Bronze Center Post
   b. 337 - Steel and Bronze Spindle
   c. 481 - Round Hole Post Base
   d. 971 - Ornamental Valance
   e. 4428 - Steel Handrail Moulding including terminal, center and corner pieces with urn bases at posts
   f. 3/8"x1 1/4" flat bar per detail
   g. 3/4" steel bar
   h. 1/2" picket
   i. 1" O.D. x 1/4" steel post
4. Fabricator: Jeff Thies, Thiessen Design 805-547-1947

D. Bar Counter
1. Material: Steel
2. Components: As specified in the detail
3. Finish: Hot Dip Galvanized and painted matte black with epoxy paint.
4. Fabricator: Jeff Thies, Thiessen Design 805-547-1947

PART 3 EXECUTION

4.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

4.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

4.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Perform field welding in accordance with AWS D1.1/D1.1M.

D. Obtain approval prior to site cutting or making adjustments not scheduled.

E. After erection, prime welds, abrasionsand surfaces not shop primed or galvanized , except surfaces to be in contact with concrete.

F. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply or brush or spray to provide minimum dry film thickness of 0.051 mm (2.0 mils).

G. At all galvanized products, clean all damaged areas and re-coat using specified galvanizing coating per manufacturer's criteria.

4.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

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Section 07 1113
Bituminous Dampproofing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Bituminous dampproofing.

B. Protection boards.

1.02 RELATED REQUIREMENTS

A. Section 04 2613 - Masonry Veneer

1.03 REFERENCE STANDARDS

A. ASTM D41/D41M - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing; 2011.

B. ASTM D1187/D1187M - Standard Specification for Asphalt-Base Emulsions for Use as Protective Coatings for Metal; 1997 (Reapproved 2011).

C. ASTM D1227/D1227M - Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing; 2019.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Provide properties of primer, bitumen, and mastics.

C. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

D. Installer's qualification statement.

1.05 FIELD CONDITIONS

A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application until dampproofing has cured.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Bituminous Dampproofing Manufacturers:

1. W. R. Meadows, Inc: www.wrmeadows.com/#sle.
2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 BITUMINOUS DAMPPROOFING

A. Bituminous Dampproofing: Cold-applied water-based emulsion; asphalt with mineral colloid or chemical emulsifying agent; with or without fiber reinforcement; asbestos-free; suitable for application on vertical and horizontal surfaces.
   1. Asphalt-Base Emulsion for Metal Protective Coating: ASTM D1187/D1187M, Type I - Continuous water exposure within few days after drying.
   2. Emulsified Asphalt for Roofing Protective Coating: ASTM D1227/D1227M, Type II, Class 1 - Mineral colloid emulsifying agents with non-asbestos fibers.
   3. VOC Content: Not more than permitted by local, State, and federal regulations.
   4. Applied Thickness: 1/8 inch, minimum, wet film.
   5. Products:
      a. W. R. Meadows, Inc; Sealmastic Emulsion Type II (brush/spray-grade): www.wrmeadows.com/#sle.
      b. Substitutions: See Section 01 6000 - Product Requirements.

B. Primers, Mastics, and Related Materials: Type as recommended by dampproofing manufacturer.

2.03 BITUMEN MATERIALS

A. Cold Asphaltic Type:
   1. Emulsified Asphalt: ASTM D1227/D1227M, with fiber reinforcement other than asbestos, Type II, Class 1 .
   2. Asphalt Primer: ASTM D41/D41M, compatible with substrate.

2.04 ACCESSORIES

A. Protection Board: 1/8-inch thick biodegradable hardboard or as required by the manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions are acceptable prior to starting this work.

B. Verify substrate surfaces are durable, free of matter detrimental to adhesion or application of dampproofing system.

C. Verify that items penetrating surfaces to receive dampproofing are securely installed.

3.02 PREPARATION

A. Protect adjacent surfaces not designated to receive dampproofing.

B. Clean and prepare surfaces to receive dampproofing in accordance with manufacturer's instructions.

C. Do not apply dampproofing to surfaces unacceptable to manufacturer.

D. Apply mastic to seal penetrations, small cracks, or minor honeycombs in substrate.

3.03 APPLICATION

A. Perform this work in accordance with manufacturer's instructions and NRCA (WM) applicable requirements.

B. Ensure accessory materials are compatible with membrane and approved by membrane manufacturer.

C. Apply bitumen in accordance with manufacturer's written recommendations .

D. Apply from finish grade elevation down to top of footings. Do not extend onto surfaces exposed to view when project is complete

E. Seal items watertight with mastic, that project through dampproofing surface.

F. Place protection board directly over dampproofing, butt joints, and adhere to tacky dampproofing.

G. Scribe and cut boards around projections, penetrations, and interruptions.

3.04 CLEANING

A. Remove dampproofing materials from surfaces not intended to receive dampproofing.

3.05 PROTECTION

A. Protect membrane with immediate application of protection course if no drainage system is used or rolled matrix drainage system.

B. Backfill within 24 - 48 hours using care to avoid damaging the dampproofing.

END OF SECTION

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Section 07 1300
Sheet Waterproofing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Self-adhered modified bituminous sheet membrane.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Concrete substrate.

1.03 REFERENCE STANDARDS

A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2006a (Reapproved 2013).

B. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting; 2012.

C. ASTM D5385/D5385M - Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes; 1993 (Reapproved 2014).

D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2021.

E. NRCA (WM) - The NRCA Waterproofing Manual; 2005.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Provide data for membrane.

C. Manufacturer's Installation Instructions: Indicate special procedures.

D. Warranty: Submit manufacturer warranty and ensure forms have been completed in City's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 FIELD CONDITIONS

A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application and until liquid or mastic accessories have cured.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Contractor to correct defective Work within period of five years after Date of Substantial Completion; remove and replace materials concealing waterproofing at no extra cost to City.

C. Provide five year manufacturer warranty for waterproofing failing to resist penetration of water, except where such failures are the result of structural failures of building. Hairline cracking of concrete due to temperature change or shrinkage is not considered a structural failure.

PART 2 PRODUCTS

2.01 SHEET WATERPROOFING APPLICATIONS

A. Self-Adhered Modified Bituminous Sheet Membrane:
   1. Location: Back of site retaining walls and at adobe foundation.

2.02 SHEET WATERPROOFING MATERIALS

A. Self-Adhered Modified Bituminous Sheet Membrane:
   1. Thickness: 60 mil, 0.060 inch, minimum.
   2. Sheet Width: 36 inches, minimum.
   3. Tensile Strength:
      a. Film: 5900 psi , minimum, measured in accordance with ASTM D882 and at grip-separation rate of 2 inches per minute.
      b. Membrane: 460 psi, minimum, measured in accordance with ASTM D412 Method A, using die C and at spindle-separation rate of 2 inches per minute.
   4. Elongation at Break: 300 percent, minimum, measured in accordance with ASTM D412.
   5. Water Vapor Permeance: .036 perm, maximum, measured in accordance with ASTM E96/E96M.
   6. Hydrostatic Pressure Resistance: Membrane resists leakage for at least one hour from pressure equivalent to 200 feet head of water applied in accordance with test method ASTM D5385/D5385M.
   7. Adhesives, Sealants, Tapes, and Accessories: As recommended by membrane manufacturer.
   8. Products:
      a. W.R. Meadows, Inc; MEL-ROL: www.wrmeadows.com/#sle.
      b. Substitutions: See Section 01 6000 - Product Requirements.

2.03 ACCESSORIES

A. Waterproofing accessories for retaining walls shall be a complete system from the manufacturer of the membrane.

B. Seaming Materials: As recommended by membrane manufacturer.

C. Membrane Sealant: As recommended by membrane manufacturer.

D. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrates and waterproofing materials.

E. Protection Board: Provide type capable of preventing damage to waterproofing due to backfilling and construction traffic.
   1. Polystyrene foam board, 1/4" inch thick.
   2. Products:
      a. Dow Protection Board III.
      b. Substitutions: See Section 01 6000 - Product Requirements.

F. Drainage Panel: Drainage layer with geotextile filter fabric on earth side.
   1. Composition: Dimpled polystyrene, polyethylene, or polypropylene core; polypropylene filter fabric.
   2. Thickness: 1/4 inch.
      a. Products:
         1) W.R. Meadows, Inc; Mel-Drain 5012: www.wrmeadows.com/#sle.
         2) Substitutions: See Section 01 6000 - Product Requirements.

G. Flexible Flashings: Type recommended by membrane manufacturer.

H. Adhesives: As recommended by membrane manufacturer.

I. Additional sealnts and accessories as required by the manufacturer for a complete and watertight installation.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions are acceptable prior to starting work.

B. Verify substrate surfaces are durable; free of matter detrimental to adhesion or application of waterproofing system.

C. Verify that items penetrating surfaces to receive waterproofing are securely installed.

D. Do not proceed with work until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Protect adjacent surfaces from damage not designated to receive waterproofing.

B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions; vacuum substrate clean.

C. Do not apply waterproofing to surfaces unacceptable to membrane manufacturer.

D. Surfaces for Adhesive Bonding: Apply surface conditioner at a rate recommended by manufacturer, and protect conditioner from rain or frost until dry.

3.03 INSTALLATION - MEMBRANE

A. Install membrane waterproofing in accordance with manufacturer's instructions and NRCA (WM) applicable requirements.

B. Roll out membrane, and minimize wrinkles and bubbles.

C. Self-Adhering Membrane: Remove release paper layer, and roll out onto substrate with a mechanical roller to provide full contact bond.

D. Overlap edges and ends, minimum 3 inches, seal permanently waterproof by method recommended by manufacturer, and apply uniform bead of sealant to joint edge.

E. Reinforce membrane with multiple thickness of membrane material over joints, whether joints are static or dynamic.

F. Weather lap joints on sloped substrate in direction of drainage, and seal joints and seams.

G. Flexible Flashings: Seal items watertight that penetrate through waterproofing membrane with flexible flashings.

H. Seal membrane and flashings to adjoining surfaces.

3.04 INSTALLATION - DRAINAGE PANEL and PROTECTION BOARD

A. Place drainage panel directly against membrane, butt joints, place to encourage drainage downward; scribe and cut boards around projections, penetrations, and interruptions.

B. Place protection board directly against drainage panel; butt joints, and scribe and cut boards around projections, penetrations, and interruptions.

C. Adhere protection board to substrate with compatible adhesive.

3.05 PROTECTION

A. Do not permit traffic over unprotected or uncovered membrane.

END OF SECTION

Section 07 2500
Weather Barriers

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Water-resistive barriers.

1.02 RELATED REQUIREMENTS

A. Section 07 6200 - Sheet Metal Flashing and Trim: Metal flashings installed in conjunction with weather barriers.

B. Section 09 2236 - Lath: Second layer weather barrier installed as part of lath

1.03 DEFINITIONS

A. Weather Barriers: Assemblies that form either water-resistive barriers, air barriers, or vapor retarders.

B. Water-Resistive Barrier: A material behind an exterior wall covering that is intended to resist liquid water that has penetrated behind the exterior covering from further intruding into the exterior wall assembly.

1.04 REFERENCE STANDARDS

A. ASTM D779 - Standard Test Method for Water Resistance of Paper, Paperboard, and Other Sheet Materials by the Dry Indicator Method; 2003.

B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2021.

E. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials; 2013.

F. ASTM E2273 - Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies; 2003 (reapproved 2011).

G. ICC-ES AC38 - Acceptance Criteria for Water-Resistive Barriers; ICC Evaluation Service, Inc.; 2013.

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Provide data on material characteristics.

C. Manufacturer's Installation Instructions: Indicate preparation, installation methods, and storage and handling criteria.

1.06 MOCK-UPS

A. Construct weather barrier mock-up, 10 feet long by 10 feet wide, indicating instalation at penetrations, top of wall, and base of wall..

B. Locate where directed.

C. Mock-up may remain as part of work.

1.07 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

PART 2 PRODUCTS

2.01 WATER-RESISTIVE BARRIER MATERIALS

A. Drainable Barrier Sheet: Multi-layer nonwoven and nonperforated polpropylene with rain screen matrix bonded on back side.
   1. Width: 4.4 feet, minimum.
   2. Water Vapor Permeance: 19 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedure A - Desiccant Method, at 73.4 degrees F.
   3. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 180 days of weather exposure.
   4. Drainage gap: 3 mm minumum passing ASTM E2273
   5. Products:
      a. VaproShield: WrapShield RS: vaproshield.com - Basis of Design
      b. Tamlyn; TamlynWrap Rain Screen 6.3: www.tamlyn.com
      c. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ACCESSORIES

A. Sealants, Tapes, and Accessories Used for Sealing Water-Resistive Barrier and Adjacent Substrates: As indicated or complying with water-resistive barrier manufacturer's installation instructions.

B. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M, except slip resistance requirement is waived if not installed on a roof.
   1. Width: 4 inches.

C. Thinners and Cleaners: As recommended by water-resistive barrier manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and conditions comply with requirements of this section.

3.02 PREPARATION

A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's installation instructions.

3.03 INSTALLATION

A. Install materials in accordance with manufacturer's installation instructions.

B. Water-Resistive Barriers: Install continuous water-resistive barrier over surfaces indicated, with sheets lapped to shed water but with seams not sealed.

C. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
   1. Seal joint between slab or curb and wall above.

D. Mechanically Fastened Exterior Sheets:
   1. Install sheets shingle-fashion to shed water, with seams aligned horizontal.
   2. Overlap seams as recommended by manufacturer, 6 inches, minimum.
   3. Overlap at outside and inside corners as recommended by manufacturer, 12 inches, minimum.
   4. Attach to framed construction with fasteners extending through sheathing into framing, and space fasteners at 12 to 18 inches on center along each framing member supporting sheathing.
   5. For applications indicated to be airtight, seal seams, laps, penetrations, tears, and cuts with self-adhesive tape; use only large-headed, gasketed fasteners as recommended by manufacturer.
   6. Install water-resistive barrier over jamb flashings.
   7. Install head flashings under water-resistive barrier.
   8. At framed openings with frames having nailing flanges, extend sheet into opening and over flanges; at head of opening, seal sheet over flange and flashing.

E. Openings and Penetrations in Exterior Water-Resistive Barriers:
   1. Install flashing over sills, covering entire sill framing member, and extend at least 5 inches onto water-resistive barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
   2. At openings filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at

least 4 inches wide; do not seal sill flange.

3. At openings filled with nonflanged frames, seal water-resistive barrier to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
4. At head of openings, install flashing under water-resistive barrier extending at least 2 inches beyond face of jambs; seal water-resistive barrier to flashing.
5. At interior face of openings, seal gaps between window and door frames and rough framing using appropriate joint sealant over backer rod.
6. Service and Other Penetrations: Form flashing around penetrating items and seal to surface of water-resistive barrier.

3.04 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements for additional requirements.

B. City's Inspection and Testing: Cooperate with City's testing agency.
   1. Allow access to work areas and staging.
   2. Notify City's testing agency in writing of schedule for work of this section to allow sufficient time for testing and inspection.
   3. Do not cover work of this section until testing and inspection is accepted.

C. Do not cover installed water-resistive barriers until required inspections have been completed.

D. Take digital photographs of each portion of installation prior to covering up weather barriers.

3.05 PROTECTION

A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

Section 07 4113
Metal Roof Panels

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal roof panel system of preformed steel panels.

1.02 RELATED REQUIREMENTS

A. Section 05 1200 - Structural Steel Framing: Roof framing and purlins.

B. Section 05 4000 - Cold-Formed Metal Framing: Roof Framing

C. Section 06 1000 - Rough Carpentry: Roof sheathing.

D. Section 07 9200 - Joint Sealants: Sealing joints between metal roof panel system and adjacent construction.

1.03 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2013.

B. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2010 (Reapproved 2015).

C. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.

D. ASTM D5147/D5147M - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material; 2018.

E. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2021.

F. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2005 (Reapproved 2012).

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Summary of test results, indicating compliance with specified requirements.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

4. Specimen warranty.

C. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
   1. Show work to be field-fabricated or field-assembled.

D. Verification Samples: For each roofing system specified, submit samples of minimum size 12 inches square, representing actual roofing metal, thickness, profile, color, and texture.

E. Test Reports: Indicate compliance of metal roofing system to specified requirements.

F. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in City's name and are registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than 10 years of documented experience.

B. Panel manufacturers without full supporting literature, Flashings & Details Guides, Guide Specifications and Technical Support shall not be considered equal to the specified product.

C. Installer Qualifications: Company specializing in performing work of the type specified and with at least 5 years of documented experience or certified by the manufacturer.

1.06 REGULATORY AGENCY REQUIREMENTS

A. Comply with CBC and local Building Code requirements if more restrictive than those specified herein.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Provide strippable plastic protection on prefinished roofing panels for removal after installation.

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Finish Warranty: Provide manufacturer's special warranty covering failure of factory-applied exterior finish on metal roof panels and agreeing to repair or replace panels that show evidence of finish degradation, including significant fading, chalking, cracking, or peeling within specified warranty period of ten years from Date of Substantial Completion.

C. Waterproofing Warranty: Provide manufacturer's warranty for weathertightness of roofing system, including agreement to repair or replace roofing that fails to keep out water within specified warranty period of 10 years from Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Architectural Metal Roof Panel Manufacturers:
   1. Metal Sales Manufacturing Corporation: Vertical Seam https://www.metalsales.us.com/.
   2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

A. Metal Roof Panels: Provide complete roofing assemblies, including roof panels, clips, fasteners, connectors, and miscellaneous accessories, tested for compliance with the following minimum standards:
   1. Structural Design Criteria: Provide panel assemblies designed to safely support design loads at support spacing indicated, with deflection not to exceed L/180 of span length(L) when tested in accordance with ASTM E1592.
   2. Overall: Complete weathertight system tested and approved in accordance with ASTM E1592.
   3. Thermal Movement: Design system to accommodate without deformation anticipated thermal movement over ambient temperature range of 100 degrees F.

2.03 METAL ROOF PANELS

A. Metal Roof Panels: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.

B. Metal Panels: Factory-formed panels with factory-applied finish.
   1. Steel Panels:
      a. Aluminum-zinc alloy-coated steel complying with ASTM A792/A792M; minimum AZ50 coating.
      b. Steel Thickness: Minimum 24 gauge, 0.024 inch.
   2. Profile: Standing seam, with minimum 1.75 inch seam height; concealed fastener system for field seaming with special tool.
   3. Texture: Striated.
   4. Length: Maximum possible length to minimize lapped joints. Where lapped joints are unavoidable, space laps so that each sheet spans over three or more supports.
   5. Width: Maximum panel coverage of 12 inches.
   6. Color: Weathered Copper W50.

2.04 ATTACHMENT SYSTEM

A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.05 FINISHES

A. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss as selected by Architect from manufacturer’s standard line as noted abo

2.06 ACCESSORIES

A. Miscellaneous Sheet Metal Items: Provide flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.

B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.

C. Sealants:
   1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
   2. Concealed Sealant: Non-curing butyl sealant or tape sealant.

2.07 SHEET MATERIALS

A. Location
   1. Field: One layer of ashpaltic underlayment.
   2. Crickets, valleys, headwall flashing, sidewall flasing and roof penetraions: Self-adhering rubber modified asphalt

B. Underlayment: Self-adhering polymer modified asphalt sheet complying with ASTM D1970/D1970M, with strippable release film and top surface of woven polypropylene sheet.
   1. Sheet Thickness: 80 mil, 0.080 inch minimum total thickness.
   2. Self Sealability: Nail sealability in accordance with ASTM D5147/D5147M
   3. Water Vapor Permeance: 0.1 perm, maximum, when tested in accordance with ASTM E96/E96M using Desiccant Method (Method A).
   4. UL Class A Rated when tested in accordance with UL 790
   5. Products:
      a. Polyglass USA, Inc; Polystick XFR, Fire Resistant Self-Adhered Roof Underlayment: www.polyglass.us/#sle.
      b. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Broom clean sheathing prior to installation of roofing system.

B. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to ensure that completed roof will be free of leaks.

C. Coordinate installation of waterproof membrane over roof sheathing with Section 06 1000.

D. Remove protective film from surface of roof panels immediately prior to installation; strip film carefully to avoid damage to prefinished surfaces.

E. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.

F. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.03 INSTALLATION

A. Overall: Install roofing system in accordance with approved shop drawings and metal roof panel manufacturer's instructions and recommendations, as applicable to specific project conditions; securely anchor components of roofing system in place allowing for thermal and structural movement.
   1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
   2. Minimize field cutting of panels. Where field cutting is required, use methods that will not distort panel profiles. Use of torches for field cutting is prohibited.

B. Accessories: Install necessary components that are required for complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.

C. Roof Panels: Install metal roof panels in accordance with manufacturer's installation instructions, minimizing transverse joints except at junction with penetrations.

3.04 CLEANING

A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.05 PROTECTION

A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.

B. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

END OF SECTION

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Section 07 4213
Metal Wall Panels

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufactured metal panels for exterior wall panels, soffit panels, and subgirt framing assembly, with related flashings and accessory components.

1.02 RELATED REQUIREMENTS

A. Section 07 2500 - Weather Barriers: Water-resistive barrier under wall panels.

B. Section 07 9200 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.

1.03 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2013.

B. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

1.04 SUBMITTALS

A. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
   1. Physical characteristics of components shown on shop drawings.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions and recommendations.

B. Shop Drawings: Indicate dimensions, layout, joints, construction details, support clips, and methods of anchorage.

C. Samples: Submit two samples of wall panel and soffit panel, 12 inches by 12 inches in size illustrating finish color, sheen, embossing, and texture.

D. Manufacturer's qualification statement.

E. Installer's qualification statement.

F. Warranty Documentation for Installation of Building Rainscreen Assembly: Submit installer warranty and ensure that forms have been completed in City's name and registered with installer.

1.05 MOCK-UPS

A. Construct mock-up, 4 feet long by 4 feet wide; include panel and soffit system, glazing, attachments to building frame, associated vapor retarder and air seal materials, weep drainage system, sealants and seals, and related insulation in mock-up.

B. Locate as directed by Architect.

C. Mock-up may remain as part of work.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.

B. Store prefinished material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.

C. Prevent contact with materials that may cause discoloration or staining of products.

1.07 FIELD CONDITIONS

A. Do not install wall panels when air temperature or relative humidity are outside manufacturer's limits.

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Finish Warranty: Provide 5-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in City's name and register with warrantor.

C. Special Warranty: Provide 2-year warranty covering water tightness and integrity of seals of metal wall panels. Complete forms in City's name and register with warrantor.

D. Installation Warranty for Building Rainscreen Assembly: Installer of exterior rainscreen assembly (including air/vapor barrier and attachments, framing, and exterior panels) to provide 10-year warranty that includes coverage for defective materials and/or workmanship. This warranty will also clearly include materials, labor, necessary activity to access these areas, and removal of any materials to effect repairs and restore to watertight conditions. www.edacontractors.com/#sle

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Wall Panels - Concealed Fasteners:
   1. D. Architectural Metal Solutions Incorporated; Aluminum Plate Rainscreen System – Series CPRS: https://damsinc.com/.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Metal Soffit Panels:
   1. Longboard Architectural Products; Tongue and Groove Soffit V-Groove.
   2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 METAL WALL PANEL SYSTEM

A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.
   1. Provide exterior wall panels and subgirt framing assembly.
   2. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of wall.
   3. Maximum Allowable Deflection of Panel: L/180 for length(L) of span.
   4. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
   5. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
   6. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
   7. Corners: Factory-fabricated in one continuous piece with minimum 4-inch returns.

B. Exterior Wall Panels:
   1. Profile: Vertical and horizontal, as indicated; style as indicated.
   2. Side Seams: Double-interlocked with reveal, rainscreen system.
   3. Material: Precoated aluminum sheet, 8 gauge, .125 inch minimum thickness.
   4. Panel Width: As indicated on the drawings.
   5. Panel Depth: 2 inch , Manufacturer Standard
      a. At Doors: Contractor to coordinate depth of "Cookie Sheet" cladding or glazed in planes with adjacent trades and manufacturers.
   6. Panel Joints: Manufacturer's standard; 1/2" Maximum.
   7. Surface Applied Medallion: Full CNC 3/8" plate aluminum.
      a. Material: Same as metal wall panel.
      b. Shape and Size: As indicated on the drawings
      c. Finish: Same as metal wall panel.

C. Soffit Panels:
   1. Profile: 4 inch V-Groove, with venting not provided.
   2. Profile: [2.5 inch V-Groove], with venting provided.
      a. Provide one row of ventilated soffit panel and restroom and kiosk canopy.
   3. Profile: [6 inch V-Groove], with venting not provided.
      a. Vertical appliation
   4. Material: Precoated aluminum sheet, 16 gauge, .0625 inch minimum thickness.
   5. Color: As selected by Architect from manufacturer's standard line.
      a. Color: Dark Fir, DFR
   6. Accesories: as required by manufacturer for complete installation
      a. Quick Screen Clip
      b. Pan Head Screws
      c. Trims as required; Starter track, termination set, and flat reveal at mitered corners.

D. Subgirt Framing Assembly:

1. Manufacturer's standard profile; to attach panel systems to building.

E. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.

F. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.

G. Anchors: Galvanized steel or as recommended by manufacturer for substrate.

2.03 MATERIALS

A. Wall Panels: Non-Precoated Aluminum Sheet: ASTM B209/B209M, 3003 alloy, with temper as required, with smooth surface, mill finish, or as otherwise recommended by metal producer for required finish.
1. Thickness: 0.125 inch, minimum.

B. Soffit Panels: Non-Precoated Aluminum Sheet: ASTM B209/B209M, 6063 alloy, T5 temper as required, with smooth surface, mill finish, or as otherwise recommended by metal producer for required finish.

2.04 FINISHES

A. Wall Panels: Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss as selected by Architect from manufacturer’s full line: Basis.
1. Products:
a. PPG; Duranar: www.ppgmetalcoatings.com/#sle.
1) Basis of Design: Earthtone UC124848

B. Soffit Panels Fluoroethylene Vinyl Ether (FEVE) Coating: Superior performing resin based organic powder coatings system complying with AAMA 2605; single coat applications when applied to aluminum with dry film thickness (DFT) of 2 to 3 mil, 0.002 to 0.003 inch; color and gloss as scheduled.
1. Apply coating to exposed metal surfaces with proper preparation and pretreatment in accordance with resin manufacturer's instructions.

2.05 ACCESSORIES

A. Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot dip galvanized. Fastener cap same color as exterior panel.
1. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws.

B. Field Touch-up Paint: As recommended by panel manufacturer.

C. Bituminous Paint: Asphalt base.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building framing members are ready to receive panels.

B. Verify that water-resistive barrier, see Section 07 2500, has been properly installed over substrate; see Section 05 4000.

3.02 FABRICATION

A. Fabricate and finish aluminum plate wall panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
   1. Fabricate aluminum plate wall panels in a manner that shall eliminate condensation on interior side of panel and with joints between panels designed to form rain screen type seals.
   2. Back routed panel lines, edges to be sharp and true, with surfaces free from warp and buckle.
   3. Fabricate panels with sharply cut edges, with no displacement of face sheets.
   4. Fabricate panels with panel stiffeners, as required to comply with deflection limits, attached to back of panels with structural adhesive sealant or bond tape.
   5. Max radius of Edge = 1/8"
   6. Completely fabricate panels, surface applied medallions, and all components with exposed surfaces prior to finishing.

3.03 PREPARATION

A. Install subgirts perpendicular and parallel to panel length, securely fastened to substrates and shimmed and leveled to uniform plane, and spaced at intervals indicated by manufacturer.

B. Protect surrounding areas and adjacent surfaces from damage during execution of this work.

3.04 INSTALLATION

A. Install panels on walls in accordance with manufacturer's instructions.

B. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint; allow to dry prior to wall panel installation.

C. Fasten panels to structural supports; aligned, level, and plumb.

D. Provide expansion and control joints where indicated.

E. Use concealed fasteners unless otherwise indicated by Architect.

3.05 TOLERANCES

A. Offset From True Alignment Between Adjacent Members Abutting or In Line: 1/16 inch, maximum.

B. Variation from Plane or Location As Indicated on Drawings: 1/4 inch, maximum.

3.06 CLEANING

A. Remove site cuttings from finish surfaces.

B. Remove protective material from wall panel surfaces.

C. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

3.07 PROTECTION

A. Protect metal wall panels until completion of project.

B. Touch-up, repair, or replace damaged wall panels or accessories before Date of Substantial Completion.

END OF SECTION

Section 07 6200
Sheet Metal Flashing and Trim

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings, counterflashings, gutters, downspouts, sheet metal roofing, exterior penetrations, and other items indicated in Schedule.

1.02 RELATED REQUIREMENTS

A. Section 04 2000 - Unit Masonry: Metal flashings embedded in masonry.

B. Section 04 2613 - Masonry Veneer

C. Section 05 4000 - Cold-Formed Metal Framing

D. Section 07 7123 - Manufactured Gutters and Downspouts.

E. Section 07 9200 - Joint Sealants: Sealing non-lap joints between sheet metal fabrications and adjacent construction.

F. Section 08 6200 - Unit Skylights: Integral metal curbs.

G. Section 09 9000 - Painting and Coating: Field painting.

1.03 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2013.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.

C. ASTM B32 - Standard Specification for Solder Metal; 2008 (Reapproved 2014).

D. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

E. CDA A4050 - Copper in Architecture - Handbook; current edition.

F. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.

B. Maintain one copy of each document on site.

C. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 3 years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal.

B. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal, shop pre-coated with manufacturer's coating.
   1. Aluminum-zinc alloy-coated steel complying with ASTM A792/A792M; minimum AZ50 coating.
   2. Color: As selected by Architect from manufacturer's custom colors.
      a. Flashing directly contacting roofing to be flashed with metal by roofing manufacture to match roofing material.
      b. Basis of Design: Weathered Copper W50 by Metal Sales
      c. Basis of Design Accent Color: Bronze

C. Pre-Finished Aluminum: ASTM B209/B209M, 3005 alloy, H12 or H14 temper; 18 gauge, 0.040 inch thick; plain finish shop pre-coated with PVDF coating.
   1. Polyvinylidene Fluoride (PVDF) Coating: Superior performing organic powder coating, AAMA 2605; pretreated metal with two-coat system including primer and color coat with at least 70 percent PVDF coating.
   2. Color: As selected by Architect from manufacturer's custom colors.
      a. Flashing directly contacting wall panels to be flashed with metal to match wall panel material.
         1) Basis of Design: Duranar; Earthtone UC12484 by PPG; www.ppgmetalcoatings.com

D. Note: Flashing directly contacting roofing to be flashed with metal by roofing manufacture to match roofing material.

2.02 ACCESSORIES

A. Sealant: Type specified in Section 09 7200.

2.03 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Form pieces in longest possible lengths.

C. Hem exposed edges on underside 1/2 inch; miter and seam corners.

D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

E. Fabricate corners from one piece with minimum 12-inch long legs; seam for rigidity, seal with sealant.

F. Fabricate vertical faces with bottom edge formed outward as requied by the condition and hemmed to form drip.

G. Fabricate flashings to allow toe to extend 4 inches over roofing -. Return and brake edges.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

B. Verify roofing termination and base flashings are in place, sealed, and secure.

C. In the event of a discrepancy, immediately notify the Architect.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Install surface mounted reglets true to lines and levels, and seal top of reglets with sealant.

C. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil, 0.015 inch.

3.03 INSTALLATION

A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted..

B. Apply plastic cement compound between metal flashings and felt flashings.

C. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.

END OF SECTION

Section 07 7123
Manufactured Gutters and Downspouts

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pre-finished galvanized steel gutters and downspouts.

B. Precast concrete splash pads.

1.02 RELATED REQUIREMENTS

A. Section

B. Section 07 4113 - Metal Roof Panels

C. Section 07 6200 - Sheet Metal Flashing and Trim.

D. Section 22 0000 - Plumbing

1.03 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.

B. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Comply with SMACNA (ASMM) for sizing components for rainfall intensity determined by a storm occurrence of 1 in 5 years.

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations, and installation details.

C. Samples: Submit two samples, 12 inch long, illustrating component design, finish, color, and configuration.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope to drain.

B. Prevent contact with materials that could cause discoloration, staining, or damage.

1.07 PROJECT CONDITIONS

A. Coordinate the work with downspout discharge pipe inlet.

PART 2 PRODUCTS

2.01 MATERIALS

A. Factory-formed steel with factory-applied finish.
   1. Aluminum-zinc alloy-coated steel complying with ASTM A792/A792M; minimum AZ50 coating.
   2. Color: As selected by Architect from manufacturer's custom colors.
      a. Basis of Design: Weathered Copper W50 by Metal Sales

2.02 COMPONENTS

A. Gutters: Profile as indicated.

B. Downspouts: CDA rectangular profile SMACNA rectangular profile .

C. Anchors and Supports: Profiled to suit gutters and downspouts.
   1. To match existing
   2. Anchoring Devices: In accordance with SMACNA requirements.
   3. Gutter Supports: Brackets.
   4. Downspout Supports: Brackets.

2.03 ACCESSORIES

A. Splash Pads: Precast concrete type, cast 12 by 24 by 3 inches; minimum 3,000 psi compressive strength at 28 days, with minimum 5 percent air entrainment.

B. Strainer Guard: Install "K-Style" strainer-guard at formed gutters, removable for cleaning.

C. Downspout Nozzle: Cow's tounge style, polished bronze

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that surfaces are ready to receive work.

3.02 PREPARATION

A. Paint concealed sheet metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil, 0.015 inch.

3.03 INSTALLATION

A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.

B. Sheet Metal: Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts and accessories.

C. Slope gutters 1/16 inch per foot .

D. Solder metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.

E. Set splash pads under downspouts and scuppers.

END OF SECTION

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Section 07 9200
Joint Sealants

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.

B. Self-leveling pourable joint sealants.

1.02 RELATED REQUIREMENTS

A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.

B. 32 1313 - Concrete Paving: Sealant at expansion joints

1.03 REFERENCE STANDARDS

A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2006 (Reapproved 2011).

B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.

C. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.

1.04 SUBMITTALS

A. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   4. Substrates the product should not be used on.

B. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.05 WARRANTY

A. Installer's Warranty: Correct defective work within a two year period after Date of Substantial Completion.

B. Manufacturer'sWarranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal , exhibit loss of adhesion or cohesion, or do not cure for a period of one

year.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
   1. BASF Construction Chemicals-Building Systems: www.buildingsystems.basf.com.
   2. Bostik Inc: www.bostik-us.com.
   3. Dow Corning Corporation: www.dowcorning.com/construction/sle.
   4. Hilti, Inc: www.us.hilti.com/#sle.
   5. Pecora Corporation: www.pecora.com.
   6. Tremco Global Sealants: www.tremcosealants.com.
   7. Sherwin-Williams Company: www.sherwin-williams.com.
   8. Sika Corporation: www.usa-sika.com.
   9. W.R. Meadows, Inc: www.wrmeadows.com/sle.

B. Self-Leveling Sealants: Pourable or self-leveling sealant that has sufficient flow to form a smooth, level surface when applied in a horizontal joint.
   1. Bostik Inc: www.bostik-us.com.
   2. Dow Corning Corporation: www.dowcorning.com/construction/sle.
   3. Pecora Corporation: www.pecora.com.
   4. Tremco Global Sealants: www.tremcosealants.com.
   5. Sika Corporation: www.usa-sika.com.
   6. W.R. Meadows, Inc: www.wrmeadows.com/sle.

2.02 JOINT SEALANT APPLICATIONS

A. Scope:
   1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
      a. Wall expansion and control joints.
      b. Joints between different exposed materials.
      c. Expansion joints in paving.
      d. Other joints indicated below.
   2. Do not seal the following types of joints.
      a. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
      b. Joints where installation of sealant is specified in another section.

B. Exterior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
   1. Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane "traffic-grade" sealant.

2.03 JOINT SEALANTS - GENERAL

A. Sealants and Primers: Provide products with levels of volatile organic compound (VOC) content as indicated in Section 01 6116.

B. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

C. Colors: As as selected by architect from manufacturer's full range

2.04 NONSAG JOINT SEALANTS

A. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multicomponent; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus and minus ____ percent, minimum.
   2. Manufacturers:
      a. Sherwin-Williams Company; Stampede 2NS Polyurethane Sealant: www.sherwin-williams.com/#sle.
      b. Sika Corporation; Sikaflex-2c NS: www.usa-sika.com/#sle.
      c. W. R. Meadows, Inc; POURTHANE NS: www.wrmeadows.com/#sle.

2.05 SELF-LEVELING SEALANTS

A. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion .
   1. Movement Capability: Plus and minus 25 percent, minimum.
   2. Hardness Range: 35 to 55, Shore A, when tested in accordance with ASTM C661.
   3. Color: Gray.
   4. Manufacturers:
      a. Pecora Corporation; Urexpan NR-200 and/or Dynatred: www.pecora.com.
      b. Sherwin-Williams Company; Loxon SL1 Polyurethane Self-Leveling Sealant: www.sherwin-williams.com.
      c. Sherwin-Williams Company; Loxon SL2 Polyurethane Self-Leveling Sealant: www.sherwin-williams.com.
      d. Sika Corporation; Sikaflex-1c SL: www.usa-sika.com/#sle.
      e. Sika Corporation; Sikaflex-2c SL: www.usa-sika.com/#sle.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

D. Install bond breaker backing tape where backer rod cannot be used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 POST-OCCUPANCY

A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e. at low temperature in thermal cycle. Report failures immediately and repair.

END OF SECTION

Section 08 1113
Hollow Metal Doors and Frames

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated hollow metal doors and frames.

B. Thermally insulated hollow metal doors with frames.

C. Accessories, including glazing, louvers, and matching panels.

1.02 RELATED REQUIREMENTS

A. Section 08 7100 - Door Hardware.

B. Section 08 8000 - Glazing: Glass for doors and borrowed lites.

C. Section 09 9113 - Exterior Painting: Field painting.

1.03 ABBREVIATIONS AND ACRONYMS

A. ANSI: American National Standards Institute.

B. ASTM - American Society for Teesting Materials.

C. NFPA: National Fire Protection Association.

D. SDI: Steel Door Institute.

E. UL: Underwriters Laboratories.

1.04 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.

C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.

D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.

E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.

F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2015.

G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.

H. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2012.

I. ASTM C476 - Standard Specification for Grout for Masonry; 2010.

J. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.

K. ASTM E413 - Classification for Rating Sound Insulation; 2010.

L. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.

M. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

N. ITS (DIR) - Directory of Listed Products; current edition.

O. NAAMM HMMA 810 - Hollow Metal Doors

P. NAAMM HMMA 820 - Hollow Metal Frames

Q. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.

R. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.

S. NAAMM HMMA 850 - Fire-Protection and Smoke Control Rated Hollow Metal Door and Frame Products; 2014.

T. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2006.

U. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2016.

V. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2012.

W. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2013.

X. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

Y. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.

C. Shop Drawings: Details of each opening and each different wall opening condition, showing elevations, glazing, anchorage, frame profiles, and any indicated finish requirements.

D. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.

E. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

F. Manufacturer's Qualification Statement.

G. Installer's Qualification Statement.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

C. Maintain at project site copies of reference standards relating to installation of products specified.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Hollow Metal Doors and Frames:
   1. Ceco Door, an Assa Abloy Group company; .: www.assaabloydss.com/#sle.
   2. Steelcraft, an Allegion brand; .: www.allegion.com/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

A. Requirements for Hollow Metal Doors and Frames:
   1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
   2. Accessibility: Comply with ICC A117.1, ADA Standards, and CBC Chapter 11B
   3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
   4. Door Edge Profile: Manufacturers standard for application indicated.
   5. Typical Door Face Sheets: Embossed. Refer to Door Schedule for additional information.

B. Hollow Metal Panels: Same construction, performance, and finish as doors.

C. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

A. Door Finish: Factory primed and field finished.

B. Type 1 ,Exterior Doors: Thermally insulated.
   1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
      a. Level 3 - Extra Heavy-duty.
      b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
      c. Model 3 - Stile and Rail.
      d. Door Face Metal Thickness: 16 gauge, 0.053 inch, minimum.
   2. Door Thickness: 1-3/4 inches, nominal.
   3. Door Finish: Factory primed and field finished.

2.04 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

B. Exterior Door Frames: Fully welded. Steelcraft F and FN series
   1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
   2. Frame Metal Thickness: 12 gage, 0.093 inch, minimum.
   3. Frame Finish: Factory primed and field finished.

C. Borrowed Lites Glazing Frames: Construction and face dimensions to match door frames, and as indicated on drawings.

2.05 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.06 ACCESSORIES

A. Louvers: Roll formed steel with overlapping frame; factory-painted finish, color as selected; factory-installed.

B. Door Window Frames: Door window frames with glazing securely fastened within door opening.
   1. Size: As indicated on drawings.
   2. Frame Material: 18 gauge, 0.0478 inch, galvanized steel.

C. Glazing: As specified in Section 08 8000, factory installed.

D. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Install fire rated units in accordance with NFPA 80.

C. Coordinate frame anchor placement with wall construction.

D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.

E. Install door hardware as specified in Section 08 7100.

F. Comply with glazing installation requirements of Section 08 8000.

3.04 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.

B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.05 ADJUSTING

A. Adjust for smooth and balanced door movement.

3.06 SCHEDULE

A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

Section 08 3313
Coiling Counter Doors

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated coiling counter doors and operating hardware.

1.02 RELATED REQUIREMENTS

A. Section 05 1200 - Structural Steel Framing

1.03 REFERENCE STANDARDS

A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Submit manufacturer's standard literature showing materials and details of construction and finish. Include data on electrical operation.

C. Shop Drawings: Indicate rough and actual opening dimensions, anchorage methods, hardware locations, and installation details.

D. Samples: Two slats, 4 inches long, illustrating shape, color, and finish texture.

E. Manufacturer's Installation Instructions: Indicate installation sequence and installation, adjustment, and alignment procedures.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

H. Operation and Maintenance Data: Indicate modes of operation, lubrication requirements and frequency, and periodic adjustments required.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years documented experience.

1.06 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 2-year manufacturer warranty for counterbalance shaft assembly. Complete forms in City's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Coiling Counter Doors:
   1. C.H.I. Overhead Doors; Model 6566 (stainless): www.chiohd.com/#sle.
   2. Overhead Door: Model 651(stainless): https://www.overheaddoor.com/counter-doors-651.
   3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 COILING COUNTER DOORS

A. Coiling Counter Metal Doors, Non-Fire-Rated: Stainless steel slat curtain.
   1. Mounting: Interior face mounted.
   2. Nominal Slat Size: 1 1/2 inches wide.
   3. Slat Profile: Flat.
   4. Interior Finish, Stainless Steel: No. 4 - Brushed.
   5. Curtain Color: Exterior side to be as selected by Architect from manufacturer's custom range to match wall panels.
   6. Guides: Formed track; stainless steel same material and finish as interior unless otherwise indicated.
   7. Hood Enclosure: Manufacturer's standard; primed steel.
   8. Manual push up operation.
   9. Locking Devices: Slide bolt on inside.

2.03 COMPONENTS

A. Metal Curtain Construction: Interlocking, single-thickness slats.
   1. Slat Ends: Alternate slats fitted with end locks to act as wearing surface in guides and to prevent lateral movement.
   2. Curtain Bottom: Fitted with angles to provide reinforcement and positive contact in closed position.
   3. Stainless Steel Slats: ASTM A666, Type 304; minimum thickness 22 gauge, 0.03 inch.

B. Guide Construction: Continuous, of profile to retain door in place, with mounting brackets of same metal.
   1. Stainless Steel Guides: ASTM A666, Type 304, rollable temper.

C. Hood Enclosure: Internally reinforced to maintain rigidity and shape.

D. Lock Hardware:
   1. Latch Handle: Manufacturer's standard.

2. Slide Bolt: Provide on both-jamb sides, extending into slot in guides, with padlock on both sides..

E. Roller Shaft Counterbalance: Steel pipe and torsion steel spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and capable of holding position at mid-travel; with adjustable spring tension; requiring 25 lb nominal force to operate.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that adjacent construction is suitable for door installation.

B. Verify that electrical services have been installed and are accessible.

C. Verify that door opening is plumb, header is level, and dimensions are correct.

D. Notify Architect of any unacceptable conditions or varying dimensions.

E. Commencement of installation indicates acceptance of substrate and door opening conditions.

3.02 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.

C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.

D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

E. Install perimeter trim as indicated.

3.03 TOLERANCES

A. Maintain dimensional tolerances and alignment with adjacent work.

B. Maximum Variation From Plumb: 1/16 inch.

C. Maximum Variation From Level: 1/16 inch.

D. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch per 10 ft straight edge.

3.04 ADJUSTING

A. Adjust operating assemblies for smooth and noiseless operation.

3.05 CLEANING

A. Clean installed components.

B. Remove labels and visible markings.

END OF SECTION

Section 08 4313
Aluminum-Framed Storefronts

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aluminum-framed storefront, with vision glass.

B. All required attachments, trim, and accessories to provide a complete installation.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry

B. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.

C. Section 08 8000 - Glazing: Glass and glazing accessories.

1.03 REFERENCE STANDARDS

A. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.

B. AAMA 501.4 - Recommended Static Test Method for Evaluating Curtain Wall and Storefront Systems Subjected to Seismic and Wind Induced Interstory Drifts; 2009.

C. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2012.

D. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.

E. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels; 2013.

F. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.

G. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.

H. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.

I. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2013.

J. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.

K. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with installation of other components that comprise the exterior enclosure.

1.05 PERFORMANCE REQUIREMENTS

A. Design and size components to withstand the following load requirements without damage or permanent set, when tested in accordance with ASTM E 330, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
   1. Design Wind Loads: Comply with requirements of California Building code.
      a. 70 mph wind speed, exposure C
   2. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.

B. Movement: Accommodate movement between storefront and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.

C. Air Infiltration: Limit air infiltration through assembly to 0.06 cu ft/min/sq ft of wall area, measured at a reference differential pressure across assembly of 1.57 psf as measured in accordance with ASTM E 283.

D. Water Leakage: None, when measured in accordance with ASTM E 331 with a test pressure difference of 6.00 lbf/sq ft.

E. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

F. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.

1.06 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details.

C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.

D. Samples: Submit two samples 6 inches long illustrating finished aluminum surface .

E. Warranty: Submit manufacturer warranty and ensure forms have been completed in City's name and registered with manufacturer.

1.07 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

B. Single Source Responsibility: Obtain storefronts through one source from a single manufacturer.

C. Installer - The storefront installer shall be currently approved by the manufacturer, and have experience of at least five (5) years installing the selected system.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Handle products of this section in accordance with AAMA CW-10.

B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

C. Replacements - In the event of damage, including water intrusion, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the University.

1.09 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Special Assembly Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that deteriorate as defined in this Section within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures including, but not limited to, excessive deflection.
      b. Noise or vibration caused by thermal movements.
      c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
      d. Water leakage through fixed glazing and framing areas.
      e. Failure of operating components to function properly.
   2. Warranty Period: 2 years.

C. Provide two year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. All storefront and entrances system components shall be the product of a single manufacturer and represent an integrated system.

B. The aluminum storefront system was designed based on the product of Arcadia as a standard of quality.

C. Aluminum-Framed Storefront and Doors:
1. Kawneer North America; Trifab 451T: www.kawneer.com.
2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ALUMINUM-FRAMED STOREFRONT

A. Glazing: Refer to Section 08 8000 Glazing.

B. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
1. Glazing Rabbet: For 1 inch insulating glazing.
2. Glazing Position: Center Set.
3. Vertical Mullion Dimensions: 2 inches wide by 4-1/2 inches deep.
4. Condensation Resistance Factor: 40 minimum
5. Finish: Class I color anodized.
a. Factory finish all surfaces that will be exposed in completed assemblies.
6. Finish Color: Custom color from manufacturer's full range.
7. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
8. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
9. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
10. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
11. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
12. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.

C. Performance Requirements
1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
a. Design Wind Loads: Comply with requirements of ASCE 7.
b. Member Deflection: Limit member deflection to 1/175 in any direction, with full recovery of glazing materials.
2. Air Leakage: 0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf pressure difference.
3. System shall not deflect more than 1/8” at the center point, or 1/16” at the center point of a horizontal member, once deadload points have been established.
4. System shall accommodate expansion and contraction movement due to surface temperature differential of 180 degrees F.

5. Seismic testing shall conform to AAMA 504.1 recommended static test method for evaluating performance of curtain walls and storefront wall systems due to horizontal displacements associated with seismic movements and building sway.
6. Thermal Performance – When tested in accordance with AAMA 1503.1 the following results should be attained: U-Maximum .63/CRF – minimum of 59.
7. National Fenestration Rating Council (NFRC) specific application evaluation

2.03 COMPONENTS

A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
   1. Framing members for interior applications need not be thermally broken.
   2. Fabrication Method – Shearblock or equal. Use of exposed fasteners and stacking system with receptor sill not acceptable.
   3. Glazing Stops: Flush.

B. Glazing: See Section 08 8000.

C. Applied Muntins: Prefabricated simulated divided lite grid assembly with perimeter surround; designed to be adhered and fastened to storefront framing members and glazing.
   1. Material: Extruded aluminum.
   2. Profile: Manufacturer's standard.
   3. Finish: Same as storefront.

D. Infill Panels: 1 inch thick aluminum sheet. Provide "Cookie Sheet" infill by same manuacturer as metal wall panels.

E. Doors: Glazed aluminum. Series 500 Heavy Wall Wide stile
   1. Thickness: 2 inches.
   2. Top Rail: 5 inches wide.
   3. Vertical Stiles: 5 inches wide.
   4. Cross Rail: 6 inches wide.
   5. Bottom Rail: 10 inches wide.
   6. Glazing Stops: Square.
   7. Bottom Rail Weathering: standard dual felt
   8. Finish: Same as storefront.
   9. Hinges: Continuous hinge
   10. Threshold: 5 inch, clear anodized

2.04 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M).

B. Fasteners: Stainless steel.

C. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.

2.05 FINISHES

A. Comply with AA DAF-45 for aluminum finishes required.

B. Class I Color Anodized Finish: AAMA 611 AA-M12C22A42 Integrally colored anodic coating not less than 0.7 mils thick.

C. Touch-Up Materials: As recommended by coating manufacturer for field application.

2.06 FABRICATION

A. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.

B. A. Continuous sub-sill shall be provided under sill members to collect water infiltration and divert from the interior of the system.

C. Develop drainage holes with moisture pattern to exterior.

D. B. Framing members shall be internally reinforced and secured at head and sill as necessary for structural performance requirements, for hardware attachment, and as indicated.

E. C. Fasteners shall be so located as to ensure concealment from view in the final assembly.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify dimensions, tolerances, and method of attachment with other work.

B. Verify that wall openings and adjoining air and vapor seal materials are ready to receive work of this section.

3.02 INSTALLATION

A. Install wall system in accordance with manufacturer's instructions.

B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.

C. Provide alignment attachments and shims to permanently fasten system to building structure.

D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.

E. Provide thermal isolation where components penetrate or disrupt building insulation.

F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.

G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.

H. Coordinate attachment and seal of perimeter air and vapor barrier materials.

I. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

J. Install glass and infill panels in accordance with Section 08 8000, using glazing method required to achieve performance criteria.

K. Install applied muntin grid assembly in accordance with manufacturer's instructions.

L. Install perimeter sealant in accordance with Section 07 9005.

M. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.

B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.04 CLEANING

A. Remove protective material from pre-finished aluminum surfaces.

B. Remove excess sealant by method acceptable to sealant manufacturer.

3.05 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

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Section 08 6200
Unit Skylights

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Skylights with integral frame.

B. Operating mechanism.

1.02 RELATED REQUIREMENTS

A. Section 05 4000 - Cold-Formed Metal Framing

B. Section 07 4113 - Metal Roof Panels: Building Roofing

1.03 REFERENCE STANDARDS

A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for windows, doors, and skylights; 2011.

B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.

C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2013.

D. ASTM E2112 - Standard Practice for Installation of Exterior Windows, Doors and Skylights; 2007.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Include structural, thermal, and daylighting performance values.

C. Performance Validation: Provide specified performance validation before submitting shop drawings or starting fabrication.

D. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
1. Evidence of AAMA Certification.
2. Evidence of WDMA Certification.
3. Evidence of CSA Certification.
4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.

E. Installer's qualification statement.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with not less than three years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

1.06 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide five-year manufacturer warranty including coverage for leakage due to defective skylight materials or construction. Complete forms in City's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Unit Skylights:
1. FAKRO America LLC: www.fakrousa.com/#sle.
2. Velux America, Inc: www.veluxusa.com/#sle.
3. Wasco Skylights - Part of the VELUX Group: www.wascoskylights.com/#sle.
4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 SKYLIGHTS

A. Skylights: Factory-assembled glazing in aluminum frame, free of visual distortion, and weathertight.
1. Shape: Rectangular dome.
2. Glazing: Single.
3. Operation: None; fixed.
4. Nominal Size: 24 by 48 inch.
5. Color: As selected from manufacture's full line to complement roofing.

2.03 PERFORMANCE REQUIREMENTS

A. Provide unit skylights that comply with the following:
1. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific skylight type:
2. Performance Validation: Skylights shall comply with AAMA/WDMA/CSA 101/I.S.2/A440 performance requirements as indicated by having AAMA, WDMA, or CSA certified label, or an independent test report for indicated products itemizing compliance and acceptable by authorities having jurisdiction.
3. Allow for expansion and contraction within system components caused by a cycling surface temperature range of 170 degrees F without causing detrimental effects to system or components.

2.04 COMPONENTS

A. Single Glazing: Polycarbonate plastic; clear transparent.

B. Frames: ASTM B221 ASTM B221M Extruded aluminum reinforced and welded corner joints, integral curb frame mounting flange and counterflashing to receive roofing flashing system, with integral condensation collection gutter, glazing retainer; clear anodized finish.

2.05 ACCESSORIES

A. Anchorage Devices: Type recommended by manufacturer, exposed to view.

B. Counterflashings: Same metal type and finish as roofing..

C. Protective Back Coating: Zinc molybdate alkyd.

D. Sealant: Elastomeric, silicone or polyurethane, compatible with material being sealed .

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that openings and substrate conditions are ready to receive work of this section.

3.02 PREPARATION

A. Apply protective back coating on aluminum surfaces of skylight units that will be in contact with cementitious materials or dissimilar metals.

3.03 INSTALLATION

A. Install unit skylights in accordance with manufacturer's instructions and ASTM E2112.

B. Install skylight units and mount securely; install counterflashing as required.

C. Apply sealant to achieve watertight assembly.

END OF SECTION

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Section 08 7100
Door Hardware

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for hollow metal and sliding doors.

B. Thresholds.

C. Weatherstripping and gasketing.

1.02 RELATED REQUIREMENTS

A. Section 08 1113 - Hollow Metal Doors and Frames.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. BHMA A156.1 - American National Standard for Butts and Hinges; 2013.

C. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches; 2011.

D. BHMA A156.4 - American National Standard for Door Controls - Closers; 2013.

E. BHMA A156.5 - American National Standard for Cylinders and Input Devices for Locks; 2014.

F. BHMA A156.18 - American National Standard for Materials and Finishes; 2012.

G. BHMA A156.21 - American National Standard for Thresholds; 2014.

H. BHMA A156.22 - American National Standard for Door Gasketing and Edge Seal Systems, Builders Hardware Manufacturers Association; 2012.

I. BHMA A156.26 - American National Standard for Continuous Hinges; 2012.

J. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.

B. Preinstallation Meeting: Convene a preinstallation meeting one week prior to commencing work of this section; attendance is required by affected installers and the following:
   1. Architect.

2. Installer's Architectural Hardware Consultant (AHC).
3. Hardware Installer.

C. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
2. Provide complete description for each door listed.
3. Provide manufacturer name, product names, and catalog numbers; include functions, types, styles, sizes and finishes of each item.

D. Installer's qualification statement.

E. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in City's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified for commercial door hardware with at least three years of documented experience.

B. Supplier Qualifications: Company with certified Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC) to assist in work of this section.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Warranty against defects in material and workmanship for period indicated, from Date of Substantial Completion.
1. Closers: Five years, minimum.
2. Locksets and Cylinders: Three years, minimum.
3. Other Hardware: Two years, minimum.

PART 2 PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.

B. Provide individual items of single type, of same model, and by same manufacturer.

C. Provide door hardware products that comply with the following requirements:
   1. Applicable provisions of federal, state, and local codes.
   2. Accessibility: ADA Standards and ICC A117.1.

D. Lock Function: Provide lock and latch function numbers and descriptions of manufacturer's series. See Door Hardware Schedule.

2.02 HINGES

A. Manufacturers:
   1. Hager Companies: www.hagerco.com/#sle.

B. Hinges: Comply with BHMA A156.1, Grade 1.
   1. Continuous Hinges: Comply with BHMA A156.26.
   2. Provide hinges on every swinging door.
   3. Provide following quantity of butt hinges for each door:

2.03 TRACK AND HANGERS

A. Manufacturers:
   1. Basis of Design: Rail Craft Wall Mount 400.

B. Face-Mounted Barn Door Hardware:
   1. Provide steel, square track rail, track fasteners, guides, latches and pulls; size rail and hangers in accordance with manufacturer's recommendations for weight of doors.
   2. Track Length: 96 inch, nominal.
   3. Track Finish: As selected by Architect.
   4. Hardware Style: As selected by Architect.

C. Door Weight: Medium; medium frequency of use with up to 400 lbs door weight.

2.04 LOCK CYLINDERS

A. Manufacturers:

B. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
   1. Provide standard, conventional, and full size interchangeable core (FSIC) type cylinders, Grade 1, with six-pin core in compliance with BHMA A156.5 at locations indicated.
   2. Provide cylinders from same manufacturer as locking device.
   3. Provide cams and/or tailpieces as required for locking devices.

2.05 CYLINDRICAL LOCKS

A. Manufacturers:
   1. Schlage, an Allegion brand: www.allegion.com/us/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
   1. Bored Hole: 2-1/8 inch diameter.
   2. Latchbolt Throw: 1/2 inch, minimum.
   3. Backset: 2-3/4 inch unless otherwise indicated.
   4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Finish: To match lock or latch.

2.06 CLOSERS

A. Manufacturers; Surface Mounted:
   1. LCN, an Allegion brand: www.allegion.com/us/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Closers: Comply with BHMA A156.4, Grade 1.
   1. Type: As indicated in door hardware sets.
   2. Provide door closer on interior side of each exterior swinging door.

2.07 MOP PLATES

A. Manufacturers:
   1. Ives, an Allegion brand: www.allegion.com/us/#sle.

B. Mop Plates: Provide along bottom edge of interior of doors to provide protection from cleaning liquids and equipment damage to door surface.
   1. Size: 6 inch high by 1-1/2 inch less door width (LDW) on pull side and 2 inch LDW on push side of door.

2.08 THRESHOLDS

A. Manufacturers:
   1. Pemko; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Hager Companies: www.hagerco.com/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Thresholds: Comply with BHMA A156.21.
   1. Provide threshold at each exterior door, unless otherwise indicated.
   2. Type: Flat surface.
   3. Material: Aluminum.
   4. Threshold Surface: Fluted horizontal grooves across full width.
   5. Field cut threshold to profile of frame and width of door sill for tight fit.
   6. Provide non-corroding fasteners at exterior locations.

2.09 WEATHERSTRIPPING AND GASKETING

A. Manufacturers:
   1. Zero International, Inc: www.zerointernational.com/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
   1. Head and Jamb Type: Adjustable.
   2. Door Sweep Type: Encased in retainer.
   3. Material: Aluminum, with brush weatherstripping.

2.10 FINISHES

A. Finishes: Provide door hardware of same finish, unless otherwise indicated.
   1. Primary Finish: 613; dark oxidized satin bronze, oil rubbed, with bronze base material (former US equivalent US10B); BHMA A156.18.
   2. Secondary Finish: _____ 622; black oxidized, with bronze base material.; BHMA A156.18.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Use templates provided by hardware item manufacturer.

C. Do not install surface mounted items until application of finishes to substrate are fully completed.

D. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.
   1. Mounting heights in compliance with ADA Standards and CBC 11B.

E. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

3.03 FIELD QUALITY CONTROL

A. Perform field inspection and testing under provisions of Section 01 4000 - Quality Requirements.

3.04 ADJUSTING

A. Adjust work under provisions of Section 01 7000 - Execution and Closeout Requirements.

B. Adjust hardware for smooth operation.

C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

D. Adjust closing speed to comply with CBC 11B

3.05 CLEANING

A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.

B. Clean adjacent surfaces soiled by hardware installation.

C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

3.06 PROTECTION

A. Protect finished Work under provisions of Section 01 7000 - Execution and Closeout Requirements.

B. Do not permit adjacent work to damage hardware or finish.

HARDWARE GROUP NO. 01

Doors 101 and 102

Provide each Hanging Slider with the following:

1	EA	BOX RAIL DOOR KIT	6 FT, WALL MOUNT #400		BL	RAIL CRAFT
2	EA	HEAVY DUTY CANE BOLT	BLACK STEEL,		BL	
3	EA	BOLT RECEPTACLE	IN GROUND			
1	EA	FSIC CORE	23-030		622	SCH

HARDWARE GROUP NO. 02

Door 103

Provide with the following:

3	EA	HINGE	B1168 4.5 4.5		613	HAG
1	EA	STOREROOM LOCK	LV9080T 06A		643e	SCH
1	EA	FSIC CORE	23-030		613	SCH
1	EA	SURFACE CLOSER	1461 H REG X SRI		695	LCN
1	EA	THRESHOLD	547D		BRZ	ZER
1	EA	FLOOR STOP	FS436/438 AS REQ.		613	IVES
1	EA	GASKETING	429D		BK	ZER
1	EA	KICK PLATE	8400 10” X 2” LDW		613	IVES
1	EA	SWEEP	39D		BRZ	ZER

HARDWARE GROUP NO. 03

Door 104

Provide SGL door with the following:

1	EA	CONT. HINGE	112XY		313	IVES
1	EA	ENTRY LOCK	LV9453T 06A		643e	SCH
1	EA	FSIC CORE	23-030		613	SCH
1	EA	SURFACE CLOSER	1461 SHCUSH X SRI		695	LCN
1	EA	GASKETING	BY STOREFRONT MANUF.		BK	B/O
1	EA	SWEEP	8192D		DBA	ZER
1	EA	THRESHOLD	547D		BRZ	ZER

END OF SECTION

Section 08 8000
Glazing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing compounds.

1.02 RELATED REQUIREMENTS

A. Section 08 1113 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.

B. Section 08 1416 - Wood Doors: Glazed lites in doors.

C. Section 08 5313 - Vinyl Windows: Glazing provided by window manufacturer.

D. Section

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test; 2010.

C. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.

D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2011).

E. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.

F. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.

G. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2015.

H. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting; 2012.

I. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2012a.

J. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2010.

K. GANA (GM) - GANA Glazing Manual; 2009.

L. GANA (SM) - GANA Sealant Manual; 2008.

M. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2014.

N. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2014.

O. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2014.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data on Insulating Glass Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

D. Samples: Submit two samples 12 by 12 inch in size of glass units.

E. Certificate: Certify that products of this section meet or exceed specified requirements.

F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in City's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with GANA (GM) for glazing installation methods.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

1.06 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer's standard form in which coated-glass manufacturer agrees to replace coated-glass units that deteriorate within

specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
1. Warranty Period: 10 years.

C. Manufacturer's Special Warranty on Insulating Glass: Manufacturer's standard form in which insulating-glass manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.
1. Warranty Period: 10 years.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Glass Manufacturers:
1. Pilkington North America Inc: www.pilkington.com/na.
2. PPG Industries, Inc; Basis of Design: www.ppgideascapes.com.
3. Oldcastle Building Envelope: www.obe.com

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
2. Seismic Loads: Design and size glazing components to withstand seismic loads and sway displacement in accordance with the requirements of ASCE 7.
3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
4. Glass thicknesses listed are minimum.

B. Vapor Retarder and Air Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure vapor retarder and air barrier.
1. In conjunction with vapor retarder and joint sealer materials described in other sections.

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
   1. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
   2. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
   3. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.

2.04 INSULATING GLASS UNITS

A. Manufacturers:
   1. Glass: Any of the manufacturers specified for float glass.
   2. Fabricator certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.

B. Insulating Glass Units: Types as indicated.
   1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
   2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
   3. Spacer Color: Bronze.
   4. Edge Seal:
      a. Color: Black.
   5. Purge interpane space with dry air, hermetically sealed.

C. Type IG-1 - Insulating Glass Units: Vision glass, double glazed, safetly glazing
   1. Applications: Exterior glazing unless otherwise indicated.
   2. Space between lites filled with air.
   3. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
      a. Tint: Bronze
      b. Coating: Self-cleaning type, on #1 surface.
      c. Coating: Low-E (solar control type), Solarban 67 on #2 surface.
   4. Inboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
      a. Tint: Clear.
   5. Total Thickness: 1 inch.
   6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.29, maximum.
   7. Visible Light Transmittance (VLT): 05, nominal.
   8. Solar Heat Gain Coefficient (SHGC): 12, maximum.
   9. Glazing Method: Dry glazing method, gasket glazing.

2.05 PLASTIC FILMS

A. Type F-2 - Safety and Security Plastic Film: Micro Layered type.
   1. Application: All glazing shown on the drawings
   2. Tensile Strength: Minimum of 31,500 psi when measured in accordance with ASTM D882.
   3. Color: Clear.
   4. Thickness: 8 mil.
   5. Manufacturers:
      a. 3M Scotchshield Ultra 800 .
      b. Substitutions: See Section 01 6000 - Product Requirements.

2.06 ACCESSORIES

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.

D. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option I. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.

E. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

F. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

G. Glazing Clips: Manufacturer's standard type.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

C. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry immediately before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

G. Install safety and security plastic film in accordance with manufacturer's instructions.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.

B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 CLEANING

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

B. Remove nonpermanent labels immediately after glazing installation is complete.

C. Clean glass and adjacent surfaces after sealants are fully cured.

D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.06 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

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Section 09 2116
Gypsum Board Assemblies

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal stud wall framing.

B. Gypsum wallboard.

C. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 05 4000 - Cold-Formed Metal Framing: Structural steel stud framing.

B. Section 07 2500 - Weather Barriers: Water-resistive barrier over sheathing.

1.03 REFERENCE STANDARDS

A. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014.

B. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2015.

C. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2013.

D. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.

E. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2014.

F. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.

G. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.

H. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.

I. GA-216 - Application and Finishing of Gypsum Board; 2013.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 METAL FRAMING MATERIALS

A. Manufacturers - Metal Framing, Connectors, and Accessories:
   1. ClarkDietrich: www.clarkdietrich.com/#sle.
   2. Jaimes Industries: www.jaimesind.com/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Structural Steel Framing for Application of Gypsum Board: See Section 05 4000.

C. Non-structural Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
   1. Studs: C-shaped with knurled or embossed faces.
   2. Runners: U shaped, sized to match studs.

2.03 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
   1. American Gypsum Company: www.americangypsum.com/#sle.
   2. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
   3. USG Corporation: www.usg.com/#sle.
   4. Substitutions: See Section 01 6000 - Product Requirements.

B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces, unless otherwise indicated.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
      a. Mold resistant board is required at all locations.
   3. Thickness:
      a. Vertical Surfaces: 5/8 inch.
   4. Mold Resistant Paper Faced Products:
      a. American Gypsum Company; M-Bloc Type X: www.americangypsum.com/#sle.
      b. CertainTeed Corporation; M2Tech 5/8" Type X Moisture & Mold Resistant Drywall: www.certainteed.com/#sle.
      c. Georgia-Pacific Gypsum; ToughRock Fireguard X Mold-Guard: www.gpgypsum.com/#sle.

C. Exterior Sheathing Board: See Section 05 4000.

2.04 GYPSUM BOARD ACCESSORIES

A. Water-Resistive Barrier: See Section 07 2500.

B. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.

C. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws,

corrosion-resistant.

D. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

B. Studs: Space studs at 16 inches on center. or as indicated on the structural drawings
   1. Extend partition framing to structure where indicated and to ceiling in other locations.
   2. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.

C. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.

3.03 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

3.04 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 0: Surfaces indicated to be finished in later stage of project.

B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.

END OF SECTION

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Section 09 2236
Lath

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal lath for portland cement plaster.

B. Metal lath for manufactured brick masonry.

1.02 RELATED REQUIREMENTS

A. Section 04 2613 - Masonry Veneer

B. Section 07 2100 - Board and Batt Insulation

C. Section 07 2500 - Weather Barriers: Water-resistive barrier under exterior plaster and stucco.

D. Section 09 2116 - Gypsum Board Assemblies: Sheathing on exterior walls.

1.03 REFERENCE STANDARDS

A. ASTM C847 - Standard Specification for Metal Lath; 2014a.

B. ASTM C933 - Standard Specification for Welded Wire Lath; 2014.

C. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.

D. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2014.

E. ASTM C1032 - Standard Specification for Woven Wire Plaster Base; 2014.

F. ASTM C1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster; 2016a.

1.04 SUBMITTALS

A. See Section 01 3300 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on furring and lathing components, structural characteristics, material limitations, and finish.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with at least three years of documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Lath and Accessories:
   1. Cemco: www.cemcosteel.com.
   2. Clarkwestern Dietrich Building Systems LLC: www.clarkdietrich.com.
   3. Structa Wire Corporation; Structa Mega Lath: www.structawire.com/#sle.
   4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FRAMING AND LATH ASSEMBLIES

A. Provide completed assemblies with the following characteristics:
   1. Maximum Deflection of Vertical Assemblies: 1:360 under lateral point load of 100 lbs.
   2. Maximum Deflection of Horizontal Assemblies: 1:240 deflection under dead loads and wind uplift.

2.03 LATH

A. Diamond Mesh Metal Lath: ASTM C847, galvanized; self-furring.
   1. Weight: To suit applicationcomply with deflection criteria and as specified in ASTM C841 or ASTM C1063 for framing spacing.
   2. Weight: 2.5 lb/sq yd.

B. Ribbed Metal Lath: ASTM C847, galvanized; 3/8 inch thick.
   1. Weight: To suit application_____ and as specified in ASTM C841 or ASTM C1063 for framing spacing.
   2. Weight: 3.4 lb/sq yd.
   3. Backed with treated paper.
   4. Location: At all horizontal surfaces

C. Corner Mesh: ASTM C1063; Formed sheet steel, minimum 0.018 inch thick, perforated flanges shaped to permit complete embedding in plaster, minimum 2 inch size; same finish as lath.

D. Beads, Screeds, Joint Accessories, and Other Trim: Depth governed by plaster thickness, and maximum possible lengths.
   1. Material: Formed sheet steel with rust inhibitive primer, expanded metal flanges.
   2. Casing Beads with Weep Holes: Square edges.
   3. Corner Beads: Radiused corners.
   4. Base Screeds: Beveled edges.
   5. Control Joints: Accordion profile with factory-installed protective tape, 2 inch flanges.

E. Refer to Section 04 7200 for metal lath requirements at cast stone masonry.

2.04 ACCESSORIES

A. Anchorage: Tie wire, nails, and other metal supports, of type and size to suit application; to rigidly secure materials in place, galvanized.

B. Fasteners: Self-piercing tapping screws; ASTM C1002 or ASTM C954.

C. Tie Wire: Annealed galvanized steel.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that substrates are ready to receive work and conditions are suitable for application.

C. For exterior plaster and stucco on stud walls, verify that water-resistive barrier has been installed over sheathing substrate completely and correctly; see Section 07 2500.

D. Do not begin until unacceptable conditions have been corrected.

E. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION - GENERAL

A. Install metal lath and furring for Portland cement plaster in accordance with ASTM C1063.

B. Install lath and furring for fire-rated assemblies in accordance with requirements of assembly as indicated.

3.03 CONTROL JOINT INSTALLATION

A. Locate joints as indicated on drawings and comply with ASTM C1063.

3.04 LATH INSTALLATION

A. Apply lath taut, with long dimension perpendicular to supports.

B. Continuously reinforce internal angles with corner mesh, except where the metal lath returns 3 inches from corner to form the angle reinforcement; fasten at perimeter edges only.

C. Place corner bead at external wall corners; fasten at outer edges of lath only.

D. Place base screeds at termination of plaster areas; secure rigidly in place.

E. Place 4 inch wide strips of lath centered over junctions of dissimilar backing materials, and secure rigidly in place.

F. Place lath vertically above each top corner and each side of door frames to 6 inches above ceiling line.

G. Place casing beads at terminations of plaster finish. Butt and align ends. Secure rigidly in place.

H. Place additional strip mesh diagonally at corners of lathed openings. Secure rigidly in place.

3.05 TOLERANCES

A. Maximum Variation from True Lines and Levels: 1/8 inch in 10 feet.

B. Maximum Variation from True Position: 1/8 inch.

END OF SECTION

Section 09 2400
Cement Plastering

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cement plastering.

1.02 RELATED REQUIREMENTS

A. Section 04 7200 - Cast Stone Masonry

B. Section 07 2500 - Weather Barriers: Water-resistive barrier.

C. Section 09 2236 - Lath: Lath, furring, beads, screeds, and joint accessories for plaster base.

1.03 REFERENCE STANDARDS

A. ASTM C91/C91M - Standard Specification for Masonry Cement; 2018.

B. ASTM C150/C150M - Standard Specification for Portland Cement; 2016.

C. ASTM C206 - Standard Specification for Finishing Hydrated Lime; 2014.

D. ASTM C897 - Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters; 2015.

E. ASTM C926 - Standard Specification for Application of Portland Cement-Based Plaster; 2015b.

F. ICC (IBC) - International Building Code; 2015.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittals procedures.

B. Product Data: Provide data on plaster materials and trim accessories.

C. Samples:
   1. Submit two samples, 36 by 36 inch in size illustrating finish color and texture.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

A. Exterior Plaster Work: Do not apply plaster when substrate or ambient air temperature is 40 degrees F or lower, or when temperature is expected to drop below 40 degrees F within 48 hours of application.

PART 2 PRODUCTS

2.01 CEMENT PLASTER APPLICATIONS

A. Lath Plaster Base: Metal lath.
   1. Plaster Type: Factory prepared plaster mix.
   2. Number of Coats: Three.
   3. First Coat: Apply to a nominal thickness of 3/8 inch.
   4. Second Coat: Apply to a nominal thickness of 3/8 inch.
   5. Finish: Acrylic.

B. Lath Veneer Base: Metal lath.
   1. Plaster Type: Factory prepared plaster mix.
   2. Number of Coats: Two.
   3. First Coat: Apply to a nominal thickness of 3/8 inch.
   4. Second Coat: Apply to a nominal thickness of 3/8 inch.
   5. Finish: Masonry veneer - refer to 04 2613 - Masonry Veneer

2.02 FACTORY PREPARED CEMENT PLASTER

A. Exterior Portland cement plaster system made of scratch and brown base coat, leveling coat with reinforcing mesh, and acrylic finish coat; install in accordance with ASTM C926.
   1. Manufacturers:
      a. LaHabra; Fiber-47 Scratch and Brown: www.lahabrastucco.com.
      b. Master Builders Solutions; Stucco Base: www.master-builders-solutions.com/en-us
      c. Parex USA, Inc; Armourwall 300: www.parexusa.com/#sle.

B. Premixed Textured Coating: Polymer modified acrylic coating, integrally colored, and trowel applied to substrates prepared in accordance with manufacturer's written installation instructions.
   1. Color: As indicated on drawings.
   2. Manufacturers:
      a. Parex USA Inc; AquaSol Sand Smooth: www.parex.com
      b. La Habra; Prema-Flex smooth:www.lahabrastucco.com
      c. Sto Corp; Stolit Lotusan, Fine: www.stocorp.com/#sle.

2.03 JOBSITE MIXED CEMENT PLASTER

A. Materials:
   1. Portland Cement: ASTM C150/C150M, Type I.
   2. Masonry Cement: ASTM C91/C91M, Type N.
   3. Lime: ASTM C206 Type S.
   4. Sand: Clean, well graded, and complying with ASTM C897.
   5. Water: Clean, fresh, potable, and free of mineral or organic matter that could adversely affect plaster.

B. Plaster Mixes: Proportioned in accordance with ASTM C926; parts by volume.
   1. First Coat Over Lath:
      a. Plaster Mix "CM": One part Portland cement, and one part Type N masonry cement.
      b. Minimum 2-1/2 parts and maximum 4 parts sand, per total volume of cementitious materials.

2.04 ACCESSORIES

A. Lath: See Section 09 2236.

B. Reinforcing Mesh: 4.5 oz/sq yd alkali-resistant mesh.

C. Water-Resistive Barrier: See Section 07 2500.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions are acceptable prior to starting this work.

B. Verify lath is flat, secured to substrate, and joint and surface perimeter accessories are properly in place.

C. Verify mechanical and electrical equipment and services located within areas to receive this work have been properly tested and approved.

3.02 Mixing

A. Mix only as much plaster as can be used prior to initial set.

B. Mix materials dry, to uniform color and consistency, before adding water.

C. Protect mixtures from frost or freezing temperatures, contamination, and excessive evaporation.

3.03 APPLICATION

A. Apply plaster in accordance with manufacturer's written instructions and comply with ASTM C926.

B. Base Coats:
   1. Apply base coat(s) to fully embed lath and to specified thickness.
   2. Follow guidelines in ASTM C926 and manufacturer's written installation instructions for moist curing base coats and application of subsequent coats.

C. Leveling Coat:
   1. Apply leveling coat to specified thickness.

D. Finish Coats:
   1. Primer and Acrylic Coatings:

a. Remove surface contaminants such as dust and dirt without damaging substrate.
b. Apply primer in accordance with manufacturer's instructions.
c. Apply finish coating in number of coats and to thickness recommended by manufacturer.

3.04 TOLERANCES

A. Maximum Variation from True Flatness: 1/4 inch in 10 feet.

3.05 REPAIR

A. Patching: Remove loose, damaged or defective plaster and replace with plaster of same composition; finish to match surrounding area.

END OF SECTION

Section 09 2523
Lime Based Plastering

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Exterior lime based plastering.

1.02 Related Requirements

1.03 Reference Standards

A. ASTM C35 - Standard Specification for Inorganic Aggregates for Use in Gypsum Plaster; 2001 (Reapproved 2014).

B. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006 (Reapproved 2011).

C. ASTM C842 - Standard Specification for Application of Interior Gypsum Plaster; 2005 (Reapproved 2010).

D. SOI Standards and Guidelines for Preservation - The Secretary of the Interior's Standards for the Treatment of Historic Properties; 2017.

1.04 Submittals

A. See Section 01 3300 - Submittals for submittals procedures.

B. Product Data: Submit manufacturer's product data and installation instructions for systems specified, demonstrating compliance with requirements.

C. Samples:
   1. Plaster Finish: Submit 12 inch by 36 inch sample of each required plaster finish. Divide each panel into thirds to illustrate each coat.
      a. Mount on plywood or hardboard using standard lath as a key.
      b. Sample shall include viewing pane head and jamb conditions

D. Conservation treatment quality control plan.

E. Manufacturer's qualification statement.

F. Plasterwork restorer's qualification statement.

1.05 Quality Assurance

A. Conservation Treatment Quality Control Plan: Prior to commencing work of this section, receive written approval of plan of proposed restoration work. Include the following:

1. Describe methods of protecting surrounding construction and landscape features.
2. Describe sequencing, work procedures, materials, and tools proposed for each type of conservation treatment specified.
    a. Include effects of likely weather variations on sequencing of treatments, overall construction schedule, and protection methods for completed work.
3. Describe methods for surveying original plasterwork.
4. Describe methods and approach to assure repair materials' matching and compatibility with original building materials.
5. Conservation plan to be reviewed and approved by City, Architect, and Historical Consultant prior to commencement of the work .

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least ten years of documented experience.

C. Plasterwork Restorer Qualifications: Company specializing in period plaster restoration with minimum ten years of documented experience.
1. Plastering Mechanics: Experienced, with demonstrated proficiency in lime plaster on historic adobe structures.
2. Experience based solely on application of veneer plaster, gypsum plaster, or cement plaster is not sufficient.
3. Minimum year requiement may be waived upon submittal of qualifications to the installer and approval by the City, Architect, and Historical Consultant.

D. Copies of Documents at Site: Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.06 MOCK-UPs

A. Provide one mock-up panel 48 inches wide by 48 inches tall using existing exposed masonry wall as substrate to show workmanship and method of blending new work with existing plaster.
1. Divide panels into three sections:
    a. Install base coat on the entire panel.
    b. Install second coat full height of panel by width of panel less approximately 9 inches.
    c. Install finish coat full height of panel by panel width less approximately 18 inches.
    d. Cure mock-up for two weeks using procedures appropriate for weather conditions. Obtain Architect's review and approval.
    e. If the review requires rework, prepare second mock-up panel of the same dimensions and characteristics as the first and incorporate Architect’s review comments.

B. Locate where directed.

C. Mock-up may remain as part of the work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original and unopened packaging, with brand names and manufacturer's labels intact and legible.

B. Store materials in dry location, fully protected from weather.

1.08 Field Conditions

A. Weather Requirements:
   1. Do not apply plaster when ambient temperature is less than 40 degrees F.
   2. Do not

PART 2 - PRODUCTS

2.01 Materials

A. Hydraulic Hydrated Lime:
   1. Manufacturers:
      a. Saint Astier; Natural Hydraulic Lime NHL 3.5: www.stastier.com/#sle.
      b. Substitutions: As approved by Architect and Histroic Consultant

B. Aggregate for Base Coats: Natural sand complying with ASTM C35.

C. Aggregate for Finish Coats: ASTM C842.

D. Lath and Accessories:
   1. Lath: Open veave, self-furring, glass fiber reinforcing lath
      a. Manufacgturer: Master Builders Solutions
      b. Product: PermaLath 1000
      c. Color: Grey
      d. Thickness: 1/4" nominal
   2. Fasteners: Nails, staples, or other approved metal supports, of type and size to suit application, compatible with lath and plaster, and rigidly securing lath and accessories in place.
      a. 3" deck screws with 1/4" fender washers galv. or zinc coated
   3. Viewing Frame
      a. 2"x4" nominal clear vertical grain heart redwood
      b. Glazing: 1/8" think clear Lexan
      c. Anchors: As indicated on the plans

E. Plaster Mixing:
   1. Mix materials in accordance with manufacturer's instructions.

PART 3 - EXECUTION

3.01 Monitoring

A. Monitoring shall be performed by a qualified historian during the preservation process. Historian my stop work if not in accordance with the contract documents and approved Conservation Treatment Quality Control Plan.

3.02 Examination

A. Areas of full or partial removal of existing plaster are indicated on drawings.

B. Examine areas indicated for removal and sound them out to confirm extent of work. Additional sections of existing plaster may have deteriorated subsequent to issuance of Contract Documents.

C. Sound out existing plaster to determine extent of hollow, separated installation. Mark extent of hollow, separated installation of existing surfaces .
   1. Assist Architect and Historical Consultant in examining marked area to confirm extent of area requiring full or partial removal.

3.03 Existing Plaster Removal

A. In areas indicated, remove existing plaster to expose underlying masonry substrate.

B. Select, employ, and control methods of removal.
   1. Do not remove sound plaster.
   2. Protect substrate and adjacent materials to remain from damage.
   3. Provide scoured or fractured aggregate face on plaster to remain.
   4. Leave square-edged profile, 75 degrees to 105 degrees measured between plane of wall and edge thickness, between areas of partial depth and full depth removal.

C. Do not use power-operated grinders.

3.04 Plaster Mixing on Site

A. Mix plaster in accordance with manufacturer's instructions. Do not add water or other materials unless recommended by the manufacturer to obtain desired workability.

3.05 Plaster Application

A. General:
   1. All work shall comply with the SOI Standards and Guidelines for Preservation and National Park Service Preservation Briefs and Preservation Tech Notes referenced in Applied Earthworks Phase 1 Report.
   2. Comply with lime manufacturer's instructions.
   3. Comply with application recommendations in Conservation Treatment Quality Control Plan.

B. Prefill depressions or low areas in masonry substrate with coats of plaster applied not greater than 3/8 inch nominal to level the surface prior to applying plaster coats.

C. Install coats as follows:
   1. First or Scratch Coat: 1/8-3/16-inch nominal thickness.
   2. Second, Strengthening, or Brown Coat: 5/8-3/4-inch nominal thickness.
   3. Top or Finish Coat: One layer of 3/16-3/8-inch nominal thickness.
      a. Surface Texture: Match Exiting
   4. After consolidating the scratch coat and when thumbprint hard, scratch the surface to provide key for subsequent coat.
   5. Compact each base coat using a wood float. Rewet, by misting, and float brown coat at least twice to consolidate mortar during drying. Float to open-grained surface to provide sufficient key for finish coat.

6. Float finish coat to compact and provide uniform texture and color finish. Do not overwork. Patch minor imperfections by floating small quantities of fairly dry finish coat mixture into the surface.
7. Uniformity:
   a. Obtain uniform color within the limits of color variation, as determined by the Architect.
8. Tolerances: Deviation from plane not to exceed 1/8 inch in 10 feet, measured with a straightedge at any location on surface.
9. Curing:
   a. Allow approximately one to three weeks or more curing time between coats according to temperature and humidity.
   b. Rewet cured coats before applying subsequent coats.
10. Final Wash Coat: Apply lime wash to surface in three coats, allowing for suction during application and drying between coats.

3.06 Jointing

A. Do not bridge expansion or control joints.

3.07 Curing

A. Protect plaster against uneven and excessive evaporation of moisture and from strong, dry airflow.
   1. Apply and cure plaster as required by climatic and job conditions to prevent drying out during curing period.
   2. Cover with plastic sheeting to protect from frost, heavy rain, strong winds, and direct sunlight for minimum of 72 hours after application.
   3. Mist plaster surfaces three times per day - morning, noon, and evening - to ensure plaster environment remains at 90 percent relative humidity during the first 72 hours of curing each coat.
   4. Do not use commercial curing compounds.

3.08 Adjusting

A. Corrective Measures: Cut out and replace defective areas and repair to match acceptable work.
   1. Defective Work: Includes, but is not limited to:
      a. Areas showing cracks, dents, crazing, blisters, and other surface imperfections.
      b. Areas where bond to substrate has failed.

3.09 Cleaning

A. Remove and discard temporary protection after plaster work in each area has been completed. Remove plaster from other exposed surfaces, leaving them in undamaged condition; dispose of packaging materials and plaster debris.

END OF SECTION

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Section 09 3000
Tiling

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for wall applications.

B. Cementitious backer board as tile substrate.

C. Ceramic accessories.

D. Ceramic trim.

E. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 04 2000 - Unit Masonry Concrete Masonry Walls

B. Section 09 2400 - Cement Plastering: Lath and Portland cement scratch coat, where required by the TCNA (HB) Method specified.

1.03 REFERENCE STANDARDS

A. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium).; 2017.

B. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar; 2012.

C. ASTM C847 - Standard Specification for Metal Lath; 2014a.

D. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2015.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by affected installers.

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.

D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches in size illustrating pattern, color variations, and grout joint size variations.

E. Installer's Qualification Statement:
   1. Submit documentation of National Tile Contractors Association (NTCA) or Tile Contractors' Association of America (TCAA) accreditation.

F. Maintenance Materials: Furnish the following for City's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Tile: 2 percent of each size, color, and surface finish combination, but not less than 10 of each type.

1.06 QUALITY ASSURANCE

A. Maintain one copy of and ANSI A108/A118/A136 and TCNA (HB) on site.

B. Installer Qualifications:
   1. Company specializing in performing tile installation, with minimum of five years of documented experience.
      a. Accredited Five-Star member of the National Tile Contractors Association (NTCA) or Trowel of Excellence member of the Tile Contractors' Association of America (TCAA).

1.07 MOCK-UPs

A. See Section 01 4000 - Quality Requirements for general requirements for mock-up.

B. Construct tile mock-up where indicated on drawings, incorporating all components specified for the location.
   1. Minimum size of mock-up is indicated on drawings.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.09 FIELD CONDITIONS

A. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers: All products by the same manufacturer.

1. Dal-Tile Corporation: www.daltile.com/#sle.
2. Substitutions: See Section 01 6000 - Product Requirements.

B. Gauged Porcelain Tiles and Panels/Slabs: ANSI A137.3 standard grade.
1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.
2. Size: 12 inch by 24 inch, nominal.
3. Thickness: 3/8 or 7/16 inch.
4. Edges: Square.
5. Surface Finish: Polished and Unpolished .
   a. Field Finish: Polished
   b. Accent Finish: Unpolisehd
6. Color(s): White UC10.
7. Grout Joint Width: 1/8"
8. Grout Color: As selected by architect form manufacturer's full range.
9. Pattern: As indicated on the drawings.
10. Products:
    a. Dal-Tile Corporation; Uniform Concrete: www.daltile.com/#sle.

2.02 TRIM AND ACCESSORIES

A. Ceramic Accessories: Glazed finish, same color and finish as adjacent field tile; same manufacturer as tile.

B. Ceramic Trim: Matching bullnose, double bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.
1. Applications:
   a. Open Edges: Bullnose.
   b. Inside Corners: Jointed.
   c. Floor to Wall Joints: Cove base.
2. Manufacturers: Same as for tile.

C. Non-Ceramic Trim: Brushed stainless steel, style and dimensions to suit application, for setting using tile mortar or adhesive.
1. Manufacturers:
   a. Schluter-Systems: www.schluter.com/#sle.

2.03 SETTING MATERIALS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:
1. ARDEX Engineered Cements: www.ardexamericas.com/#sle.
2. Custom Building Products: www.custombuildingproducts.com/#sle.
3. Substitutions: See Section 01 6000 - Product Requirements.

C. Improved Latex-Portland Cement Mortar Bond Coat: ANSI A118.15.
1. Applications: Use this type of bond coat where Large and Heavy Tile (LHT) mortar is indicated.

2.04 GROUTS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:
   1. ARDEX Engineered Cements: www.ardexamericas.com/#sle.
   2. Custom Building Products: www.custombuildingproducts.com/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

C. High Performance Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.
   1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
   2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
   3. Color(s): As selected by Architect from manufacturer's full line.

2.05 THICK-BED MATERIALS

A. Mortar Bed Materials: Portland cement, sand, latex additive, and water.

B. Cleavage Membrane: No. 15 asphalt saturated felt.

C. Membrane at Walls: No. 15 asphalt saturated felt.

D. Metal Lath: ASTM C 847, Flat diamond mesh, of weight to suit application, galvanized finish.

2.06 ACCESSORY MATERIALS

A. Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, 7/16 inch thick; 2 inch wide coated glass fiber tape for joints and corners.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

B. Verify that required wall-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles bullnosed.

F. Install ceramic accessories rigidly in prepared openings.

G. Install non-ceramic trim in accordance with manufacturer's instructions.

H. Sound tile after setting. Replace hollow sounding units.

I. Keep control and expansion joints free of mortar, grout, and adhesive.

J. Keep expansion joints free of adhesive or grout. Apply sealant to joints.

K. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

L. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.

M. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

N. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.04 INSTALLATION - WALL TILE

A. On interior walls install in accordance with TCNA (HB) Method W201, mortar bed over concrete and masonry with waterproofing membrane.

3.05 CLEANING

A. Clean tile and grout surfaces.

3.06 PROTECTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

3.07 SCHEDULE

END OF SECTION

Section 09 9113
Exterior Painting

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
   1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
   2. Exposed steel surfaces such as structural steel elements
   3. Exposed galvanized metal surfaces such as sheet metal flashing, vents, and trim.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, zinc, and lead.
   6. Floors, unless specifically indicated.
   7. Brick, glass unit masonry, architectural concrete, cast stone, integrally colored plaster and stucco.
   8. Glass.
   9. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 01 8113 - Sustainable Design Requirements – LEED for Homes, including VOC restrictions

1.03 DEFINITIONS

A. Comply with ASTM D16 for interpretation of terms used in this section.

1.04 REFERENCE STANDARDS

A. ASTM C67/C67M - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile; 2018.

B. ASTM C410 - Standard Specification for Industrial Floor Brick; 2013.

C. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2014.

D. ASTM D2369 - Standard Test Method for Volatile Content of Coating; 2010, with Editorial Revision (2015).

E. ASTM D6490 - Standard Test Method for Water Vapor Transmission of NonFilm Forming Treatments Used on Cementitious Panels; 1999.

F. ASTM D7089 - Standard Practice for Determination of the Effectiveness of Anti-Graffiti Coating for Use on Concrete, Masonry and Natural Stone Surfaces by Pressure Washing; 2021.

G. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2021.

H. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition, www.paintinfo.com.

I. South Coast Air Quality Management District (SCAQMD) Rule 1113.

J. SSPC-SP 1 - Solvent Cleaning; 2015.

K. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.05 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
   1. Where sheen is specified, submit samples in only that sheen.
   2. Paint color submittals will not be considered until color submittals for major materials not to be painted, such as factory finished metals and roof tiles, have been approved.

C. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer.

B. Paints:
1. Base Manufacturer: Dunn Edwards Paints, www.dunnedwards.com
2. Behr Process Corporation: www.behr.com/#sle.
3. PPG Paints: www.ppgpaints.com/#sle.
4. Sherwin-Williams Company: www.sherwin-williams.com/#sle.

2.02 PAINT SYSTEMS - EXTERIOR

A. Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including primed metal and plaster.
1. Two top coats and one coat primer.
2. Top Coat(s): Exterior Latex.
    a. Products:
        1) Dunn Edwards EVERSHIELD, Exterior Flat Paint (EVSH10)
        2) Dunn Edwards EVERSHIELD, Exterior Velvet Paint (EVSH20)
        3) Dunn Edwards EVERSHIELD, Exterior Eggshell Paint (EVSH30)
        4) Dunn Edwards EVERSHIELD, Exterior Low Sheen Paint (EVSH40)
        5) Dunn Edwards EVERSHIELD, Exterior Semi-Gloss Paint (EVSH50)
        6) Dunn Edwards EVERSHIELD, Exterior Gloss Paint (EVSH60)

7) Behr Premium Plus Exterior Flat [No. 4050]. (MPI #10)
8) Behr Premium Plus Exterior Satin Enamel [No. 9050]. (MPI #15)
9) Behr Premium Plus Exterior Semi-Gloss Enamel [No. 5050].
10) Behr Premium Plus Interior/Exterior Hi-Gloss Enamel [No. 8050]. (MPI #119)

3. Primer: As recommended by top coat manufacturer for specific substrate.

2.03 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Water and Graffiti- Resistant Treatment: Use clear-drying, penetrating, water-based silicone emulsion for weatherproofing masonry materials and protecting them from graffiti attacks without altering their natural appearance.
1. Properties:
a. Total Solids per ASTM D2369: Minimum Nine (9) percent.
b. Comply withCalifornia VOC regulations.
c. Water Absorption Reduction (Brick) per ASTM C67/C67M: Greater than 96 percent.
d. Water Absorption Reduction (CMU) per ASTM C410:
1) Heavy Weight CMU: Greater than 89 percent.
2) Split Face CMU: Greater than 95 percent.
e. Water Vapor Transmission per ASTM E96/E96M:
1) Clay Brick: Greater than 85 percent.
2) Concrete Block: Greater than 95 percent.
3) Mortar: Greater than 95 percent.
f. Water Vapor Transmission WVT per ASTM D6490: Minimum 88 percent retention.
g. Cleanability Level 2 per ASTM D7089
2. Products:
a. PROSOCO, Inc; Sure Klean Weather Seal Blok-Guard & Graffiti Control VOC 9: prosoco.com
b. Or approved equal
c. Substitutions: Section 01 6000 - Product Requirements.

C. Patching Material: Latex filler.

D. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:

1. Exterior Plaster and Stucco: 12 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

F. Exterior Plaster: Fill hairline cracks, small holes, and imperfections with exterior patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

G. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

H. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance.

D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

END OF SECTION

Section 10 1313
Electronic Directories

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Freestanding electronic display directory

1.02 RELATED REQUIREMENTS

A. Division 26 0000 - Electrical: Conduits and conductors

B. Division 27 0000 - Communications: Communications systems

C. Section 32 1313 - Concrete Paving: Base for directories including anchor bolts.

1.03 REFERENCE STANDARDS

A. ANSI/Infocomm 10 - Audiovisual Systems Performance Verification; 2013.

B. ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact); 1993 (Reapproved 2010).

C. ASTM D3359 - Test Method for Measuring Adhesion by Tape Test; 2009.

D. ASTM D3363 - Standard Test Method for Film Hardness by Pencil Test; 2005 (Reapproved 2011).

E. BS EN 60529 - Degrees of protection provided by enclosures (IP Code); 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting two weeks prior to the start of the work of section 32 1313 - Concrete Paving ; require attendance by all affected installers.

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Provide manufacturer's data sheets on electronic directory systems including recommendations for preparation, storage and handling, and installation.

C. Shop Drawings: Indicate cable routing, connections between equipment, anchor and support details, and adjacent construction.

D. System Setting Backup: Provide an electronic file of all system settings.

E. Security Items:
   1. Provide four sets of keys for each locked equipment enclosure.
   2. Provide passwords to access control functions for hardware and software user interfaces.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.

B. Authorized Manufacturer Representative: System shall be configured and commissioned by an authorized manufacturer representative.

1.07 DELIVERY, STORAGE, AND HANDLING

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide five year manufacturer warranty for video and control system with full replacement.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. TouchSource; Frontier Single Display; touchsource.com (Basis of Design)

B. I & E Company; iekiosk.com

C. Eflyn ; eflyn.com

D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PANELIZED LED VIDEO DISPLAY

A. Performance Requirements:
   1. Comply with performance standards based on tests conducted in accordance with ANSI/Infocomm 10.
   2. Display shall be IP 65 rated per BS EN 60529

B. Display Type : Flat.
   1. Scree Size: 55 inch diagonal
   2. Screen Type: Touch Screen
   3. Native Resolution: 1,920 x 1,080 (Full HD)
   4. Pixel Pitch: 0.63 mm
   5. Horizontal Viewing Angle: 170 degrees (plus/minus 85 degrees off center).
   6. Vertical Viewing Angle: 160 degrees (plus/minus 80 degrees off center).
   7. Brightness: 2500 Nits
   8. Color Gamut: 72%
   9. Mount Type: Free Standing/Self Supporting.

10. Location: Outdoor.
11. Aspect Ratio:16:9
12. Surface Treatment: Haze 3%, Quarter wave plate (allows viewing with polarized lenses)
13. Data Connections: RS232C, RJ45, or HDBaseT.
14. Input Source Compatibility: HDMI, USB, and HDBaseT.
15. Power Consumption: 310 watts typical, 450 watts maximum, 170 watts in energy saving mode.
16. Working Voltage: 120 VAC / 240 VAC at 60Hz.
17. Heat Flow: 1,536 BTU (maximum).

C. Products:
1. Samsung OH55F
2. LG XE4F-M

2.03 DISPLAY CONTROL UNIT

A. Interface Unit:
1. Cooling: Passive fanless with cooling plates
2. Display Driver: 8k up to 7680x4320 pixels
3. Memory: SSD
4. Working Voltage: 120 VAC / 240 VAC at 60Hz.

B. Products:
1. Aopen DEX5750

2.04 DISPLAY CABINET

A. Construction:
1. Material: Aluminum
2. Base: 1/2 inch thick
3. Frame: 1/8 inch
4. Gussets and reinforcing at hinges: 1/8 inch and 1/4 inch
5. Cover panels: 0.09 inch
6. Lower removeable cover panel: .125 inch

B. Features:
1. Access Panel: fully gasketed
2. Locking: Two nickel plated keyed alike plunger locks
3. Ventilation: Intake at bottom with vents on sides and top
   a. Fans: Two 80mm computer fans mounted on vibration isolators
4. Power: Internal J-box with 1/2 inch threaded inlets and clear in use cover
5. Control Unit Enclosure: Control unit shall be enclosed within an IP 66 rated cabinet within the display cabinet.

C. Finish:
1. Powder coated polyester with the following cured film propterties
   a. Impact resistance
      1) Direct: 100 inch pounds minimum per ASTM D2794
      2) Indirect: 100 inch pounds minimum per ASTM D2794
   b. Pencil Hardness: 2H per ASTM D3363
   c. Cross Hatch Adhesion: 4B per ASTM D3359

2. Finish to be protected by clear polyester overcoat for exterior use.
3. Colors: As selected by Architect from coating manufactuers full line of available colors and finishes including metalics and hammertones.

2.05 CONTENT MANAGEMENT

A. Directory to include content management system
   1. All management of the digital directory must be done centrally through a Centralized Cloud Based or hosted password authenticated server.
   2. All listings and content must be backed up to a secondary or "cloud-based" location for redundancy.
   3. Vendor must offer and support unlimited cloud-based backups & hosting.
   4. Content updating should be designed for ease of use through common sets of requirements including:
      a. All content updating should be designed to be executed by non-technical staff with contextual help for the operator.
      b. Operators must be able to instantly update messaging with Real Time messaging takeover.
      c. Must be able to have unlimited user accounts for updating with no additional cost for additional updating licenses.

B. Security Requirements:
   1. Administrator access should be capable of multi-factor authentication processes.
   2. All communication from the client-side device must be outbound only over HTTPS or other encrypted protocols.
   3. Onsite client devices must be deployed on an operating system that can be customized to limit all unnecessary applications, protocols, and ports.
   4. All remote access must be initiated via outbound-only communication and via HTTPS or similar secure connectivity.

C. Software Support
   1. Systems must be capable of notification to a US-based support desk in the event of an outage or downtime event.
   2. Must provide US-based support answered by English speaking operators with technical skills to support the products.
   3. Must be able to provide a 5 year software support contract option.
   4. Support software must auto-detect when media player or program is non-functional and notify support desk.
   5. Vendor must provide unlimited access to software updates, patches, and upgrades while supported by the installed media players.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrates and support structure is in place and properly prepared.

B. Verify that required power and data sources are provided.

C. Notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Do not proceed with installation until support structure and substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions .

B. Install electronic directories level and plumb with fasteners reccommended by the manufacturer.

3.04 CLOSEOUT ACTIVITIES

A. Demonstrate proper operation and maintenance of equipment to City's designated representative.

3.05 PROTECTION

A. Protect installed products from subsequent construction operations.

END OF SECTION

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Section 10 1400
Signage

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Room and door signs.

1.02 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

C. CBC Chapter 11B - California Building Code - Accessibility to Public Buildings, Public Accommodations, Commercial Buildings and Public Housing; 2022.

D. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.03 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
   1. When room numbers to appear on signs differ from those on drawings, include the drawing room number on schedule.
   2. When content of signs is indicated to be determined later, request such information from City through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
   3. Submit for approval by City through Architect prior to fabrication.

C. Samples: Submit two samples of each type of sign, of size similar to that required for project, illustrating sign style, font, and method of attachment.

D. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.

1.04 QUALITY ASSURANCE

1.05 DELIVERY, STORAGE, AND HANDLING

A. Package signs as required to prevent damage before installation.

B. Package room and door signs in sequential order of installation, labeled by floor or building.

C. Store tape adhesive at normal room temperature.

1.06 FIELD CONDITIONS

A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.

B. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Flat Signs:
1. Best Sign Systems, Inc: www.bestsigns.com. Basis of Design
2. Mohawk Sign Systems, Inc: www.mohawksign.com/#sle.
3. Seton Identification Products: www.seton.com/aec.
4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 SIGNAGE APPLICATIONS

A. Accessibility Compliance: Signs are required to comply with CBC Chapter 11B, ADA Standards, and ICC A117.1, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.

B. Room and Door Signs: Provide a sign for every doorway, whether it has a door or not, not including corridors, lobbies, and similar open areas.
1. Sign Type: Flat signs with engraved panel media as specified.
2. Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.
3. Character Height: 1 inch.
4. Sign Height: 2 inches, unless otherwise indicated.
5. Service Rooms: Identify with room names and numbers to be determined later, not those indicated on drawings.
6. Rest Rooms: Identify with pictograms, the names "MEN", "WOMEN" and duplicate in braille.
    a. Verify gender identity signage for restrooms with city and architect prior to fabrication.

2.03 SIGN TYPES

A. Flat Signs: Signage media without frame.
1. Edges: Square.
2. Corners: Square.
3. Wall Mounting of One-Sided Signs: Tape adhesive.

B. Color and Font: Unless otherwise indicated:
1. Character Font: As selected by the city.
2. Character Case: Upper case only.
3. Background Color: As selected by City.

4. Character Color: Contrasting color.

2.04 TACTILE SIGNAGE MEDIA

A. Engraved Panels: Laminated colored plastic; engraved through face to expose core as background color:
   1. Total Thickness: 1/16 inch.

B. Applied Character Panels: Acrylic plastic base, with applied acrylic plastic letters and braille.
   1. Total Thickness: 1/8 inch.
   2. Letter Thickness: 1/8 inch.
   3. Letter Edges: Square.

2.05 ACCESSORIES

A. Exposed Screws: Stainless steel.

B. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install neatly, with horizontal edges level.

C. Locate signs and mount at heights indicated on drawings and in accordance with CBC Chapter 11B, ADA Standards and ICC A117.1.

D. Protect from damage until Date of Substantial Completion; repair or replace damaged items.

3.03 FIELD INSPECTION

A. Per CBC Chapter 11B signs and identification devices shall be field inspected after installation and approved by the enforcing agency prior to the issuance of a final certificate of occupancy per Chapter 1, Division II, Section 111, or final approval where no certificate of occupancy is issued. The inspection shall include, but not be limited to, verification that Braille dots and cells are properly spaced and the size, proportion and type of raised characters are in compliance with these regulations.

END OF SECTION

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Section 10 2113.17
Phenolic Toilet Compartments

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Phenolic toilet compartments.

1.02 RELATED REQUIREMENTS

A. Section 10 2800 - Toilet, Bath, and Laundry Accessories.

1.03 REFERENCE STANDARDS

A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

B. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2015.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Provide data on panel construction, hardware, and accessories.

C. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall supports, door swings.

D. Samples: Submit two samples of partition panels, 4 by 4 inch in size illustrating panel finish, color, and sheen.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Phenolic Toilet Compartments:
   1. Partition Systems International of South Carolina; Phenolic Toilet Partitions: www.psisc.com/#sle.
   2. Substitutions: Section 01 6000 - Product Requirements.

2.02 PHENOLIC TOILET COMPARTMENTS

A. Toilet Compartments: Factory fabricated doors, pilasters, and divider panels made of solid phenolic core panels with through color, floor-mounted headrail-braced.
   1. Color: Black

2. Fire Rating: Class A

B. Doors:
1. Thickness: 3/4 inch.
2. Width: 24 inch.
3. Width for Handicapped Use: 36 inch.
4. Height: 72 inch. Set 6" above finsih floor

C. Panels:
1. Thickness: 3/4 inch.
2. Height: 72 inch. Set 6" above finsih floor

D. Pilasters:
1. Thickness: 1 inch.
2. Width: As required to fit space; minimum 4 inch.

2.03 ACCESSORIES

A. Pilaster Shoes: Formed ASTM A666 Type 304 stainless steel with No. 4 finish, 3 inch high, concealing floor fastenings.
1. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.

B. Head Rails: Hollow stainless steel, 1 inch by 1-1/2 inch size, with anti-grip profile and cast socket wall brackets.

C. Wall and Pilaster Brackets: Satin stainless steel; manufacturer's standard type for conditions indicated on drawings.

D. Attachments, Screws, and Bolts: Stainless steel , tamper proof type.

E. Hardware: Satin stainless steel:
1. Pivot hinges, gravity type, adjustable for door close positioning.
a. 14 ga. stainless steel
b. Provide self closing hinges at accessible stall
2. Door Latch: Slide type with exterior emergency access feature. Cast Stainless Steel
3. Door strike and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
4. Coat hook with rubber bumper; one per compartment, mounted on door.
a. Mount at accessible reach range in accessible stall
5. Door Pull: Stainless Steel.
a. Provide accessible door pull at both sides of door at accessible stall

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify correct spacing of and between plumbing fixtures.

3.02 INSTALLATION

A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.

B. Maintain 3/8 inch to 1/2 inch space between wall and panels and between wall and end pilasters.

C. Attach panel brackets securely to walls using anchor devices.

D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

3.03 TOLERANCES

A. Maximum Variation From True Position: 1/4 inch.

B. Maximum Variation From Plumb: 1/8 inch.

3.04 ADJUSTING

A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch.

B. Adjust hinges to position doors in partial opening position when unlatched. Return out-swinging doors to closed position.

C. Adjust adjacent components for consistency of line or plane.

END OF SECTION

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Section 10 2800
Toilet, Bath, and Laundry Accessories

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Commercial toilet accessories.

B. Under-lavatory pipe supply covers.

C. Electric hand/hair dryers.

D. Utility room accessories.

1.02 RELATED REQUIREMENTS

A. Section 01 3514 - LEED Credit Summary

B. Section 01 3515 - LEED Certification Procedures

C. Section 06 1000 Rough Carpentry: Concealed supports for accessories, including in wall framing and plates.

D. Section 09 3000 - Tiling

E. Section 10 2113.19 - Plastic Toilet Compartments.

F. Section 22 0000 Plumbing: Toilet and lavatory fixtures

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.

D. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

E. ASTM C1036 - Standard Specification for Flat Glass; 2011.

F. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2008 (Reapproved 2013).

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement to receive anchor attachments.

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

C. Provide LEED submittal forms with the product submittal for each different product and manufacturer. Recycled content, regional distance and materials costs must be identified for each manufacturer and product. Submittals without the LEED forms will be rejected as incomplete. Refer to Specification Section 01 3516 – LEED Submittal Forms.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Bobrick.

B. Commercial Toilet, Shower, and Bath Accessories:
1. ASI - American Specialties, Inc: www.americanspecialties.com.
2. Bradley Corporation: www.bradleycorp.com.

C. Electric Hand/Hair Dryers:
1. American Dryer, Inc: www.americandryer.com.
2. Excel Dryer: www.exceldryer.com.
3. World Dryer Corporation; Basis of Design: www.worlddryer.com.
4. Bobrick Washroom Equipment Inc.: www.bobrick.com

D. Provide products of each category type by single manufacturer.

2.02 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.

B. Stainless Steel Sheet: ASTM A666, Type 304.

C. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.

D. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

2.03 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

B. Galvanizing for Items Other than Sheet: Comply with ASTM A123/A123M; galvanize ferrous metal and fastening devices.

2.04 Commercial Toilet Accessories

A. Toilet Paper Dispenser: Double roll, surface mounted bracket type, stainless steel, spindleless type for tension spring delivery designed to prevent theft of tissue roll.
   1. Products:
      a. Product: B-4288 manufactured by [Bobrick]

B. Electric Dryers: Traditional fan-in-case type, with downward nozzle.
   1. Style: High speed, energy efficient, fixed nozzle.
   2. Cover: Stainless steel with brushed finish.
   3. Heater: Capible of rasing 70 degree ambient air to 130 degrees.
   4. Fan Control: Hi/low speed switch
   5. Total Wattage: 950, maximum.
   6. Air Filter: HEPA to remove contaminants 0.3 microns or larger
   7. Warranty: 5 years.
   8. Product: Verdedri by Workd Dryer as Basis of Design

C. Soap Dispenser: Liquid soap dispenser, wall-mounted, surface, with stainless steel cover and stainless steel tank and working parts; push type soap valve, check valve, and window refill indicator, key lock.
   1. Minimum Capacity: 40 ounces.
   2. Product: B-2111 manufactured by Bobrick.

D. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
   1. Tempered Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
   2. Size: 24 inches wide by 36 inches tall.
   3. Frame: 0.05 inchangle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
   4. Backing: Full-mirror sized, minimum 0.03 inch galvanized steel sheet and nonabsorptive filler material.
   5. Product: B-2908 manufactured by Bobrick.

E. Seat Cover Dispenser: Stainless steel, surface-mounted, reloading by concealed opening at base, tumbler lock.
   1. Minimum capacity: 250 seat covers.
   2. Product: B-221 as manufactured by Bobrick

F. Grab Bars: Stainless steel, smooth surface.
   1. Standard Duty Grab Bars:
      a. Push/Pull Point Load: 250 pound-force, minimum.
      b. Dimensions: 1-1/4 inch outside diameter, minimum 0.05 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
      c. Length and Configuration: As indicated on drawings.
      d. Products: B-5806 as manufactured by Bobrick

2.05 UNDER-LAVATORY PIPE AND SUPPLY COVERS

A. Under-Lavatory Pipe and Supply Covers:
   1. Insulate exposed drainage piping, including hot, cold, and tempered water supplies under lavatories or sinks to comply with ADA Standards.
   2. Exterior Surfaces: Smooth non-absorbent, non-abrasive surfaces.
   3. Construction: 1/8 inch flexible PVC.
   4. Color: White.

2.06 Utility Room Accessories

A. Combination Utility Shelf/Mop and Broom Holder: 0.05 inch thick stainless steel, Type 304, with 1/2 inch returned edges, 0.06 inch steel wall brackets.
   1. Hooks: 4, 0.06 inch stainless steel rag hooks at shelf front.
   2. Mop/broom holders: Three spring-loaded rubber cam holders at shelf front.
   3. Length: 34 inches.
   4. Product: B-239 manufactured by Bobrick.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. For electrically-operated accessories, verify that electrical power connections are ready and in the correct locations.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

END OF SECTION

SECTION 22 0000

PLUMBING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Related Documents:

1. The other Contract Documents complement the requirements of this Section and apply to this Section
2. Division 1 - General Requirements and Section 23 0013 apply to the Work of this Section.
3. Where requirements of this Section exceed those in other Contract Documents, Contractor shall comply with the requirements of this Section.

B. Codes and Regulations:

1. California Plumbing Code (CPC).
2. California Mechanical Code (CMC).
3. California Building Code (CBC).
4. California Green Building Standards Code (CGBSC).
5. California Electrical Code (CEC).
6. California Fire Code (CFC).
7. National Fire Code (NFC).
8. National Fire Protection Association (NFPA).
9. Local Building Department.
10. Local Fire Marshal.
11. California Energy Code (CEnC).
12. In the event of conflict between or among specified requirements and pertinent regulations, the more stringent requirements will govern when so directed by the Architect.

C. Scope of Work: (Plumbing Section Division 15)

1. Material and labor including rough-in for and connection to fixtures, appliances and equipment are:
    a. WASTE AND VENT
        1. Soil piping
        2. Drain waste and vent piping (DWV)

3. Indirect waste piping
4. Wet vent piping
5. Floor drains.
6. Traps.
7. Vent flashings.

b. WATER

1. Potable water piping systems including, pressure reducing valves, relief valves, balancing valves, water hammer shock absorbers, air chambers.
2. Isolation, Zone and Control Valves.
3. Hot water systems including heaters and storage tanks.
4. Piping for water service.
5. Backflow preventers.
6. Disinfecting of water systems.
7. Insulation of piping and equipment for heat, sound, and vibration.

c. ALL PLUMBING FIXTURES AND SUPPORTS

1. Including, but not limited to:
   (a) Sinks, lavatories, water closets, service sinks, etc., - all materials
   (b) Supports (backing) for all plumbing fixtures and accessories
   (c) Installation of sinks in or part of drain boards - all materials

d. CONNECTIONS

1. Utilities-Sanitary sewer, storm drain, water, gas
2. Make-up water for heating and cooling systems
3. Hot water tanks
4. Temporary water, waste and air lines
5. The joining of pipe by any mode or method including, but not limited to, acetylene and arc welding, brazing, lead burning, plastics welding, soldering, wiped joints, caulked joints expanded or rolled joints, etc., used in connection with any of the work listed herein

e. LAYOUT AND CUTTING

1. Holes, chases, channels, the setting and erection of bolts, inserts, stands, brackets, stanchions, supports, sleeves, escutcheon plates, thimbles, hangers, conduits, and boxes.

f. EXCAVATION, TRENCHING AND BACKFILL

1. In connection with plumbing and piping work shown herein

g. TEMPORARY PIPING in connection with:

1. Building and construction work
2. Excavating and underground construction

h. PIPE HANGERS, SUPPORTS, ANCHORS, GUIDES, EXPANSION JOINTS

1. Including:

(a) Supports for equipment to which pipe is connected, such as tank supports

(b) Acoustical pipe isolation

(c) Isolators-dielectric and vibration

(d) Anchors and thrust blocks of concrete, metal, etc.

(e) Seismic bracing

(1) Anvil/Badger, Mason Industries, B-Line/TOLCO or approved equal.

(2) Seismic hanger system design shall comply with current CBC requirements and ASCE 7-05 and 7-10.

i. SIGNS AND NOTICES

j. ROOF FLASHINGS FOR PIPING PENETRATIONS

k. TESTS

1. Piping, for tightness
2. Equipment for performance
3. Operating instructions
4. Final operation

1.2 ACCESSIBLE PLUMBING FIXTURES

A. Accessible plumbing fixtures shall comply with all of the requirements of CBC Sections 11B-213, 11B-305, & 11B-308, 11B-Division 6.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

B. Without additional cost to the Owner, provide such other labor and materials as are required to complete the Work of this Section in accordance with the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.

C. Welder's Qualifications: Comply with ASME B31.8. The pipe welder shall have a copy of a certified ASME B31.8 qualification test report. Contractor shall also conduct a qualification test. Submit each welder's identification symbols, assigned number, or letter, used to identify work of the welder. Affix symbols immediately upon completion of welds. Welders making defective welds after passing a qualification test shall be given a requalification test and, upon failing to pass this test, shall not be permitted to work this contract.

D. Comply with NSF 14, "Plastics Piping System Components and Related Materials," for plastic, potable domestic water piping and components. Include marking "NSF-pw" on piping.

E. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9," for potable domestic water piping and components.

F. Comply with NSF 372, “Drinking Water System Components – Lead Content” for potable domestic water piping and components.

SUBMITTALS

G. Comply with pertinent provisions of Architectural Division 1 Sections.

H. Product Data: Within 35 calendar days after the Contractor has received the Notice to Proceed, submit 1 electronic PDF copy of the following to the Architect for approval prior to acquisition:

1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's specifications, catalog cuts, and other data needed to prove compliance with the specified requirements. All pieces of equipment shall be clearly identified on corresponding manufacturer's literature being submitted.

3. Shop Drawings or other data as required to indicate method of installing and attaching equipment, except where such details are fully shown on the Drawings.

4. Submittals for the entire project shall be submitted at the same time or may be rejected until all are included in one submittal package.
5. Submittals shall be provided electronically in PDF format, bookmarked by design tags for equipment and specification sections for materials. Incomplete or noncompliant submittals may be rejected.

1.4 DESIGN CHANGES CAUSED BY PRODUCT SUBSTITUTIONS

A. Contractor shall pay costs of design and installation for changes resulting from substitution of alternate products.

B. Acceptance of alternate products by Architect does not change this requirement.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of Architectural Sections.

B. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

PART 2 - PRODUCTS

2.1 WASTE, VENT, SEWER

A. Above and Below Grade

1. All waste, vent, sewer and storm lines shall be of cast iron soil pipe and fittings and shall conform to the requirements of CISPI Standard 301, ASTM A-888 or ASTM A-74 for all pipe and fittings. Pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute and be listed by NSF International.
    a. Acceptable Manufacturers:
        1. AB&I Foundry
        2. Charlotte Pipe and Foundry
        3. Tyler Pipe Company
    b. Couplings
        1. Standard Couplings: for hubless pipe and fittings shall conform to the manufacturer's installation instructions and local code requirements. Hubless coupling gaskets shall conform to ASTM Standard C-564 and be listed with NSF International.
    c. Mandatory Referenced Standards

1. Cast Iron Soil Pipe Institute Standard Specifications - Latest Issue
   (a) CISPI 301: Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
   (b) CISPI 310: Couplings for use in connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
2. ASTM Standard Specifications - Latest Issue
   (a) A-888: Standard Specifications for Hubless Cast Iron Soil Pipe and Fittings.
   (b) C-564: Standard Specifications for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.

2.2 DOMESTIC WATER PIPING

A. Below Grade Water Service outside building
   1. 3" NPS and smaller, Schedule 40 PVC Plastic Pipe and fittings. ASTM D1785, D2466, with Solvent Cement Joints ASTM D2564.
   2. 2" NPS and smaller, Type K Soft Annealed Temper Copper Tube ASTM B88 with Wrought Copper pressure fittings, ANSI B16.22. SIL-FOS - High temperature Brazing Metal Filler.

B. Above Grade (Distribution System inside building)
   1. Piping
      a. For soldered, brazed, and mechanical joints, 4" and smaller Copper Water Tube Type L Annealed Temper (Hard Drawn) ASTM B75 or ASTM B88.
   2. Fittings
      a. Wrought Copper Pressure Solder Fittings, ASME B16.22 or ASME B16-25, 95-5 Tin-Antimony Filler Metal.
      b. Bronze Flanges: ASME B16.24, Class 150, with solder-joint ends.
      c. Copper Unions: MSS SP-123, cast-copper alloy, hexagonal-stock body, with ball-and-socket, met-to-metal seating surfaces, and solder-joint or threaded ends.
      d. Press Fitting: Copper press fittings shall conform to the material and sizing requirements of ASME B16.18 or ASME B16.22. O-rings for copper press fittings shall be EPDM. Press fittings shall have an inboard bead design.

1. Copper Press Fittings: Viega/Rigid Tool Company, NIBCO, Elkhart/Apollo Xpress or approved equal.
2. 2"NPS and smaller: Wrought copper fitting with EPDM-rubber O-ring seal in each end.
3. 2-1/2" to 4"NPS: Cast-bronze or wrought copper fitting with EPDM-rubber O-ring seal in each end.

e. Installation- Ready™ fittings for grooved end copper tubing shall be manufactured to copper-tube dimensions, ductile iron conforming to ASTM A-536, Grade 65-45-12, with Installation-Ready™ ends, PVDF (Poly Vinylidene Fluoride) and Grade "EHP" EPDM-HP [Grade 'T' Nitrile] gasket, and ASTM A449 electroplated steel bolts and nuts, rated to 300 psi (2065 kPa) with Type K or L Copper Tubing.

f. All underground water piping within the building boundaries shall be ASTM B88-93a Type "L" annealed (soft) copper tube made up without fittings below the floor level.

2.3 VALVES

A. Acceptable Manufacturers: Victaulic, Milwaukee, Hammond, Jomar, NIBCO, others as noted.

Type	Size Range	Part Number
Ball	2" and smaller (2 or 3 piece)	Milwaukee UPBA400 Hammond UP8301A NIBCO 585-80-LF Victaulic Series P569

Note: Stem extensions of non-thermal-conductive material and protective sleeve that meets UL 2043 approved for inside air plenum and allows operation of value without breaking the vapor seal shall be used on all insulated pipe. NIBCO NIB-Seal handle or acceptable equal.

B. All valves in copper piping shall be soldered in or have screwed threads. Copper-tube dimensioned grooved joints are acceptable for 2-1/2" and larger sizes. Threaded valves shall be installed with sweat to screwed adapters.

C. Valves used on potable water services shall be UL classified in accordance with NSF-61, and meets the low-lead requirements of NSF-372.

2.4 HANGERS AND SUPPORTS

A. In general, all pipe hangers and supports shall conform to the following except where special pipe hangers and supports are detailed on the Drawings. In all cases hanger and support details on the Drawings shall take precedent over the following:

Piping 6" Size and Smaller:

Items	TOLCO	Anvil
Pipe Hanger	1; 2; 200	260
Side Beam Clamp for Wood Joist	58	207
Beam Coupling for Steel Beams	65	92
Rod Coupling for Connection to "Hilti"	70	135
Inserts in Concrete Decks	107; 109A; 109AF	N/A
Trapeze Hangers	Tolstrut A12	AS200
Pipe Clamp	TOLCO cush clamp	AS004OD-AS098OD

B. Similar items by HOLDRITE, Anvil International, Erico-Caddy, or TOLCO/B-Line will be acceptable.

C. Hanger Rods shall conform to the following table:

Tube/Pipe Size	Rod Diameter
1/2" to 4"	3/8"
5" to 8"	1/2"
10" to 12"	5/8"

D. Trapeze hangers may be used where parallel runs of pipe occur. All rods on trapeze hangers shall be 1/2" minimum size.

E. Hanger Support Spacing shall be as follows unless shown otherwise on the Drawings:

1. Horizontal:
    a. Cast Iron: Every other joint unless over 4 feet, then at every joint.
    b. Copper: Every 6 feet for 1-1/2 inch and smaller, and 10 feet for 2 inch and larger.
2. Vertical:
    a. Cast Iron: Base and every floor not to exceed 15 feet.
    b. Copper: Every floor not to exceed 10 feet.

F. Refer to the plumbing code for materials not listed above.

G. At all points where insulated pipe contacts a hanger or support, the point of contact shall be protected by metal insulation pipe shield #B3153 as manufactured by B-Line. Equivalent pipe protectors will be considered provided the substitute item meets the same standard of quality and performance as the specified item.

H. Abrasion-Protection Isolators: Use for prevention of damage to tubes and piping caused by abrasion when passing through or in contact with studs, joists, and similar framing.

1. Products:

a. HOLDRITE #200 Series Isolators and Clamps.

I. Dissimilar Metal Isolators: Use for prevention of damage to tubes and pipes caused by contact between dissimilar metals.

1. Products:

a. HOLDRITE #200 Series Isolators and Clamps.

J. Acoustical Noise & Vibration Isolation System: Consisting of through-stud isolators, pipe clamps, riser clamp pads, neoprene and felt lining material and associated support brackets. For applications requiring acoustical isolation of tubing, piping, and equipment from structure.

1. Products:

a. HOLDRITE Silencer System with HOLDRITE STOUT Bracket System.

K. Seismic restraint devices

1. Available Manufacturers:

a. Anvil/Badger

b. Mason Industries

c. B-Line Tolco Division of Eaton

2. Seismic hanger system design shall meet the requirements of IBC, CBC and ASCE 7-05 and 7-10.

2.5 WALL AND FLOOR PENETRATIONS

A. Fire walls and floors:

1. Wall and floor penetrations shall be protected with a U.L. approved fire rated system. The system shall be per the Drawing Details, or other manufacturer's installation instructions.

2. Fire stopping materials by Hilti, Metacaulk, or 3M are considered equal. The material shall be the same as called out for in the U.L. approved system.

B. Poured concrete walls and floors:

1. Pipes penetrating poured concrete walls and floors shall be protected by providing the following:

a. A Schedule 40 PVC sleeve one (1) size larger than the pipe or one quarter (1/4) inch of foam material wrapped around and secured to the pipe or packed and caulked with mineral wool.

b. Protection shall end flush with the wall or floor surface.

C. All walls and floors:

1. Piping passing through walls and floors exposed to view shall be provided with chrome plated split-ring escutcheon plates in finished areas. Brass or galvanized escutcheon plates may be used elsewhere.

2.6 FLASHING

A. All flashing shall be 4 lb. sheet lead and all vents penetrating the roof shall be flashed and counter-flashed. Stoneman Co. roof flashing assembly with 10" skirt or equal may be used.

B. The flashing for vents penetrating a metal roof shall have a corrosion resistant aluminum base compatible with the roofing system. A rubber type flashing by "Tech Specialties" shall be installed between the flashing and pipe.

2.7 VALVE BOXES

A. Brooks Products Inc., Christy Co., or equal with the word "Water" or "Gas" cast in cover as applicable.

2.8 CLEANOUTS

A. Provide cleanouts per Drawings and details on Drawings. Cleanouts as manufactured by J.R. Smith, Mifab, Sioux Chief, or Zurn are acceptable substitutes provided they are equal if approved by Engineer.

B. Cleanout tops to be installed with tamper-proof screws.

2.9 FLOOR DRAINS, FLOOR SINKS

A. Provide floor drains as specified on the Plumbing Fixture Schedule. Cast iron body floor drains as manufactured by J.R. Smith, Mifab, Sioux Chief, or Zurn are acceptable substitutes provided they are equal if approved by Engineer.

B. Provide floor sinks as specified on the Plumbing Fixture Schedule. Enameled cast iron floor sinks as manufactured by J.R. Smith, Mifab, Sioux Chief, Zurn, or Commercial Enameling are acceptable substitutes provided they are equal if approved by Engineer.

2.10 WATER HAMMER ARRESTORS

A. Provide Wilkins Piston Model #1250XL, Sioux Chief #65X-X, Precision Plumbing Products, or equal, as sized on the Drawings or required by PDI. Install per manufacturer’s instructions.

2.11 AUTOMATIC TRAP PRIMERS

A. Provide Precision Plumbing Products, J.R. Smith, Mifab, Sioux Chief, or Zurn as specified on the Drawings. Install per manufacturer's instructions.

2.12 PLUMBING FIXTURES

A. Fixture locations, quantities, types, sizes and connections shall be as shown on both the Plumbing and Architectural Drawings. If a conflict in fixture location is noted between the Plumbing and Architectural Drawings, the Architectural Drawings shall take precedence.

B. Fixtures shall be thoroughly protected against damage to the chrome plate or enamel, by chipping, scratching or other damage during the entire period of construction. Roof drains, floor sinks and drains, toilet and sink drains, plumbing vents, and all other similar fixtures shall be covered to prevent trash from entering the pipes until final installation of grates, domes, fixtures or other protective devices.

C. Provide fixtures as specified in the Plumbing Fixture Schedule.

D. Stainless Steel lavatories or sinks: Just, Elkay, Advance Tabco, Haws, or Acorn are acceptable substitutes provided they are equal if approved by Engineer.

E. Vitreous China fixtures: American Standard, Kohler, Mansfield, Sloan, Toto, or Zurn are acceptable substitutes provided they are equal if approved by Engineer.

F. Fixture carrier numbers listed are as specified on the Plumbing Schedule; however, carriers as manufactured by J.R. Smith, Mifab, or Zurn are acceptable provided they are equal.

2.13 CONNECTORS

A. Provide Brass Craft "Speedway" or equal heavy pattern iron pipe size brass stops, rigid or flexible supplies and chrome plated brass "P" traps. Stops in "Public" areas are to have screwdriver slots and those in "Private" areas are to have all cross handles.

B. Provide Brass Craft or equal flexible stainless steel braided water supplies to appliances. They may also be used to fixtures as an option to rigid supplies. Aquaflo is an acceptable substitute.

2.14 ACCESS BOXES

A. See section 15100 for access panels.

2.15 BACKFLOW PREVENTORS

A. Provide all potable water outlets with hose attachments with non-removable hose bibb backflow preventers per the C.P.C.

2.16 WATER HEATERS

A. Provide water heaters as specified in Plumbing Schedule or approved equal of size, capacity, recovery, and KW/BTUH input. American, A.O. Smith, Bradford White and State are considered equal. Heater shall be A.G.A. or U.L. listed.

1. Heater storage tank shall be provided with magnesium anodes, approved standard pressure/temperature relief valve and all standard factory trim.
2. Provide approved flexible copper supplies for the water heater water connections.

B. Provide an aluminum Smitty Pan Mfg. Co. overflow pan with 1" drain outlet or equal under water heater as specified on the drawings. Oatey, HOLDRITE, & Benjamin Mfg. Co are considered equal.

2.17 PRESSURE-TEMPERATURE RELIEF VALVE

A. Pressure-temperature relief valve shall be Wilkins TP220, TP3000 series, or equal.

B. Piping from valve to termination shall be Type L Copper, hard drawn with wrought copper pressure fittings and 95-5 tin antimony filler metal.

2.18 EXPANSION TANK

A. Expansion tank shall be Wilkins XT series as specified on the Drawings or approved equal in size and capacity. Amtrol expansion tanks are considered equal. Expansion tanks shall be lead-free for use in domestic water piping system.

2.19 WATER HEATER SEISMIC RESTRAINTS

A. Seismic restraints shall be Watts Spacemaker restraint system Model E-50 or E-100 as applicable for the water heater specified. Spacemaker Model #TSE-25 or Seismik Model #SR-2 may be substituted when first approved by the Engineer. Refer to details on drawings for additional specifications.

2.20 INSULATION

A. All pipe insulation shall conform to Section 120.3 of the California Energy Efficiency Standards except to the extent that this Specification supersedes the minimum standards as established by the Code, in which case this Specification shall take precedent. Outside insulation shall be protected with a hard plastic or metal shell covering.

B. Insulation and lining material shall meet requirements of flame spread not to exceed 25 and smoke developed not to exceed 50 as tested by Procedure ASTM-E-84, NFPA 255 or U.L. 723 and shall conform to NFPA 90A and 90B.

C. Interior primary condensate piping shall be insulated with Armacell AP/Armaflex tube insulation with reinforced lap seal or approved equal.

D. Domestic cold water piping shall be insulated with a minimum 1" insulation in unheated areas of the building and where exposed outside of the building.

E. Domestic hot water piping shall be insulated with Owens-Corning Fiberglass heavy density pipe insulation 25 ASJ/SSL-II (All Service Jacket/Double/ Self-

Sealing Lap). Insulation shall be UL rated non-combustible pipe insulation with a k factor of 0.24-0.28 @ 100 degrees F. mean temperature, an embossed vapor barrier laminated and pressure sealing lap adhesive. All lap and butt strips shall have integral pressure-sensitive strips and shall be applied in strict accordance with manufacturer's instructions.

1. Closed cell polyethylene foam by IMCOA or equal may be used at Contractor's option provided it meets the above requirements.

F. Insulation thickness' shown below are based on insulation having a conductivity range of 0.22 to 0.28 per BTU/inch per hour per square foot per °F temperature of 100 degrees F.

Temperature Range: Above 105°F-140°F

Pipe Size	Minimum Insulation Wall Thickness
1" and less	1.0"
1.25"	1.5"
1.5"	1.5"
2" and more	2.0"

G. Insulation materials not meeting the specified conductivity range shall be submitted for approval and determination of the insulation thickness required.

PART 3 - EXECUTION

3.1 GENERAL CONDITIONS

A. Examine the areas and conditions under which Work of this Section will be performed. Conditions detrimental to timely and proper completion of the Work shall be brought to the attention of the Architect before the installation of materials. Do not proceed until unsatisfactory conditions are corrected. Incorrectly installed materials requiring changes will be at Contractor's expense.

B. All plumbing fixtures, appliances, and appurtenances furnished with manufacturer's installation instructions shall be installed per those instructions.

3.2 PLUMBING SYSTEM LAYOUT

A. Lay out the plumbing system in careful coordination with the Drawings. Determine proper elevations for all components of the system and use only the minimum number of bends to produce a satisfactorily functioning system.

B. Follow the general layout shown on the Drawings in all cases except where other Work may interfere.

C. Lay out pipes to fall within partitions, walls, or roof cavities, and to not require furring other than as shown on the Drawings.

3.3 PIPING INSTALLATION

A. Pipe sizes as shown on drawings are Nominal Pipe Size (NPS) or Iron Pipe Size (IPS). Drawings and fixture schedule indicate pipe sizing per the CPC and Standard Engineering Practice. Pipe sizes shall be maintained to fixtures, appliances and equipment. Approved reducing fittings shall be installed at all points of connections.

B. Install piping generally square with building, free of traps or air pockets, and true to line and grade. Keep all piping tight to the building structure, unless pipe slope is required. Do not install piping in any locations where, in the Architect's opinion, it will interfere with the use of the building or create a safety hazard. Where space is inadequate, notify the Architect in time to avoid unnecessary Work. Install all exposed piping as high as possible without interfering with other trades.

C. Make changes in direction with manufactured fittings; use long radius elbows. Street elbows, bushings, close nipples and bending of pipe or tubing will not be allowed.

D. Provide "P" traps at sanitary sewer drainage devices without integral traps.

E. Underground plastic pipe will horizontally transition to metal pipe 5 feet before the above ground riser. Install plastic pipe with a minimum of 36" of cover when located under areas of possible vehicle traffic. Approved metallic pipe must be used if the minimum depth is not met. A tracer wire, terminating at each end at an exposed location, will be installed with all underground plastic pipe. Gas piping will also have a continuous tape marked "Gas" laid 6" above it.

    1. Piping may terminate a maximum of one foot above ground when encased in a listed metallic transition riser.

F. Use friction wrenches when installing brass, polished, or soft metal piping, and when installing piping exposed in finished areas. Replace piping showing wrench marks.

G. Attach escutcheon plates to pipes with set screws or spring clamps with concealed hinges. Continue insulation through escutcheon plates.

H. General:

    1. Proceed as rapidly as the building construction will permit.

    2. Thoroughly clean items before installation. Cap pipe openings to exclude dirt until fixtures are installed and final connections have been made.

    3. Cut pipe accurately, and work into place without springing or forcing, properly clearing windows, doors, and other openings. Excessive cutting or other weakening of the building will not be permitted.

4. Show no tool marks or threads on exposed plated, polished, or enameled connections from fixtures. Tape all finished surfaces to prevent damage during construction.
5. Provide sufficient swing joints, ball joints, expansion loops, and devices necessary for a flexible piping system, whether or not shown on the Drawings.
6. Support piping independently at pumps, coils, tanks, and similar locations, so that weight of pipe will not be supported by the equipment. Support the equipment independently from the pipe.
7. Pipe the drains from mechanical equipment, drip pans, relief valves, air vents and similar locations, to an open sight drain, floor drain, or other acceptable discharge point, and terminate with an air break or air gap per C.P.C.
8. Securely bolt all equipment, isolators, hangers, and similar items in place.

3.4 HANGER AND PIPE SUPPORT INSTALLATION

A. Support pipes from structure with assemblies specified. Provide auxiliary members, anchors, guides, and sway braces necessary to maintain pipe alignment and prevent excessive movement or strain on piping system or components; allow for expansion and contraction of piping. Provide at least one hanger for each branch. Do not use powder driven fasteners, wire, perforated tape, nails, wood blocking, or other makeshift devices to support pipe.

B. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.

C. Isolate piping systems from building structure to minimize noise transfer by using acoustical suspension isolator silencer and bracket system.

D. Protect tubing and piping from damage caused by abrasion when passing through studs, joists, and similar framing using abrasion protection isolators.

E. Penetration Protection: Provide allowance for thermal expansion and contraction of copper tubing passing through a wall, floor, ceiling or partition by wrapping with an approved tape or pipe insulation, or by installing through an appropriately sized sleeve. Penetrations of fire resistance rated assemblies shall maintain the rating of the assembly.

F. Prevent damage to piping and tubing caused by contact between dissimilar metals using insert system designed specifically for this application.

G. Attach supports to structure with bolts, screws or concrete anchors, per support manufacturer’s requirements.

H. Use pipe positioning systems in pipe spaces behind plumbing fixtures to support supply and waste piping for plumbing fixtures.

I. CPVC Piping Systems: Provide necessary allowance in piping systems to handle expansion and contraction. Install ample swings or offsets in branch connections to avoid undue strains on fittings or short pipe supplies. Provide expansion loops and pipe anchors as required and/or indicated on the drawings. Refer to manufacturers' recommendations for proper loop sizing of CPVC piping systems.

3.5 JOINTS AND CONNECTIONS

A. Cut pipe shall be reamed to full inside diameter of pipe. Cut threads straight and true. Insure all filings have been removed from inside of the pipe. Apply liquid Teflon to male pipe threads and not inside fittings. Use graphite on cleanout plug threads.

B. Couplings in cast iron "No-Hub" soil/waste pipe and fittings shall be made up with neoprene gaskets and stainless steel bands conforming to CISPI 310, torque to the manufacturer's specification with an approved torque wrench. Joints in hub and spigot shall be made up with compression gaskets conforming to ASTM C-564.

C. Joints in copper tube shall be made with 95-5 tin-antimony or lead-free solder, applied in strict accordance with the manufacturer's directions.

D. Dissimilar metals shall be isolated with dielectric couplings, "EPCO" or approved equal. Dielectric Waterway Fittings shall be UL classified in accordance with ANSI / NSF-61 for potable water service, Victaulic Style 647. Provide access panels at all hidden couplings.

E. Press Connections: Copper press fittings shall be made in accordance with the manufacturer's installation instructions. The tubing shall be fully inserted into the fitting and the tubing marked at the shoulder of the fitting. The fitting alignment shall be checked against the mark on the tubing to assure the tubing is fully engaged (inserted) in the fitting. The joints shall be pressed using the tool approved by the manufacturer.

3.6 SANITARY SEWER, VENT AND INDIRECT WASTE SYSTEM INSTALLATION

A. Install horizontal drainage piping at a minimum 2%, condensate 1%, slope unless otherwise noted. Where this is impractical notify the Architect before installing the pipes.

B. Install vent piping to drain back into the sewer system.

C. Provide cleanouts where shown on Drawings and where required by governmental agencies having jurisdiction.

1. All cleanouts to grade shall be firmly secured by means of a concrete block 20" square by 5" thick, and shall be flush with finished grade, unless otherwise noted on the plans.

D. Provide automatic trap primers as specified at floor sinks and drains as indicated on Drawings or where required by governmental agencies having jurisdiction. Provide access panels for all hidden mechanical trap primers.

3.7 VALVE INSTALLATION

A. Provide valves in the water system. Locate and arrange to provide complete regulation of apparatus, equipment, and fixtures.

B. Provide valves in at least the following locations:

1. In branches and/or headers of water piping serving a group of fixtures.
2. On both sides of apparatus and equipment.
3. For shutoff of risers and branch mains.
4. For flushing and sterilizing the system.
5. Where shown on the Drawings.

C. Locate valves for easy accessibility and maintenance. Provide access panels for all hidden valves.

D. Unions shall be installed downstream of all screwed valves.

3.8 WATER HAMMER ARRESTOR INSTALLATION

A. Provide water hammer arrestor on hot and cold water lines.

1. Install at all quick closing valves, solenoids, and supply headers at plumbing fixture groups.
2. Locate and size as shown on Drawings, and where not shown, locate in accordance with Plumbing and Drainage Institute Standard WH-201.
3. Install water hammer arrestor behind access panels.

3.9 BACKFLOW PREVENTION INSTALLATION

A. Protect plumbing fixtures, faucets, hose connections, and other equipment having plumbing connection, against possible back-siphonage.

B. Arrange for testing of backflow devices as required by the governmental agencies having jurisdiction.

3.10 PLUMBING FIXTURE INSTALLATION

A. Connect plumbing services to fixtures as shown on Drawings and as specified.

B. Provide & install compression stops and flexible supplies per fixture manufacturer's recommendation or as high as possible on wall directly below fixtures.

C. Install fixtures at right angles to, and tightly against, building surfaces, and in proper alignment. Fill gaps between fixtures and building surfaces with white grout. Mounting heights and locations shall be as shown on the Drawings, or, if not shown, as directed by the Architect.

3.11 INSULATION INSTALLATION

A. Ensure surfaces are clean and dry surfaces to application of insulation or adhesives.

B. Insulate piping, fittings, valves, and strainers. Leave unions exposed. Where insulation terminates, bevel ends of insulation and continue jacket over insulation and secure to pipe. Do not interrupt insulation at hangers, supports, clamps, or penetrations through structure. Fittings shall be finished with "Zeston" or approved equal fitting closures. If fitting closures not available, use 8 oz. canvas dipped in "Seal-Fas".

C. Attach longitudinal jacket laps and butt strips with factory applied pressure sensitive adhesive. On concealed piping only, outward clinching coated staples at two inch spacing may be used. Cover elbows with one piece polyvinyl chloride covers. Secure with tack fasteners. Tape ends of covers with matching tape on exposed piping. Seal off all cut ends with canvas and Benjamin Foster 30-36.

D. Install closed cell polyethylene foam per manufacturer's instructions.

E. Insulate traps and trap arms on floor sinks located above slab receiving discharge from ice machines and soda dispensers with ½" insulation.

F. Insulate primary condensate piping located within return air plenums with ½" wall thickness.

3.12 TESTING AND ADJUSTING

A. Provide personnel and equipment, and arrange for and pay the costs of, all required tests and inspections required by governmental agencies having jurisdiction. See Section 15100 for test requirements.

B. Where tests show materials or workmanship to be deficient, replace or repair as necessary, and repeat the tests until the specified standards are achieved.

C. Adjust the system to optimum standards of operation.

3.13 CLEANING (For potable water systems)

A. Disinfection: The hot and cold water distribution system shall be disinfected prior to being placed in service. The system shall be disinfected within 3 weeks of occupancy in accordance with AWWA C651 or the following requirements:

1. The piping system shall be flushed with potable water until discolored water does not appear at any of the outlets.
2. The system shall be filled with a water chlorine solution containing at least 50 parts per million of chlorine. The system shall be valved off and allowed to stand for 24 hours. Or, the system shall be filled with a water chlorine solution containing at least 200 parts per million of chlorine. The system shall be valved off and allowed to stand for 3 hours.
3. Following the standing time, the system shall be flushed with water until the chlorine is purged from the system.
4. Provide bacteriological sampling and analysis results to the Engineer for review.

3.14 WARRANTY

A. The contractor shall warranty all systems for proper operation installed by the contractor for not less than one calendar year from date of project completion. This completion date shall be set by the Architect or owner.

END OF SECTION 22 0000

SECTION 23 0013

GENERAL MECHANICAL REQUIREMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Related Documents:

1. The other Contract Documents complement the requirements of this Section.
2. Division 1 - General Requirements applies to the Work of this Section.
3. Where requirements of this Section exceed those in other Contract Documents, Contractor shall comply with the requirements of this Section.

B. Codes and Regulations:

1. In addition to complying with the specified requirements, comply with pertinent regulations of governmental agencies having jurisdiction.

C. Included: Work includes, but is not limited to the following:

1. Plumbing
2. Carpentry and metal Work required for Work of this Section and not specifically shown under another Section. Openings in concrete or masonry construction shall be either core drilled or saw cut unless indicated otherwise on Drawings.
3. Excavation and Backfill
4. Coordination Drawings

D. Related Work:

1. Painting (Division 09)
2. Cutting and Patching (Division 30)
3. Low voltage electrical control (Division 26)

1.2 DEFINITIONS

A. Furnish: Purchase and deliver to job site in new condition.

B. Install: Receive and store at job site until required; place secure and connect; furnish required appurtenances.

C. Provide: Furnish and install as defined above.

D. Section: Refers to a Section of these Specifications.

E. Standards: The issue in effect as of the date of the contract documents.

1.3 PROJECT RECORD DRAWINGS

A. Comply with pertinent provisions of Architectural Sections (Division 1).

1.4 SERVICE INTERRUPTIONS

A. When Work of this Section requires temporary shutdown of existing systems for connections, the shutdown shall be made only during pre-arranged time agreeable to the Owner.

1.5 CORRELATION, INTERPRETATION AND INTENT OF CONTRACT DOCUMENTS

A. The Mechanical Drawings are, in general, made to scale and the Contractor may obtain approximate distances and dimensions by scaling the Plans. It is distinctly understood, however, that it is done entirely at the Contractor's responsibility. Refer to Architect's Plans and Specifications for construction details, which will affect the Work and equipment. Examine the Architectural, Civil, Structural, Mechanical, Electrical, Landscape, Irrigation, Data, Fire Protection and Plumbing Plans and Specifications to ensure that this work does not conflict with the above trades. Plumbing, Mechanical and Electrical Plans are diagrammatic and, therefore, do not necessarily represent the exact installation. However, pipe sizing for utility services and ductwork are calculated per their respective codes and Standard Engineering Practice and shall be installed as sized from point of origin to terminal point. It shall remain the Contractor's responsibility to submit Shop Drawings if he/she has any questions about the final arrangement. Nothing on these Plans or Specifications shall be construed to permit work not conforming to all applicable codes and regulations.

PART 2 - PRODUCTS

2.1 ACCESS PANELS

A. If not called for under other Sections, furnish Milcor, Elmdor, or Jay R. Smith access panels where shown on the Drawings or required for maintenance access to completed Work of this Section. Submit size, type, and location of proposed access panels not specifically shown, for review by Architect.

B. Access panels shall be constructed of 16 gauge prime coated steel or stainless steel with screwdriver operated cam latch, concealed hinges, and fire rating equal to adjacent construction.

C. Provide flush type doors with:

1. Stainless steel finish for tiled surfaces.

2. Prime coated finish for other surfaces.

2.2 FLASHING

A. Provide watertight flashing at all openings through exterior walls and roof. Refer to Architectural Drawings.

2.3 PIPE WRAPPING

A. All pipe, metal components, and joints buried in ground shall be primed and protected with 10-mil tape double wrapped or approved equal per IAPMO IS 13-2006. Before tape application, all bare pipe and fittings to be wrapped must be coated with pipe wrap primer. Stretch first layer of tape to conform to the surface while spirally half-lapping, apply a second layer, half-lapped and spiraled as the first layer with spirals perpendicular to first wrapping. In lieu of tape wrap, heat shrinkable 10-mil minimum thick polyethylene sleeve may be used.

B. When applying tape, use only enough pull to cause the tape to properly conform to the irregular surfaces of the item. The proper amount of pull is reached when the tape surface is smooth without any wrinkles. Continue tape 4" above grade. End overlaps should point down. Tape shall be applied per manufacturer's installation instructions.

2.4 GENERAL EQUIPMENT INSTALLATION REQUIREMENTS

A. Install equipment to provide neat appearance, required manufacturer's access, and required space to allow replacement or maintenance. Provide bases, supports, anchor bolts, and other items required to install equipment. Installation shall be level and braced per CBC.

2.5 COORDINATION OF WORK

A. Coordinate Work of this Section with Work of other Sections to avoid conflicts. If required, provide shop drawings and submit to Architect for approval.

B. Insure that Work of other Sections is suitable to accommodate Work of this Section.

2.6 ADEQUACY OF FURRING

A. Conceal piping and ductwork in spaces provided unless specifically shown otherwise. If spaces are inadequate, notify Architect prior to ordering materials and fabrication of components.

2.7 PROTECTION AND CLEANING

A. Protect equipment from dirt, moisture, and mechanical damage during construction. Restore or replace damaged equipment to original condition.

B. Keep interior of piping free of foreign material during construction. Flush piping systems with test medium specified under Piping Tests before installing equipment and appurtenances or making final connections.

2.8 CLOSING-IN OF UNINSPECTED WORK

A. Do not conceal or cover Work before tests and observations are completed. Uncover Work prematurely closed in and repair resulting damage to all Work, if requested by Architect, Engineer, or Project Inspector.

2.9 DAMAGE

A. Repair or replace items damaged by leaks or overflow from Work provided under this Section and for any damage to any part of the project site, for a period of 1 year after notice of completion date. This is in addition to and not a limitation of other rights the Owner may have against the contractor under the Contract Documents.

2.10 MECHANICAL SYSTEM TESTING

A. Furnish all test pumps, gauges, and equipment. Test all safety controls and devices.

B. For air tests, install a calibrated test pressure gauge in the piping system to observe any loss in pressure. Calibrate the test pressure gauge with a dead weight tester within 15 days before use and certify by initial and date on a sticker applied to the dial face. Maintain the required test pressure for the time indicated. Brush joints with a soapy water solution to check for leaks if the required pressure cannot be maintained.

C. After any test, repair all leaks found as directed and re-test as necessary until the system is proven tight.

D. Before applying test pressure to any piping systems the Contractor shall be responsible for isolating all equipment e.g. control valves, regulators, relief devices, tanks and any other line accessories, which would otherwise be damaged by the test pressure.

1. Soil, Waste, Vent:

a. Entire System: Tightly close all openings except the highest one. Fill to overflowing with water.

b. Sections of System: Tightly close all openings except the highest opening of the section under test. Fill section with water to test each section with a minimum 10-foot head of water except for the uppermost 10 feet of the system.

c. Allow to stand for (4) hours or longer, as required to complete the inspection.

2. Domestic Water: Fill with water and test at 150 psig. Retain for (4) hours.

2.11 CUTTING AND PATCHING

A. The Contractor shall do all cutting and patching which may be required for the installation of the Work under this Division of the Specifications. Patching shall be of the same quality, materials and finish as, and shall match accurately, all surrounding construction. No cutting of the Structure shall be permitted without the approval of the Architect.

B. Wherever concrete or paved surfaces are cut to provide for the installation under this Section, the Contractor shall restore the surfaces to their original condition. Subgrade materials, concrete, and paving materials, along with the placement of same, shall be in accordance with the respective Sections of this Specification as they apply to the installation of such material.

2.12 EXCAVATION AND BACKFILL: (Buried pipes within the building walls and to 5 feet from the building.)

A. Dig trenches straight and true to line and grade; bottom shall be left smoothed of rock points. Pipe shall be supported for the entire length on undisturbed, original earth. The minimum trench width shall be 16" and all pipe shall be 2 feet below the finished grade, minimum, wherever conditions permit. Sewer pipes to be below grade a s necessary to meet the slope and invert on the Drawing. Whenever substantial variations of pipe bury is indicated by field conditions, the proposed changes in depth of bury shall be submitted, in writing, to the Architect for approval.

B. All piping shall be laid on a bed of clean dry sand not less than 6" thick. The space between the pipe and the sides of the trench shall be backfilled with clean dry sand to a point 6" above the crown of the pipe. Both sides of the pipe shall be filled at the same time.

C. Installation of Thermoplastic Pipe and Fittings: Trench width for thermoplastic sewer pipe shall be 1.25 times the outside diameter of the piping plus 12 inches or the outside diameter of the piping plus 16 inches. Thermoplastic piping shall be bedded in not less than 4 inches of granular fill supporting the piping. The backfill for thermoplastic piping shall be compacted along the sides of the piping in 6 inch layers and continue to not less than 12 inches above the piping. Compaction shall be not less than a 85 percent standard proctor density.

D. The remainder of the trench shall be backfilled with native soil in lifts no greater than 12" and shall be mechanically compacted by tamping so to maintain a minimum relative dry density of 95%, determined by California Impact Test Method No. 216.

E. All backfilling shall be brought flush with finished subgrade.

F. Excess material shall be removed from the site. Trenches shall be backfilled immediately after approval.

2.13 INSTALLATION OF PIPING,

A. The installation of piping shall be made in such a manner to clear beams and obstructions. Do not cut into or reduce the size of plates or any load carrying members without approval of the Architect. Check Drawings and Work of others to prevent interference. Deviations of the Work determined by the Architect shall be installed by the Contractor without additional cost.

B. Install piping promptly, cap or plug open ends of pipe. No piping shall be permanently covered by construction before inspection and approval. Piping and ductwork shall be installed in accordance with best practice and recommendations of the manufacturer.

C. Conceal piping unless indicated otherwise. Inspect each piece of pipe, tubing, fittings, and equipment for defects and obstructions. Remove defective material from site. Install piping generally level, free of traps and unnecessary bends to conform with building requirements, and provide space for other work. Piping to be free of unusual noises. Avoid any possible galvanic action by isolating dissimilar metals with suitable Dielectric Insulating Fittings.

D. Unless called for otherwise, hereinafter in this Specification or by specific detail on the Drawings, all water pipes in contact with structure and/or hangers shall be suitably isolated. In the case of uninsulated pipe, "Trisolators" or equal shall be used.

E. Protect enameled or polished equipment from damage, tool marks, etc.

2.14 STERILIZATION OF PIPES

A. After preliminary purging of the Systems, the entire domestic potable water system pertaining to Work under this Contract shall be chlorinated in accordance with American Water Works Association, State of California Health and Safety Code procedure for disinfecting water mains. A thorough flushing operation shall be run upon completion of sterilization. Contractor shall then arrange with local health authority for test on mains and water systems and provide three (3) copies of test results to the Architect.

2.15 SEISMIC BRACING

A. It shall be required that pipes, ducts and conduits be supported and braced per the SMACNA "Seismic Restraints Manual Guidelines for Mechanical Systems", 1998 Edition.

B. When the SMACNA "Seismic Restraint Manual Guidelines for Mechanical Systems" does not specifically address the size of duct or pipe to be braced, the following shall apply:

1. All ducts shall be braced and guyed to prevent lateral or horizontal swing to the satisfaction of the Architect, Engineer, and State Inspector.

2. All pipes shall be braced and guyed to prevent lateral or horizontal swing to the satisfaction of the Architect, Engineer, and State Inspector. Absolutely, no "Plumber's Tape" shall be used anywhere on this project.

C. The SMACNA Manual can be obtained through SMACNA online. Contractor shall obtain manual prior to the start of any work.

2.16 OPERATION AND INSTRUCTION

A. The Contractor shall furnish competent Technicians to supervise start-up operations of equipment specified by the Architect or Engineer and to instruct Owner's operators. The Contractor shall furnish six complete sets of operating instructions and service manuals to the Architect.

B. Instruction period shall be started after instruction books and service manuals have been submitted to and approved by the Architect and shall be at hours (regular and non-regular) arranged by the Architect.

C. Service manuals shall include oiling, cleaning, and servicing data, compiled in clearly and easily understood form and in a durable binder. Data shall show all serial numbers of every piece of equipment and complete list of replacement parts.

2.17 WARRANTY

A. The contractor shall warranty all of the systems for proper operation installed by the contractor for not less than one calendar year from date of project completion. This completion date shall be set by the Architect or Owner.

END OF SECTION 22 0013

SECTION 26 0500

COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
1. Materials and equipment shall be furnished and installed in support of electrical work described in these plans and specifications including but not limited to, raceways, boxes, enclosures, feeders, branch circuiting, supports, terminal cabinets, sleeves, gutters, panels, transformers, switchgear, lighting fixtures, controls, relays, contactors, in order to complete and make fully functional the systems described.
2. Lighting systems, both interior and exterior as shown on the plans and as specified herein, including controls, occupancy sensors, lumen sensors, photocell controls, lamps, dimmers, racks, dimming ballasts, supports, fasteners, straps, and miscellaneous mounting hardware and support structures for such equipment.
3. Electrical, Telephone and CATV Utility company site work as required by the serving companies. All utility company conduits, raceways, trenching, backfilling, utility vaults, equipment pads and substructures shall meet both the respective utility companies requirements as well as those of the authority having jurisdiction, whichever is more restrictive. In no case shall work be completed and covered without the written approval of the serving utility companies both on and off site.
4. Duct banks and raceways for all power and communications systems as shown and/or required. Duct banks shall include all trenching, racking, conduit, concrete, backfill, boxes, pads, substructures required for a fully developed and useable pathway for cables, conductors, as shown on site, etc.
5. HVAC and plumbing electrical: Conduit, conductors and terminations for all line voltage power, line voltage controls and fusible and/or non-fusible safety disconnect switches for HVAC equipment, including but not limited to air conditioners, furnaces, fans, heat pumps, cooling towers, system pumps, condensing units. Provide protective equipment unless otherwise noted, etc. including protective devices.
6. Plumbing Electrical: Conduit, conductors and terminations for plumbing equipment with power requirements including necessary fusible and/or non-fusible safety disconnect devices. Provide motor starters where required unless provided by mechanical specification.
7. Power and Lighting Distribution: Furnish and install power and lighting distribution systems including but not limited to panels, feeders, transformers, branch circuits, devices, fixtures, disconnect switches, contactors, controls, etc. for a complete working system.

8. Fiber infrastructure including all boxes, raceways, cable tray, , dedicated branch circuits, sleeves and penetrations, etc. as described and as shown in plans, risers, specifications, EIA/TIA standards and/or required for a complete and operating system.
9. Lighting acceptance testing, documentation and completion of required forms as specified in Section 26 5670, LIGHTING ACCEPTANCE TESTING.
10. Allocation of time to adequately train the Owner on the use and operation of all systems installed within the facility or on the property. Minimum two week advance notice shall be coordinated with the Owner and his representatives. Training shall be as outlined in individual system specifications identified to follow.

B. Related Sections Under Other Divisions:
1. Mechanical Wiring: Control circuit wiring, energy management controls and interlocks for mechanical equipment shall be installed by Mechanical Contractor.
2. Painting of electrical equipment where exposed and required by the Architect to be painted as described elsewhere in the specification.
3. Irrigation System: Provide all line voltage (50 volts or above) connections to irrigation system equipment, time clocks and or powered satellite controls. Coordinate locations of this work with the Landscape Contractor.
4. Pole Bases: Contractor shall be responsible to furnish light standard concrete pole bases, rebar, bolt templates and anchor bolt kits for a complete installation. Concrete, rebar, excavation shall be by Contractor in accordance with all parts of this specification.
5. HVAC Control Raceway: Raceways, boxes, and control wiring for thermostats, temperature sensors and control components specified within the mechanical specifications, shall be furnished and installed as required by Division 25 and installed in accordance with the minimum wiring methods allowed for branch circuit wiring in Division 26 (the DDC systems/EMS systems and components are installed in accordance with Division 25).

1.3 SYSTEM DESCRIPTION

A. The electrical plans indicate the general layout and arrangement; the architectural drawings and field conditions shall determine exact locations. Field verify all conditions and modify as required to satisfy design requirements as well as code minimums. Maintain all required working clearances as described in CEC Article 110 as well as other applicable articles.

B. Discrepancies shall be brought immediately to the attention of the Architect for clarification. The Architect shall approve any changes. Prior to rough-in, refer to architectural plans that shall take precedence over electrical plans with respect to locations.

C. Verify all power and communications utility company requirements prior to commencement of utility work. Make proper adjustments to the construction to satisfy the serving utility requirements if they differ from the construction documents. It shall be the Contractor's responsibility to contact each utility company for obtaining finalized utility design drawings and/or approval, and for scheduling inspection of utility infrastructure installations.

D. Charges imposed by the electric and communications utility companies shall be paid by Owner directly to utility companies.

1.4 SUBMITTALS AND SHOP DRAWINGS

A. Before construction, submit in accordance with the General Conditions of this Specification: A complete list of all materials proposed to be furnished and installed under this section.

B. Manufacturers' specifications, catalog cuts and shop drawings as required to demonstrate compliance with the specifications. Identify specific intended use for each component where submittal may be ambiguous. Submit entire bound submittal at one time; partial submittals will not be accepted. At a minimum, submittals will be required for the following:
   1. Utility service/site work equipment including ducts, conduits, fittings, concrete manholes, concrete and fiberglass pull, manhole, boxes, vaults, trench racks, accessories, etc.
   2. Distribution equipment including main switchboards, distribution switchgear, transformers, distribution panels and breakers, motor controls, distribution and branch circuit panels, grounding, transient voltage surge suppressors, etc.
   3. Electrical equipment including disconnects, fuses, raceways, straps and racks, fittings, conductors, boxes, gutters, devices, plates, etc.
   4. Lighting equipment including fixtures, ballasts, lamps, mounting accessories, color charts (where required), etc.
   5. Lighting control equipment including low voltage switching system, dimmer switchbank / accessories, occupancy sensing equipment, time clocks, contactors, photocells, lumen sensors, etc.
   6. Constructability review letter/comments for lighting acceptance testing as required by Section 26 5670, LIGHTING ACCEPTANCE TESTING.
   7. Complete system component submittals and shop drawings for:
      a. City Fiber
      b. Communication Data Cabinet
   8. Conduit including all fittings, etc.
   9. Wiring and cable, terminations, etc.
   10. Fire rating penetration materials, details, etc.

C. The intent of these specifications is to establish a standard of quality for materials and equipment. Therefore, some items are identified by manufacturer or trade name designation. Substitutions shall be subject to the Architect's approval. Samples of the proposed and substitute materials may be required for inspection prior to approval. Costs, if any, for evaluation of substitutions shall be the Contractor's responsibility. The decision of the Architect shall be final. Where the substitution will affect other trades, coordinate all changes with those trades concerned and pay any additional costs incurred by them as a result of this substitution. Approval of substitutions shall not relieve the Contractor from providing an operational system in accordance with all applicable codes and ordinances.

D. SUPPORTING DEVICES
   1. Provide all details of suspension and support for ceiling hung equipment.
   2. Where walls, floor, slabs or supplementary steel work are used for seismic restraint locations, details of acceptable attachment methods for ducts, conduit and pipe must be included and approved before the submittals must include spacing, static loads and seismic loads at all attachment and support points.
   3. Provide seismic details of seismic restraints and anchors; including number, size and locations for each piece of equipment.

1.5 DELIVERY, STORAGE AND HANDLING

A. Storage of equipment for the job is the responsibility of the Electrical Contractor and shall be scheduled for delivery to the site, as the equipment is required. Damage to the equipment delivered to the site or in transport to the job shall be the responsibility of the Electrical Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials shall be new and bear the label of or be listed by a nationally recognized testing laboratory. The quality and suitability of all materials shall conform to the standards and practices of this trade.

B. Supplied materials shall be of a current manufactured product line. Discontinued products are not acceptable. Where products are identified on the contract documents by part number, supply the current product model or series which meets the specification and intended use of the specified component.

2.2 SUPPORTING DEVICES

A. Hangers: Kindorf B-905-2A Channel, H-119-D washer, C105 strap, 3/8” rod with ceiling flange.

B. Concrete Inserts: Kindorf D-255, cast in concrete for support fasteners for loads up to 800 lbs.

C. Pipe Straps: Two-hole galvanized or malleable iron.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Professionalism and appearance of installations shall be in accordance with accepted practices of this trade. Installation methods shall conform to manufacturers' specifications and recommendations. The Contractor shall man the job with qualified journeymen and helpers in this trade for the duration of the job. It is the Contractor's responsibility to communicate with and keep the job superintendent appraised of changes or clarifications, etc.

B. Employment of any person on any job in the capacity of an electrician is not permitted unless such person has qualified for and holds a valid Journeyman Electrician Pocket Card or General Journeyman Electrician Certificate issued by the State of California Division of Apprenticeship Standards except, Contractor may employ electrical helpers or apprentices on any job of electrical construction, new or existing, when the work of such helpers or apprentices is performed under the direct and constant personal supervision of a journeyman electrician

holding a valid Pocket Card accepted by the State of California Division of Apprenticeship Standards.

1. Each Pocket Card carrying journeyman electrician will be permitted to be responsible for the quality of workmanship for a maximum of one helper or apprentice during any same time period, provided the nature of work is such that good supervision can be maintained and the quality of workmanship is the best, as expected by Owner and implied by the latest edition of the National Electrical Code.
2. Before each journeyman electrician commences work, deliver to Owner at the project site, a photocopy of the journeyman's valid Pocket Card.

C. Materials shall be installed in accordance with the manufacturers' specification and recommendations. They must conform to the approval AHJ adopted codes and standards, but not less than the 2013 CEC and all applicable codes and standards, including but not necessarily limited to California Code of Regulations Title 24, NFPA, National Electrical Manufacturers Association, ANSI, CBC, and any other adopted ordinances of applicable agencies having jurisdiction. Refer to general conditions of specifications.

D. Electrical Contractor shall lay work out in advance in order to avoid unnecessary cutting, chasing, and drilling of floors, walls, ceilings and other surfaces. Work of this nature shall be carefully done so as not to damage work already performed by other trades. Any damage which results must be properly repaired at no extra cost to the Owner. Such alterations shall not depreciate the integrity of the structure. Approval for cuts or penetrations in structural members shall be by the Architect.

E. Supporting Devices:
1. Verify mounting height of all luminaires or items prior to installation when heights are not detailed.
2. Install vertical support members for equipment and luminaires, straight and parallel to building walls. Provide independent supports to structural member for electrical luminaires, materials, or equipment installed in or on ceiling, walls or in void spaces or over furred or suspended ceilings.
3. Do not use other trade's fastening devices as supporting means for electrical equipment, materials or luminaires. Do not use supports or fastening devices to support other than one particular item.
4. Support conduits within 18" of outlets, boxes, panels, cabinets and deflections. Maximum distance between supports not to exceed 8' spacing.
5. Securely suspend all junction boxes, pull boxes or other conduit terminating housings located above suspended ceiling from the floor above or roof structure to prevent sagging and swaying.
6. Provide seismic bracing per UBC requirements for this building location.

F. Coordinate work with other trades as required to eliminate any delays during construction. Coordinate changes with other prime contractors to avoid construction conflicts.

G. Engineer's Field Observation: Site visits during construction for field observations and reports will be conducted by electrical engineer when directed by the Architect. A list of items that need to be addressed will be submitted to the Architect for forwarding to the Contractor. A written response to all items shall be submitted for Owner's review once complete. When Electrical Engineering representative performs a field observation, the Electrical Contractor shall be present and available to remove equipment covers as needed.

H. Drawings of Record: Provide a full and accurate set of field record drawings marked up in a neat and understandable manner submitted to the Owner Representative, Construction Manager, or Architect upon completion of the work and prior to issuance of a certificate of completion. The drawings shall dimension all electrical facilities including but not limited to underground conduit, vaults, boxes as well as conduit routing scaled to within 12" of actual field conditions and shall be kept up to date on a daily basis reflecting changes or deviations. Electrical facilities shall be accurately drawn on the plan to scale. Refer to the general conditions of these specifications for additional requirements. Record drawings shall be required to identify both horizontal and vertical dimensions to visible and fixed points such as concrete, asphalt, buildings, sidewalks, etc.

I. Identification: Provide engraved laminated plastic nameplates for all switchboards, panelboards, fire alarm terminal cabinets, telephone and cable television backboards, main devices, control panels, time clocks, contactors and safety disconnect switches accurately identifying each device. Labels shall be attached to the equipment by means of screws or rivets. Self-adhering labels will not be acceptable. Refer to Section 26 0553, IDENTIFICATION OF ELECTRICAL SYSTEMS.

J. Safety: The Electrical Contractor is responsible to maintain equipment in a safe and responsible manner. Keep dead front equipment in place while equipment is energized. Conduct construction operations in a safe manner for employees as well as other work persons or anyone visiting the job site. Provide barriers, trench plates, flags, tape, etc. The Contractor shall hold all parties harmless of negligent safety practices that may cause injury to others on or near the job site.

K. Guarantees: Equipment and labor shall be guaranteed and warranted free of defects, unless otherwise stated to be more restrictive, for a period of one year from the date of final acceptance by the Owner. A written warranty shall be presented to the Architect at the time of completion prior to final acceptance. Equipment deemed to be damaged, broken or failed should be repaired or replaced at no additional cost to the Owner. Materials or system requiring longer than a one-year warranty as described herein shall be separately warranted in separate letters of guarantee stating the duration of warranty.

L. Operating and Installation Manuals: Provide two copies each of manuals, operating and installation instructions for equipment indicated in submittal packages. Instruct the Owner's representative as to the operation and location of equipment necessary to allow them to operate the facility upon final acceptance. This instruction period shall be prearranged with the Owner's representative prior to occupancy of the facility and the weeks prior to training scheduled.

M. Lighting Acceptance Testing: Provide two copies of lighting acceptance testing results and equipment operating manuals as specified in Section 26 5670, LIGHTING ACCEPTANCE TESTING. Instruct the Owner on operation of control systems.

END OF SECTION

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SECTION 26 0519

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Wires and cables.
2. Connectors.
3. Lugs and pads.
4. MC cable (not allowed)

1.3 SYSTEM DESCRIPTION

A. Provide wires, cables, connectors, lugs, strain reliefs, racking insulators for a complete and operational electrical system.

1.4 SUBMITTALS

A. Provide product data for the following equipment:
1. Wires.
2. Cables.
3. Connectors.
4. Lugs.
5. Splice Kits.
6. Strain Relief Fittings.
7. Cable Racking and Insulators.

B. Provide the insulation cable testing report in the project closeout documentation, refer to Closeout Requirements in the General Conditions portion of this specification.

1.5 REGULATORY REQUIREMENTS

A. Conform to requirements of the CEC, latest adopted version with amendments by local Authority Having Jurisdiction (AHJ).

B. Furnish products listed by UL or other testing firm acceptable to AHJ.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Wires and Cables: General Cable, Okonite, Southwire, or approved equal.

B. Connectors: Burndy, Ilsco, Thomas & Betts, or approved equal.

C. Wire connectors shall be minimum 75 degree centigrade rated and properly sized for the number of conductors being connected, terminated, spliced etc. All above grade connectors shall be solderless lug or plastic wire nut type, screw on, pressure cable type (wire nut or spring nut type), 600 volt, 105 degree C, with skirt to cover all portions of stripped wires. Connector shall be U.L. rated for number and size of conductors being joined together as a splice.

D. Splices:
1. Branch Circuit Splices: Ideal, Scotch-Lock, 3M, or approved.
2. Feeder Splices: Compression barrel splice with two layers Scotch 23 and four layers of Scotch 33+ as vapor barrier.
3. Screw Terminal Lugs.
4. Kearney Split Bolt.

E. MC Cable: Alflex, AFC, or approved and shall meet all CEC Article 334 provisions.

2.2 WIRES AND CABLES FOR LINE VOLTAGE SYSTEM AND CONTROLS. WIRE AND CABLE SHALL BE:

A. Copper, 600 volt rated throughout. Conductors 14AWG to 10AWG, solid or stranded. Conductors 8AWG and larger, stranded.

B. Phase color to be consistent at all feeder terminations; A-B, top to bottom, left to right, front to back. Phasing tape shall be permitted on sizes #6 and larger.

C. Color Code Conductors as Follows:

PHASE	240 VOLT
A	Black
B.	Red
Neutral	White
Ground	Green

D. All conductors shall be copper unless otherwise noted. Minimum size for individual conductors shall be #12 AWG unless otherwise noted. Sizes #8 AWG and larger shall be stranded conductor. Individual conductors shall be insulated with type, XHHW, THW, THHN/THWN 600-volt insulation unless otherwise noted. Control, signal, communication conductors shall be as dictated by the vendor of that equipment or as specified here-in. Proper insulation type shall be used for the proper environmental application (i.e., waterproof, wet location, plenum, temperature rated). If a condition exists where the application is uncertain, contact the Engineer for direction. Contractor is responsible to follow specific cabling requirements described in other sections of this specification relative to various communications and controls systems as

well as the respective riser diagrams shown on plans. If a discrepancy occurs, communicate such discrepancy to the Architect and Engineer immediately for resolution.

E. Insulation types THWN, THHN or XHHW. Minimum insulation rating of 90C for branch circuits.

F. Refer to signal and communications specification sections for cable requirements.

2.3 CONNECTORS

A. Copper Pads: Drilled and tapped for multiple conductor terminals.

B. Lugs: Indent/compression type for use with stranded branch circuit or control conductors.

C. Solid Conductor Branch Circuits: Spring connectors, wire nuts, for conductors 18 through 8AWG.

2.4 LUGS AND PADS

A. Ampacity: Cross-sectional area of pad for multiple conductor terminations to match ampere rating of panelboard bus or equipment line terminals.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Installation: Conductors shall not be installed until after conduit systems are permanently in place. Use an approved non hardening type wire pulling lubricant if lubricant is to be used. Maintain all conduits and wire pulls free from foreign material. If due to field conditions, more than a total of 300 degrees of bend are required; a pull box shall be furnished and installed for ease of installation. Said pull boxes must be sized and rated for the appropriate application and must remain easily accessible upon completion of the project (approval of the location shall be obtained from the Architect prior to installation). Show these pullboxes on the field record drawings. Conductors installed in underground raceways on site shall be duct sealed and taped where they exit the raceway to prevent the entrance of foreign material and moisture after the conductors are installed. Proper drainage shall be provided for underground pull and splice boxes.

B. Insulation: Use proper insulation types where temperature and environment are a factor.

C. Splices at or below grade level shall be made with wet location rated and approved mechanical connectors and shall be encapsulated in epoxy or plastic molded poured kits. The connections must be assured to be watertight. Splices at or below grade shall always be avoided and minimized. Prior approval is required for feeder splices below grade. Submit proposed materials and exhibit showing location of intended splices for Engineer's review and approval prior to commencing with the work.

D. Labeling: All conductors in panels, switchboards, terminal cabinets, vaults, pull boxes, and junction boxes shall be labeled with tape number markers indicating circuit number and identifying system. All labeling shall be permanent. In manholes and vaults, provide embossed brass tags identifying system serviced and function. See Section 26 0553 IDENTIFICATION OF ELECTRICAL SYSTEMS.

E. All conductors, wiring, cable where installed below floor, slab or underground shall be considered wet locations, and shall be rated accordingly. Non waterproof cabling is not allowed in any below grade or wet application.

F. Cables routed together in cable tray shall be stacked, organized and tie wrapped together in a neat and workman like manner. Random cable routing is not acceptable.

G. Cable and conductors routed through pull boxes and vaults shall be properly supported on porcelain or equal insulators mounted on steel rack inserts. Bend radius of cable or conductor shall not be less than six times the overall cable diameter.

H. Wires and Cables:
1. Conductor Installation:
   a. Install conductors in raceways having adequate, code size cross-sectional area for wires indicated.
   b. Install conductors with care to avoid damage to insulation.
   c. Do not apply greater tension on conductors than recommended by manufacturer during installation.
   d. Use of pulling compounds is permitted. Clean residue from exposed conductors and raceway entrances after conductor installation.
2. Conductor Size and Quantity:
   a. Install no conductors smaller than 12AWG unless otherwise shown.
   b. Provide all required conductors for a fully operable system.
3. Provide dedicated neutrals (one neutral conductor for each phase conductor) in the following single phase circuits:
   a. Dimmer controlled circuits.
   b. 120v circuit
   c. Ground fault and arc fault protected circuits where a GFI and arc fault breakers are used in panelboards.
4. Conductors in Cabinets:
   a. Cable and train all wires in panels and cabinets for power and control neatly and uniformly. Use plastic ties in panels and cabinets.
   b. Tie and bundle feeder conductors in wireways of panelboards.
   c. Hold conductors away from sharp metal edges.
   d. Connectors: Retighten mechanical type lugs and connectors for conductors to equipment prior to Notice of Completion.

3.2 FIELD QUALITY CONTROL

A. Tests:
1. Test conductor insulation on feeders of 400 amp and greater for conformity with 1000 volt megohmmeter. Use Insulated Cable Engineers Association testing procedures. Minimum insulation resistance acceptable is 1 megohm for systems 600 volts and below.

2. Test Report: Prepare a typed tabular report indicating the testing instrument, the feeder tested, amperage rating of the feeder, insulation type, voltage, the approximate length of the feeder, conduit type, and the measured resistance of the megohmmeter test. Submit report with operating and maintenance manual.

END OF SECTION

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SECTION 26 0526

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
   1. Grounding and bonding requirements of electrical installations for personnel safety and to provide a low impedance path for possible ground fault currents as described in CEC Article 250.
   2. "Grounding electrode system" refers to all electrodes required by CEC, as well as including made, supplementary, lightning protection system and telecommunications system grounding electrodes.
   3. The terms "connect" and "bond" are used interchangeably in this specification and have the same meaning.

B. Related Work:
   1. Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.
   2. Section 26 0519, LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES.

PART 2 - PRODUCTS

2.1 GROUNDING AND BONDING CONDUCTORS

A. Equipment grounding conductors shall be UL 83 insulated stranded copper, except that sizes No. 10 AWG and smaller shall be solid copper. Insulation color shall be continuous green for all equipment grounding conductors, except that wire sizes No. 4 AWG and larger shall be permitted to be identified per CEC.

B. Bonding conductors shall be ASTM B8 bare stranded copper, except that sizes No. 10 AWG and smaller shall be ASTM B1 solid bare copper wire.

C. Conductor sizes shall not be less than what is shown on the drawings and not less than required by the CEC, whichever is greater.

2.2 GROUND RODS

A. Copperclad steel, 5/8" diameter by 8’ long, conforming to UL 467 unless otherwise noted on drawings and details.

B. Quantity of rods shall be as required to obtain the specified ground resistance or additional rods shall be driven to obtain specified resistance or less.

2.3 SPLICES AND TERMINATION COMPONENTS

A. Components shall meet or exceed UL 467 and be clearly marked with the manufacturer, catalog number, and permitted conductor size(s).

PART 3 - EXECUTION

3.1 GENERAL

A. Ground in accordance with the CEC, as shown on drawings, and as hereinafter specified.

B. System Grounding:
1. Secondary service neutrals: Ground at the supply side of the secondary disconnecting means and at the related transformers.
2. Separately derived systems (transformers downstream from the service entrance): Ground the secondary neutral.

C. Equipment Grounding: Metallic structures (including ductwork and building steel), enclosures, fire sprinklers, plumbing piping, raceways, junction boxes, outlet boxes, cabinets, machine frames, and other conductive items in close proximity with electrical circuits shall be bonded and grounded.

3.2 INACCESSIBLE GROUNDING CONNECTIONS

A. Make grounding connections which are buried or otherwise normally inaccessible (except connections for which periodic testing access is required) by exothermic weld.

3.3 SECONDARY EQUIPMENT AND CIRCUITS

A. Main Bonding Jumper: Bond the secondary service neutral to the ground bus in the service equipment.

B. Metallic Piping, Building Steel, and Supplemental Electrode(s):
1. Provide a grounding electrode conductor sized per CEC between the service equipment ground bus and all metallic water and gas pipe systems, building steel, and supplemental or made electrodes. Jumper insulating joints in the metallic piping. All connections to electrodes shall be made with fittings that conform to UL 467.
2. Provide a supplemental ground electrode and bond to the grounding electrode system.

C. Service Disconnect: Provide a ground bar bolted to the enclosure with lugs for connecting the various grounding conductors.

D. Switchgear, Switchboards, Unit Substations, and Motor Control Centers:
1. Connect the various feeder equipment grounding conductors to the ground bus in the enclosure with suitable pressure connectors.
2. For service entrance equipment, connect the grounding electrode conductor to the ground bus.
3. Connect metallic conduits, which terminate without mechanical connection to the housing, by grounding bushings and grounding conductor to the equipment ground bus.

E. Transformers:
1. Exterior: Exterior transformers supplying interior service equipment shall have the neutral grounded at the transformer secondary. Provide a grounding electrode at the transformer.
2. Separately derived systems (transformers downstream from service equipment): Ground the secondary neutral at the transformer. Provide a grounding electrode conductor from the transformer to nearest component of the grounding electrode system and the ground bar at the service equipment.

F. Conduit Systems:
1. Ground all metallic conduit systems. All metallic conduit systems shall contain an equipment grounding conductor sized per CEC.
2. Non metallic conduit systems shall contain an equipment grounding conductor, except that non-metallic feeder conduits which carry a grounded conductor from exterior transformers to interior or building-mounted service entrance equipment need not contain an equipment grounding conductor.
3. Metal conduit containing only a grounding conductor, and which is provided for mechanical protection of the conductor, shall be bonded to that conductor at the entrance and exit from the conduit.

G. Feeders and Branch Circuits: Install equipment grounding conductors with all feeders, power and lighting branch circuits.

H. Boxes, Cabinets, Enclosures, and Panelboards:
1. Bond the equipment grounding conductor to each pullbox, junction box, outlet box, device box, cabinets, and other enclosures through which the conductor passes.
2. Provide lugs in each box and enclosure for equipment grounding conductor termination.
3. Provide ground bars in panelboards, bolted to the housing, with sufficient lugs to terminate the equipment grounding conductors.

I. Motors and Starters: Provide lugs in motor terminal box and starter housing or motor control center compartment to terminate equipment grounding conductors.

J. Receptacles shall not be grounded through their mounting screws. Ground with a jumper from the receptacle green ground terminal to the device box ground screw and the branch circuit equipment grounding conductor.

K. Ground lighting fixtures to the equipment grounding conductor of the wiring system when the green ground is provided; otherwise, ground the fixtures through the conduit systems. Fixtures

connected with flexible conduit shall have a green ground wire included with the power wires from the fixture through the flexible conduit to the first outlet box.

L. Fixed electrical appliances and equipment shall be provided with a ground lug for termination of the equipment grounding conductor.

M. Raised Floors: Provide bonding of all raised floor components.

N. Panelboard Bonding: The equipment grounding terminal buses of the normal and emergency branch circuit panelboards shall be bonded together with an insulated continuous copper conductor not less than No. 8 AWG where panels are in same room together or within 25' of each other. These conductors shall be installed in rigid metal conduit.

3.4 CONDUCTIVE PIPING

A. Bond all conductive piping systems, interior and exterior, to the building to the grounding electrode system. Bonding connections shall be made as close as practical to the equipment ground bus.

3.5 TELECOMMUNICATIONS SYSTEM

A. Bond telecommunications system grounding equipment to the electrical grounding electrode system. Refer to City of SLO Cabling Standards

3.6 GROUND RESISTANCE

A. Grounding system resistance to ground shall not exceed 25 ohms. Make necessary modifications or additions to the grounding electrode system for compliance without additional cost to the Owner. Final tests shall assure that this requirement is met and test results shall be submitted to the Owner with final close out documents.

B. Resistance of the grounding electrode system shall be measured using a four-terminal fall-of-potential method as defined in IEEE Standard 81. Ground resistance measurements shall be made before the electrical distribution system is energized and shall be made in normally dry conditions not less than 48 hours after the last rainfall. Resistance measurements of separate grounding electrode systems shall be made before the systems are bonded together below grade. The combined resistance of separate systems may be used to meet the required resistance, but the specified number of electrodes must still be provided.

C. Services at Pacific Gas and Electric Company interface point shall comply with their ground resistance requirements.

D. Below-grade connections shall be visually inspected by the IOR prior to backfilling. The Contractor shall notify the IOR 24 hours before the connections are ready for inspection.

E. Furnish a copy of tests to Owner at completion of project.

3.7 GROUND ROD INSTALLATION

A. Drive each rod vertically in the earth, not less than 7 1/2’ in depth.

B. Where permanently concealed ground connections are required, make the connections by the exothermic process to form solid metal joints. Make accessible ground connections with mechanical pressure type ground connectors.

C. Where rock prevents the driving of vertical ground rods, install angled ground rods or grounding electrodes in horizontal trenches to achieve the specified resistance.

END OF SECTION

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SECTION 26 0533

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Conduit and fittings.
2. Outlet boxes.
3. Weatherproof outlet boxes.
4. Junction and pull boxes.
5. Cabinets, termination cabinets.
6. Gutters.
7. Concrete boxes and vaults.
8. Fiberglass or composite boxes and vaults.
9. Hazardous Location: Sealing Fitting

B. Related Work:
1. Installation of all wire, cable, conductor, boxes/gutters, pull ropes, fiber optic cable raceway, conduit, innerduct, cable sleeve and duct as described on the plans and/or as specified here-in. This scope shall include pathways to be installed underground on site and offsite, underslab, above grade, both concealed and exposed, overhead concealed and exposed as appropriately applied. Raceways/boxes shall be installed in accordance with their intended and allowed uses and as specified here-in whichever is more restrictive. Size and capacity of all raceway/boxes shall be as specified here-in or as depicted on the drawings, but shall not be less than that required by code. Larger raceway sizes may be specified than code would permit. The specifications shall govern.
2. Listed products for termination, coupling, extending, benching supports of raceways shall be used.
3. Raceways/boxes described by this section shall include, but not be limited to, power for site utilities and lighting, site and building communications, controls, fire alarm, security, access control, sound systems, data system, energy management systems, power distribution, lighting, lighting controls, video, CATV, voice communications, intercom, nurse call, HVAC and other building low voltage/communications systems controls as may be required. Raceways, boxes and duct paths required for utility companies shall be installed per plans unless utility company requirements are more restrictive at which time those requirements shall take precedence.
4. Protection of and cleanliness of pathways and raceways must be assured during the construction process in order to eliminate the possibility of debris entering the conduit,

duct, pathway resulting in decreased wire capacity and potential damage to installed conductors and cables.

5. Pathways are shown in a diagrammatic way and are generally accurate as to routing, however, it is the Contractor's responsibility as a means and methods process to coordinate with all other trades that require space within a building. The Contractor shall obtain approval for installation of raceways routing through structural footings, retaining walls, columns, beams, perlins, grade beams, etc.
6. It is the Contractor's responsibility to insure that all raceway and boxes systems penetrate fire assemblies and sound rated assemblies in an approved manner using the appropriate and listed products for the purpose.
7. Trenching and backfilling for all underground conduit systems installed by the Electrical Contractor shall be the responsibility of the Contractor. Conduits shall have minimum cover requirement of 36" below finish grade with the exception of site lighting conduits which may be 24" below finish grade minimum. More stringent depth requirements may be imposed by the local agency and utility company and shall be adhered to, and / or this specification or as detailed on the plans. Joint trenching may be utilized where practicable and where permitted by this specification. Concrete, native material and sand shall be used as backfill material and shall be compacted in accordance with and coordinated with the grading and site preparation requirements. Conduits shall rest in a minimum of 4" bed of sand prior to backfill and compaction. Locations of existing underground (UG) utility systems shall be determined by calling Underground Service Alert (USA) at least 48 hours prior to any excavation. Also refer to Section 26 0546.13, ELECTRIC UTILITY SYSTEMS.
8. Minimum conduit size shall be 1/2" except if plan shows or code requires larger size. Exception: Use minimum 3/4" for underslab and below grade applications outside of building exterior walls.
9. All electrical, control, communications systems shall be installed in metallic conduit system. This shall include but not be limited to all systems described in Section B.3 above, except for voice and data systems which shall be installed as described on these plans and as specified here-in but shall not be less than the recommendations of EIA/TIA standards.
10. All line voltage wiring within the building shall be installed in metallic conduit.
11. All conduit, concrete pads, underground concrete or fiberglass substructures shall be furnished and installed with the approved materials and type for the application. Provide proper traffic control during construction as well as barriers and protection of all excavations and trenching.
12. Empty or future conduits shall be properly plugged with plastic caps or inserts with a 3/8" polyethylene pull rope. Plastic or "duct" tape will not be acceptable.
13. Exterior installations: After conductors are installed, seal conduit ends to prevent entrance of foreign material using pliable duct seal, caps or waterproof expanding foam.
14. All low voltage systems including intercom, fire alarm, public address, etc. shall be in dedicated conduit systems and as recommended by EIA/TIA standards. It shall be the contractor's responsibility to provide raceway down walls to outlet boxes and to provide sleeves across inaccessible ceiling spaces.
15. Underground conduits entering building shall have the open end of conduit within building above the elevation of the conduit outside the building such that water cannot enter building through conduit. If such a condition exists, a pull box outside of building footprint shall be installed in conduit route before conduit enters building whereby top of pull box is below finish floor of building and moisture may exit box before entering building.

16. No single conduit run of any type shall exceed 300 degrees of radius bend from termination box to termination box.
17. Separate Raceway System: Provide a separate dedicated raceway system for each system installed, do not combine different systems into a raceway or cable tray system, unless otherwise noted or allowed.
18. Spare, Future Conduits: Conduits labeled conduit only, spare, or for future use, shall be provided with a pullrope, capped at each end, labeled as spare with destination marked, and turned over to the Owner in an unused state. Contractor shall not utilize these conduits for the installation of cabling or conductors as part of this scope of work. Contractor to verify and install at no additional cost to the Owner, additional conduits as required for the installation of the systems being installed.
19. Outlet System: Provide electrical boxes and fittings as required for a complete installation. Including but not limited to outlet boxes, junction boxes, pull boxes, bushings, locknuts, covers and all other necessary components.
20. Code Compliance: Comply with CEC as applicable to construction and installation of electrical boxes and fittings and size boxes according to CEC 312, 314 and 366 except as noted otherwise.
21. Outlets to be flush mounted: Maintain integrity of insulation and vapor barrier. Unless otherwise noted, flush mount all outlet boxes.
22. Provide putty pads of proper type around outlet boxes and/or as detailed on plan to meet sound transmission restrictions and fire ratings of walls.

1.3 SUBMITTALS

A. Provide Shop Drawings and Product Data for the Following Equipment:
1. Conduit and fittings.
2. Outlet boxes.
3. Weatherproof outlet boxes.
4. Junction and pull boxes.
5. Cabinets, termination cabinets.
6. Gutters.
7. Concrete boxes and vaults.
8. Paver vaults boxes and vaults
9. Putty pads.
10. Raceways

1.4 REGULATORY REQUIREMENTS

A. Conform to requirements of the CEC, latest adopted version with amendments by local AHJs.

B. Furnish products listed by UL or other independent and nationally recognized testing firm.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Heavy wall Rigid Non-Metallic Conduit, shall be PVC schedule 40 manufactured in accordance with NEMA Standard TC-2, UL-651 and WC 1094A specifications.

B. Extra heavy wall non-metallic conduit, shall be PVC schedule 80 manufactured in accordance with NEMA Standard TC-2, UL-651 and WC 1094A specifications.

C. Galvanized Rigid Steel (GRS) conduit shall be hot dipped galvanized, zinc coated and shall comply with Underwriters Laboratories UL-6, ANSI Specification C-80.1 and Federal Specification WW-C-581E.

D. Electrical Metallic Tubing (EMT) shall be zinc coated, with a protective coating applied to the inside surface and shall comply with Underwriter Laboratories UL-797 ANSI Specification C-80.3 and Federal Specification WW-C-563A.

E. Flexible Metal Conduit (FMC) shall be continuous wound reduced wall galvanized steel produced to UL standards.

F. Liquid tight flexible metal conduit shall have a thermoplastic cover over a galvanized steel core containing an integral copper ground in sizes to 1 1/4" and shall be in compliance with UL standards and CEC Article 350.

G. Manufacturers:
1. Outlet Boxes: Bowers, Raco, Steel City or equal.
2. Weatherproof Outlet Boxes: Bell, Red Dot, [Carlon] or equal.
3. Floor Boxes: Wiremold/Walker, Hubbell, Steel City, or equal.
4. Junction and Pull Boxes: Circle AW, Hoffman, Wireguard or equal.
5. Box Extension Adapter: Bell, Red Dot, [Carlon] or equal.
6. Conduit Fittings: O-Z Gedney, Thomas & Betts, or equal.
7. Vaults: Christy, Brooks, Utility Vault or equal.
8. Putty pads: 3M, Hilti, or equal.
9. Heavy wall rigid non-metallic conduit, Carlon, Certainteed, R&G Sloane or equal.
10. Extra heavy wall non-metallic conduit, Carlon, Certainteed, R&G Sloane or equal.
11. Galvanized Rigid Steel (GRS) conduit shall be hot dipped galvanized, zinc coated and shall comply with Underwriters Laboratories UL-6, ANSI Specification C-80.1 and Federal Specification WW-C-581E.
12. Electrical Metallic Tubing (EMT) shall be zinc coated, with a protective coating applied to the inside surface and shall comply with Underwriter Laboratories UL-797 ANSI Specification C-80.3 and Federal Specification WW-C-563A.
13. Flexible Metal Conduit (FMC), Alflex, American Flexible Conduit or equal.
14. Liquid tight flexible metal conduit, Anacanda (type UA), Electri-flex Liquatite or equal.
15. Surface mount raceway, Wiremold, Three Compartment Series 5500 or equal
16. Masonry Boxes, outlets in concrete, Raco Series 690 or equal.
17. Exterior In-Grade Boxes for Non-Utility Company, Precast concrete or polymer concrete, Utility Vault and Christy.

2.2 OUTLET BOXES

A. NEMA 1 gutter, junction and pull boxes shall be fabricated from code gage steel finished in grey enamel with screw cover fronts and concentric knockouts in all sides.

B. NEMA 3R gutter, junction and pull boxes shall be fabricated from code gage galvanized steel with screw cover fronts and concentric knockouts in the bottom only. Any penetrations to the side, top or back shall be weatherproofed in an approved manner such as “MYERS” gasketed type hub or equal.

C. Steel outlet boxes and plaster rings shall be galvanized rigid assemblies, either one piece pressed or factory welded construction containing the size and number of knockouts required. Steel outlet boxes shall be manufactured, sized and installed in accordance with CEC Article 314. Device Outlet: Installation of one or two devices at common location, minimum 4” square, minimum 1 1/2" deep. Single or 2 gang flush device plaster ring. Raco Series 681 and 686 or equal.

D. Luminaire Outlet: minimum 4” square with correct plaster ring depth, minimum 1 1/2” deep with 3/8” luminaire stud if required. Provide proper depth plaster ring on bracket outlets and on ceiling outlets.

E. Multiple Devices: Three or more devices at common location. Install 1 piece gang boxes with 1 piece device plastering. Install one device per gang unless otherwise allowed.

F. Construction: Provide galvanized steel interior outlet wiring boxes, of the type, shape and size, including depth of box, to suit each respective location and installation; constructed with stamped knockouts in back and sides, and with threaded holes with screws for securing box covers or wiring devices. Boxes shall be properly secured to the structure such that they are flush with the finish surface. Boxes shall be made structurally secure by means of the proper fastening devices.

G. Accessories: Provide outlet box accessories as required for each installation, including mounting brackets, wallboard hangers, extension rings, plaster rings, luminaire studs, cable clamps and metal straps for supporting outlet boxes, compatible with outlet boxes being used and meeting requirements of individual wiring situations.

2.3 WEATHERPROOF OUTLET BOXES

A. Cover plates on outlet boxes mounted flush in the wall shall be gasketed to the wall in a watertight manner. Weatherproof boxes in wet locations as described in CEC 406.8 (B) shall be provided with a “while-in-use” cover; red dot ‘CK’ Series of aluminum die-cast construction, NEMA 3R, with lacquer finish.

2.4 JUNCTION AND PULL BOXES

A. Construction: Provide galvanized sheet steel junction and pull boxes, with screw-on covers; of the type shape and size, to suit each respective location and installation; with welded seams and equipped with steel nuts, bolts, screws and washers.

B. Location:
   1. Install junction boxes above accessible ceilings for drops into walls for receptacle outlets from overhead.
   2. Install junction boxes and pull boxes as required to facilitate the installation of conductors and limiting the accumulated angular sum of bends between boxes, cabinets and appliances to 300 degrees.
   3. Locations: Junction boxes shall be located only where necessary and only in equipment rooms, closets, and accessible attic and underfloor spaces. A horizontal distance of 24" shall separate outlet boxes on opposite sides of occupancy separation walls, fire-rated walls or partitions.
   4. Labeling: Junction box covers shall be marked with indelible ink indicated the circuit numbers passing through the box.

2.5 BOX EXTENSION ADAPTER

A. Construction: Diecast aluminum.

B. Location: Install over flush wall outlet boxes to permit flexible raceway extension from flush outlet to fixed or movable equipment.

2.6 CONDUIT FITTINGS

A. Requirements: Provide corrosion-resistant punched-steel box knockout closures, conduit locknuts and plastic conduit bushings of the type and size to suit each respective use and installation.

B. Steel boxes may allow for field knock-out modifications, but shall in all other ways conform to code requirements.

2.7 EXTERIOR IN-GRADE BOXES FOR NON-UTILITY COMPANY USE SHALL BE:

A. Precast concrete or polymer concrete type with full bottoms and draining into gravel drywell. . Open bottom splice/pull boxes 24" x 36" and smaller shall be open bottom, with minimum 12" of gravel below for drainage.

B. Flushmount in hardscape and 1" above grade in softscape.

C. Provided with correct traffic type lid, i.e., full vehicular, intermediate incidental vehicular or pedestrian-rated as applicable stamped with "ELECTRIC", "LIGHTING", COMMUNICATIONS", etc. cover identification as shown on the drawings or as applicable. All boxes or vaults located in streets, driveways, sidewalks wider than 8', and turf areas where mowing takes place shall be traffic rated.

D. Provided with brass hold-down bolts in cover.

E. Provided with necessary box extensions to gain proper depth.

F. Seal all conduits in underground boxes with duct seal after conductors have been installed.

2.8 IN-GRADE UTILITY COMPANY BOXES AND VAULTS

A. In-grade boxes and pads for utility company, shall be as specified by the respective utility company with all of the company's requirements and construction methods met.

2.9 PUTTY PADS

A. Intumescent moldable firestop putty designed to protect electrical outlet boxes.

B. Designed to install around outside of outlet boxes.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Conduit systems listed below are for use in installations where they are permitted to be used by CEC and/or other occupancy restrictions. The below installation methods do not intend to suggest that these materials be installed in conflict with any applicable code. Special attention to applications shall be made in building types such as Educational, Health Care, wet location, hazardous locations, assembly occupancy and multi-story, but not limited to these. Requirements which are more restrictive than the CEC may be called for by the drawings and / or these specifications. These requirements must be adhered to. The Electrical Contractor shall be responsible to use the proper conduit system for the application. Exposed conduit is not allowed below ceilings or above slab of floor, without the permission and approval of the Architect. All conduits shall be concealed except in electrical and telecommunication rooms or where shown to be surface mounted. Exposed conduit (where allowed) shall be run square and plumb with building lines in an approved manner. Support roofmount conduits, where allowed, with minimum 12" wide blocks set in mastic unless otherwise detailed in roof requirements or as specified in roofing specification, by the Architect. Strap conduits to blocks with proper sized conduit straps. Spacing of support shall be a minimum as provided for in the CEC. All exposed conduit mounted below 8' above finished grade shall be strapped at a minimum of 5' spacing.

B. Non-Metallic Rigid Conduit shall be used in concrete slabs, below concrete slabs on grade, or underground outside of a building slab or foundation. Maintain minimum depth requirements and cover with appropriate fill material. Minimum 4" of bedding and cover of backfill material 1/4" size grain and smaller maximum. Conduit shall be heavy wall Schedule 40 or 80, rigid PVC only. Rigid utility P&C duct shall not be used in any application. Properly sized grounding conductors shall be installed per CEC article 250, in all non-metallic conduit branch circuit and feeder runs. PVC conduit shall be formed or field bent only with the use of properly approved bending tools such as to not decrease the internal bore of the conduit. All conduits shall be cut square and reamed of burrs. Approved and compatible glue shall be used on all PVC fittings to attain watertight joints. All non-metallic conduit runs over 150' in length and over 1 1/4" trade size conduit shall utilize galvanized rigid steel elbows.

C. Galvanized Rigid Steel (GRS) conduit shall be used where exposed less than 8'–0" above finished grade to 18" below finished grade and where subject to physical damage. Conduits shall be cut square and reamed to remove burrs and sharp edges. Strap conduit below 8' above

grade at 5' intervals. Unless otherwise noted, threadless setscrew and threadless weathertight fittings may be used in lieu of threaded fittings. All threaded ends entering a junction box of any type shall require one locknut on the inside and one on the outside of the enclosure and be provided with a plastic bushing or grounding bushing where necessary for proper grounding. Where exposed to moisture, a watertight hub or other approved method shall be required. All conduits shall be stubbed up straight and uniform into junction boxes, panels, cabinets, etc., and shall be (GRS) properly supported and strapped. All GRS conduit located below grade, shall be tape wrapped.

D. Electrical Metallic Tubing (EMT) shall be used as allowed by code and as permitted by this specification. It shall not be in contact with soil or the concrete slab on the ground floor of any structure. Connectors and couplings shall be steel insulated set screw type where installed in indoor dry locations not subject to moisture. Where the potential for moisture is present, compression type weathertight fittings are required. One hole conduit straps are permitted from 1/2" to 1" and two hole conduit straps are required for size 1 1/4" and larger. EMT shall not be allowed in areas subject to severe physical damage. Install copper ground wire sized per CEC 250-122 in all EMT conduits.

E. Flexible conduit may be used where concealed in building construction or above dropped ceilings, but shall meet the following criteria: No individual circuit path from distribution panel to last device shall exceed a cumulative length of 30' of flexible conduit from start to end. Flexible conduit shall not exceed a total directional change of 270 bending degrees in any one run between conduit terminations. Squeeze type or Jake type steel flex fittings of a grounding type are required. Flexible conduit must be supported in accordance with CEC. Where exposed to the weather, moisture, or spray down flexible conduit shall be of the liquidtight type. Fittings shall be manufactured for use with liquidtight flexible conduit. All motor connections shall be made with liquidtight flex. Flexible conduit may not be used where exposed except for last 2' of equipment connection and unless otherwise noted or approved. A copper ground wire sized per CEC 250-122 shall be installed in all flexible conduit runs. Flexible conduit may not be used exposed. Weatherproof liquid tight conduit shall not be used at roof level for equipment connections with lengths exceeding 24" nor shall it be used to circumvent a rigid conduit system in a horizontal direction. Connect recessed lighting fixtures to conduit runs with a maximum of 6' of flexible metal conduit extending from junction box to fixture. "Master" "Slave" fixtures are permitted to use manufactured flexible cable of longer dimension up to 12' between "Master" and "Slave" only and only as a U.L. listed system component.

F. Underground conduits and transition to above grade/slab shall be as follows:
1. PVC elbows allowed if top of elbow is minimum 18" BFG or below top of slab, otherwise GRS elbows are required.
2. GRS elbows are required if conduit run is 150' or greater.
3. GRS risers are required from elbow below grade to equipment (device, outlet, panel, cabinet, etc.) above grade.
4. GRS elbows/risers to be PVC coated or 10 MIL taped wrapped (1/2" lapped) to 3" above finish grade or top of slab.

G. Conduit Supports: Conduit runs may be supported by one-hole and two-hole straps or supports as manufactured by Unistrut, Minerallac, Caddy or equals. Supports may be fastened by means of anchors, shields, beam clamps, toggle bolts, or other approved methods appropriate for the application and size of conduit. Pipe nailers (J-hooks) may only be used for 1" conduit and smaller and only in wood frame construction. Conduit support methods are subject to review by

the engineer and authority having jurisdiction for adequacy. Installations deemed inadequate shall be corrected by the contractor at no cost to the Owner.

H. Bends and offsets shall be made with approved tools for the type of conduit being utilized. Bends shall be made without kinking or destroying the smooth bore of the conduit. Parallel conduits shall be run straight and true with bends uniform and symmetrical. Minimum radii shall be per CEC 344-24.

I. Conduit Stub-outs below grade shall be capped with plastic cap, and identified by placing a pull box marked with correctly identified utility such as “Elec”, “Tel”, etc. Dimension for exact location on field record drawings. Provide lids for proper field application (i.e. traffic, incidental, pedestrian).

J. Conduit Seals: Where below grade conduits enter structure through slab or retaining wall of building or basement, seal the inside of each conduit as follows:
1. Provide damming material around conductors 3” into conduit.
2. Fill 3” of conduit with 3M #2123 sealing compound.
3. Wrap conductors where they exit the conduit with 3M #2229 "Scotch Seal" mastic tape. Lap tape to approximate diameter of the raceway and wrap outside of conduit opening with (minimum) one turn.
4. Use conduit sealing bushings type CSB (O-Z/Gedney) or equal.
5. Empty conduits shall be sealed with standard non-hardening duct seal compound and then capped to prevent entrance of moisture and gases and to meet fire resistance requirements.
6. Provide cable drip loop minimum 12” high.

K. Marker tape: Place plastic yellow marker tape at 12” below finish grade along and above buried conduits. Label tape "CAUTION: ELECTRICAL LINES BELOW" or similar wording.

L. Electrical and communications systems raceways routed underground shall not occupy the same trench as plumbing utilities such as sewer, water, storm drain, gas or other wet or dry gaseous utility system. A minimum of 12” of undisturbed earth is required. Where utilities must cross in closer proximity to each other due to physical constraints, 6” minimum crossing distances are allowed, however 18” on all sides of a utility crossing must be concrete encased.

M. Conduits, routed below footings, slabs, grade beams, columns, and other structural elements shall be installed in strict compliance with structural details and criteria shown on structural plans. Clearances below structural elements and sleeves through structural elements must be carefully planned to avoid conflict and must be approved by the structural engineer if conflict arises.

N. All conduit or raceways passing through fire rated walls, floors, or ceilings shall be installed with a listed penetration method which protects the opening to the same rating as the assembly and is non hardening.

O. Expansion Joints
1. Conduits 3” and larger, that are secured to the building structure on opposite sides of a building expansion joint, require expansion and deflection couplings. Install the couplings in accordance with the manufacturer’s recommendations.
2. Provide conduits smaller than 3” with junction boxes on both sides of the expansion joint. Connect conduits to junction boxes with sufficient slack of flexible conduit to produce 5”

vertical drop midway between the end. All conduit shall have a copper green grounding bonding conductor installed.

P. Seismic Joints
1. At seismic joints, provide conduits rigidly secured to the building structure on opposite sides of a building expansion joint with junction boxes or approved fittings, on both sides of the joint. Connect conduits to junction boxes with sufficient slack flexible conduit such that these slack conduits are 1 1/2 times the distance between conduit ends. Flexible conduit shall have a copper green ground bonding jumper installed.

Q. Location: Locate boxes and conduit bodies so as to ensure accessibility of electrical wiring.

R. Anchoring: Secure boxes rigidly to the substrate upon which they are being mounted, or solidly embed boxes in concrete or masonry.

S. Special Application: Provide weatherproof outlets for locations exposed to weather or moisture.

T. Knockout Closures: Provide knockout closures to cap unused knockout holes where blanks have been removed.

U. Mount outlet boxes, unless otherwise required by ADA, or noted on drawings, the following distances above the finished floor:
1. Receptacles, Telephone, TV & Data outlets. (measured to bottom of outlet box): +15".
2. Outlet above counter (measured to top of outlet box): +46".
3. Control (light) Switches. (measured to top of outlet box): +48".
4. Fire Alarm Manual Pull Stations, T-stats. (measured to top of outlet box): +48".
5. Fire Alarm Visuals: the lower of +80" to bottom of lens, or 6" below ceiling.
6. Other Outlets: As indicated in other sections of specifications or as detailed on drawings.

V. Coordinate all electrical device locations with the architectural floor plan and interior and exterior elevations to prevent mounting devices within elements that they may conflict such as cabinetry, mirrors, planters, etc.

W. Size outlet and junction boxes to minimum wire fill space requirements. Upsize box as required to allow ease of wire installation and device installation.

X. Outlet and junction boxes in fire rated walls shall be gauged and spaced so as not to exceed the maximum penetration allowed by the assembly without compromising the fire rating. If a conflict arises relative to a specific condition, the contractor shall follow the requirements of the fire authority and ask for guidance from the design team. At no time should a larger box be installed prior to resolution of conflict.

END OF SECTION

SECTION 26 0534

CABINETS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
   1. Cabinets where shown on the contract drawings and specified herein.

B. Related Work:
   1. Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.
   2. Section 26 0553, IDENTIFICATION OF ELECTRICAL SYSTEMS.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Type: Cabinets shall be flush or surface mounted type as indicated on the contract drawing, as per Code and U.L. Standard 50.

B. Cabinet Construction: Sizes as indicated, constructed of code gauge sheet steel with hinged lockable doors, common keyed with panelboards. Equip cabinets with 3/4" fire retardant treated plywood backboards and/or barriers as applicable, terminal blocks for connection; index card holders and cards mounted behind heavy plastic on inside of cabinet doors.

C. Finish: Cabinets shall be chemically cleaned and the fronts shall be finished in same way as panelboards and switchboards.

D. Controls: As indicated on the contract drawings.

E. Identification: Provide on exterior of cabinet doors engraved plastic nameplate identifying the cabinet as designated on the Contract Drawing. Lettering shall be white on black finish and shall be minimum 3/16” high. Affix nameplates to cabinet doors with a minimum of two escutcheon pins or screws.

PART 3 - EXECUTION

3.1 GENERAL

A. Required: To be located where indicated on the Contract Drawing and installed as per manufacturer's instruction. Securely fasten to structural members or Unistrut support in vertical and plumb position and at heights indicated.

B. Nameplates: Conform to provisions noted in 2.1E above or as designated on the plans.

END OF SECTION

SECTION 26 0546.13

ELECTRIC UTILITY SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
1. Manholes, handholes and ducts to form a complete underground raceway system.
2. "Duct" and "conduit", and "raceway" are used interchangeably in this specification and have the same meaning. Refer to Section 26 0533, RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS for approved raceway and materials as well as execution.
3. Scope of Work: Furnishing, installation and connection of manholes, handholes and ducts to form a complete underground raceway system for distribution of electrical and signal systems and utility service entrance facilities. This specification shall also provide guidance for construction of the utility company underground and substructure requirements. Contact serving company directly and obtain current detailed requirements of installation and adhere by same. Provide trenching, conduit, backfill, boxes and equipment pads as applicable. Nothing here in shall be construed to be in conflict with the requirements of the utility company, which shall take precedence over any possible conflicting requirement.

B. Related Work:
1. SITEWORK.
2. FLATWORK.
3. LANDSCAPING.
4. Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.
5. Section 26 0533, RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS: Conduits, fittings and boxes for raceway systems.
6. Section 26 0526, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS.
7. Section 31 2200, GRADING

1.3 SUBMITTALS

A. Submit in accordance with Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.

B. Shop Drawings:

1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
2. Include manholes, handholes, duct materials, and hardware. Proposed deviations from details on the drawings shall be clearly marked on the submittals.
3. If necessary to locate manholes or handholes at locations other than shown on the drawings, show the proposed locations accurately on scaled site drawings.
4. Precast manholes and handholes: Submit detail drawings and design calculations for approval prior to installation.

1.4 APPLICABLE PUBLICATIONS

A. Publications listed below (including amendments, addenda, revisions, supplements, and errata) form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.

B. Underwriters Laboratories, Inc. (UL):
1. UL 467 Grounding and Bonding Equipment
2. UL 651 Schedule 40 and 80 Rigid PVC Conduit
3. UL 6 Electrical Rigid Metal Conduit-Steel

C. National Fire Protection Association (NFPA):
1. 70 California Electrical Code (CEC)

D. National Electrical Manufacturers Association (NEMA):
1. RN 1 Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit
2. TC 2 Electrical Polyvinyl Chloride (PVC) Tubing And Conduit
3. TC 3 PVC Fittings For Use With Rigid PVC Conduit And Tubing

E. American Concrete Institute (ACI):
1. 318 Building Code Requirements For Structural Concrete

F. American Society for Testing and Materials (ASTM):
1. C478 Standard Specification for Precast Reinforced Concrete Manhole Sections
2. C478M Standard Specification for Precast Reinforced Concrete Manhole Sections (Metric).
3. F512-95 Standard Specification for Smooth-Wall Polyvinyl Chloride (PVC) Conduit and Fittings for Underground Installation

G. Utility company Handout Package and Construction Requirements for Underground and Substructure Installation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Concrete: ACI 318, 3000 psi minimum 28 day compressive strength.

B. Reinforcing Steel: Number 4 minimum.

C. Manhole Hardware:
1. Frames and covers (traffic type).
2. Sump frames and gratings.
3. Pulling Irons: 7/8” diameter hot dipped galvanized steel bar with exposed triangular shaped opening.
4. Cable supports:
   a. Cable stanchions, hot rolled, heavy duty, hot dipped galvanized "T" section steel 2 1/4" by 1/4" in size and punched with 14 holes on 1 1/2" centers for attaching cable arms.
   b. Cable arms, 3/16” gage, hot rolled, hot dipped galvanized sheet steel pressed to channel shape. Arms shall be approximately 2 1/2" wide and 14” long.
   c. Insulators for cable supports, high glazed, wet process porcelain.
   d. Spares: Equip each cable stanchion with two spare cable arms and six spare insulators for future use.
   e. Miscellaneous hardware, hot dipped galvanized steel.

D. Handhole Hardware:
1. Frames and covers configuration as shown on the drawings.
2. Pulling irons, 7/8” diameter galvanized steel bar with exposed triangular shaped opening.

E. Cable supports are not required.

F. Ground Rod Sleeve: Provide a 3” PVC sleeve in manhole floors so that a driven ground rod may be installed.

G. Manholes and Handholes shall be precast units and be constructed as described below. Units shall comply with ASTM C478, C478M.
1. Size: Plan area and clear height shall be not less than that shown on the drawings.
2. Accessories, hardware, and facilities shall be the same as required for poured in place type.
3. Assume ground water level 3’ below ground surface unless a higher water table is shown in the boring logs and adjust design accordingly.

H. Ducts:
1. Size shall be as shown on drawings.
2. Ducts (concrete encased):
   a. Plastic Conduit:
      1) NEMA TC6 & 8 and TC9 plastic utilities conduit UL 651 and 651A Schedule 40 PVC.
      2) Duct shall be suitable for use with 90 degree C rated conductors.
3. Ducts (direct burial):
   a. Plastic duct:
      1) NEMA TC2 and TC3, EPC-40, Type II.
      2) UL 651 and 651A, Schedule 40 Schedule 80 PVC.
      3) Duct shall be suitable for use with 75 degree C rated conductors.
   b. Rigid metal conduit, PVC-coated: UL6 and NEMA RN1 galvanized rigid steel, threaded type, coated with PVC sheath bonded to the galvanized exterior surface, nominal 0.040” thick.

I. Ground Rods: Per Section 26 0526, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS.

J. Ground Wire: Stranded bare copper No. 6 AWG minimum.

K. Conduit Spacers: Prefabricated plastic.

L. Warning Tape: Standard 4 mil polyethylene 3" wide tape, detectable type, red with black letters, imprinted with "CAUTION BURIED ELECTRIC CABLE BELOW".

M. Pull Rope: Plastic with 200 pound minimum tensile strength.

PART 3 - EXECUTION

3.1 TRENCHING

A. Refer to EARTHWORK section of specification for trenching back-filling, and compaction requirements.

B. Work with extreme care near existing ducts, conduits, cables, and other utilities to avoid damaging them.

C. Cut the trenches neatly and uniformly for utility company trenches, notify for inspections by utility company a minimum of 48 hours in advance.

D. Conduits to be installed under existing paved areas, roads, and railroad tracks which are not to be disturbed shall be protected into place. Conduits shall be minimum 36" cover.

E. Trench Preparation: A 4" sand bedding is required if trench bottom is not rock free. A 4" sand covering over the cable is required if the native backfill is not rock free. Backfill and compaction should meet City, County, State and utility company requirements. The serving utility company may required 100% sand backfill. All backfill requirements shall also meet or exceed those set forth in the earthwork or civil section of this specification.

F. Excavation: Provide 6" gravel in bottom of excavated holes for subsurface transformers and all concrete boxes. Spare gravel shall be available for final adjustment. The Contractor is responsible for final grade level of enclosures and boxes. Non-conformance will be corrected by electrical contractor at his expense.

G. Conduit Routing: Sharp turns, bends, or other irregularities in the conduit must be avoided. Minimum radius bends shall be as required by the serving utility company. Every effort should be made to obtain a straight water tight conduit line. The end of all spare conduits must be capped. The utility company Inspector must approve deviation from layout.

H. Conformance: All work must conform to the utility company "handout package" and Specification 59 and/or 99. Copies are available from the utility company upon request.

I. Joint Trenching: Maintain all required depths, clearance and separations as required by code, ordinance or utility company policies. Coordinate with other utilities to confirm requirements.

3.2 OTHER PADMOUNTED EQUIPMENT

A. Provide adequately sized and reinforced concrete pads with openings for conduit(s) as necessary by the utility company and or the equipment manufacturer.

B. A grounding system shall be installed at each padmounted piece of equipment including, but not limited to, a ground rod, grounding conductor, ufer, and ground grid (if called for).

C. Padmounted equipment shall be bolted to concrete pad with minimum 5/8” x 7 1/2" anchor bolts, one in each of 4 corners of each section of padmounted equipment.

END OF SECTION

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SECTION 26 0553

IDENTIFICATION OF ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
   1. Nameplates and warning signs where specified herein and as shown on contract documents including the following:
      a. Nameplates and warning signs permanently installed on all electrical equipment and devices including, but not limited to, the following items:
         1) Enclosures for transformers, switchboards, motor control, panels, pullboxes, cabinets, motors, generators, transfer switches.
         2) Enclosures for all separately enclosed devices including, but not limited to, disconnect switches, circuit breakers, contactors, time switches, control stations and relays, fire alarm panels and lighting control panel.
         3) Wall switches not within sight of outlet controlled.
         4) Special systems such as, but not limited to, telephone, fire alarm, warning and signal systems. Identification shall be at each equipment rack, terminal cabinet, control panel, annunciator and pullbox.
         5) Devices mounted within and part of equipment including circuit breakers, switches, control devices, control transformers, relays, indication devices and instruments.
   2. Conductor and Cable Identification.

B. Related Work:
   1. Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.
   2. Section 26 0519, LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES.
   3. Section 26 2416, PANELBOARDS.

PART 2 - PRODUCTS

2.1 EQUIPMENT LABEL DESIGNATIONS

A. Equipment labels indicating equipment designations both emergency and normal. Designation data per drawings or to be supplied with shop drawings approval.

B. Panelboard labels showing panel designation, voltage, phase and source.

C. In accordance with CEC 110.16, provide arc flash protection warning labels on all switchboards, panelboards, distribution panels, transformers, safety switches, transfer equipment, etc. Labels shall be per ANSI Z535.4 guidelines.

2.2 MATERIALS

A. For Labels: Three layer laminated plastic or micarta with engraved white letters over black background.

B. For Warning Signs: Minimum 18 gauge steel with red lettering on white porcelain enamel finish.

C. Arc flash labels shall be provided as required by CEC Article 70E.

D. Conductor tape number markers: TayMac MX4280 Series non-fading permanent adhesive.

PART 3 - EXECUTION

3.1 MOUNTING

A. Equipment labels shall be mounted by self-tapping, threaded screws and bolts, or by rivets. Adhesive types are not acceptable unless specifically noted in this section.

B. Conductor tape markers shall be consistently placed for ready conductor identification.

3.2 HEIGHTS ON LABELS

A. Panelboards, Switchboards and Motor Control Centers and Special Systems Enclosures: 1/4" identify equipment designation; 1/8” identify voltage rating and source.

B. Individual Circuit Breakers, Switches, and Motor Starters in Panelboards, Switchboards, and Motor Control Centers: 3/16” identify circuit and load served, including location of equipment.

C. Enclosed Circuit Breakers, Enclosed Switches, and Motor Starters: 3/16” identify load served.

D. Transformers: 3/16” identify equipment designation; 1/8” identify primary and secondary voltages, primary source and secondary load. Include location of primary source or secondary load if remote from transformer.

3.3 WARNING SIGNS

A. Warning signs shall be permanently mounted with cadmium plated steel screws or nickel-plated brass bolts.

B. Warning signs to read "DANGER - HIGH VOLTAGE", with letters 1 1/2" high, 3/16” stroke minimum.

C. Provide warning sign on all doors or immediately next to door for equipment rooms, enclosures or closets containing equipment energized above 150 volts to ground as per CEC, and/or as directed by the Architect. For interior finish spaces and interior doors, signage shall be coordinated and approved with the Architect in advance of installation.

END OF SECTION

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SECTION 26 0900

CONTROLS AND INSTRUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
   1. Control devices, shown on the drawings and/or required by other sections, to assure a complete and operating system.
   2. Furnish submittals/shop drawings for all equipment in this section as described in Section 26 0500, 1.4, COMMON WORK RESULTS FOR ELECTRICAL.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Terminal and Control Cabinets shall be manufactured from code gauge galvanized steel with hinged locking covers finished in grey or hammer tone enamel. Knockouts, barriers and plywood backing shall be provided where required. Cabinets shall be of raintight construction where exposed to the weather. Approved manufacturers are Circle AW, Wireguard, Benner-Nawman, or equal.

B. Photocontrols and time switches shall be provided as indicated on the drawings. Approved manufacturers are Intermatic, Paragon, Tork or equal. Where indicated on the fixture schedule, photocells in outdoor fixtures shall be factory installed and wired.

C. Lighting Contactors shall be of the correct number of poles with suitable contact ampere ratings. Provide fusing protection for all lighting contactor control circuits. Verify all coil voltages prior to installation. Approved manufacturers are General Electric, Westinghouse, Square "D" or equal.

D. Motor Controls shall be manual or magnetic with motor overload thermal relays. Individual thermal elements sized to the correct motor full load amps shall be used. Provide correct NEMA rated enclosure. Select proper voltage, class, size and horsepower rating. Select the correct coil voltage if magnetic.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Power to all irrigation controllers shall be provided by the Electrical Contractor as required for the irrigation equipment. Also provide and install conduit sweeps as required to house low voltage wiring between controller and exterior below grade.

B. General Purpose Control Contactors shall be rated for the use with the correct ampere rating, voltage, size and horse power rating. Select the correct control coil voltage.

END OF SECTION

SECTION 26 2416

PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
1. Panelboards.

B. Related Work:
1. Division 09 "PAINTING": Identification and painting of panelboards.
2. Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.
3. Section 26 0533, RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS.
4. Section 26 0519, LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES (600 VOLTS AND BELOW): Cables and wiring.
5. Section 26 0526, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS: Requirements for personnel safety and to provide a low impedance path for possible ground fault currents.

1.3 APPLICABLE PUBLICATIONS

A. Publications listed below (including amendments, addenda, revisions, supplements and errata) form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.

B. Underwriters Laboratories, Inc. (UL):
1. No. 50-1995 Enclosures for Electrical Equipment
2. No. 67-1993 Panelboards
3. No. 489-1991 Molded Case Circuit Breakers and Circuit Breaker enclosures

C. National Fire Protection Association (NFPA):
1. No. 70-2010 California Electrical Code (CEC)

D. National Electrical Manufacturers Association (NEMA):
1. No. PB-1-2002 Panelboards.
2. No. AB-3-1996 Molded Case Circuit Breakers and Their Application.

PART 2 - PRODUCTS

2.1 PANELBOARDS

A. Panelboards shall be in accordance with UL, NEMA, NEC, CEC and as shown on the drawings. Approved manufacturers are Cutler Hammer, Square D, Seimens, General Electric.

B. Panelboards shall be standard manufactured products. All components of the panelboards shall be the product and assembly of the same manufacturer. All similar units of all panelboards to be of the same manufacturer.

C. All panelboards shall be dead front safety type. Arrange sections for easy removal without disturbing other sections.

D. All panelboards shall be completely factory assembled with molded case circuit breakers. All factory wiring shall be checked for correct tightness and visually inspected to insure that bussing and terminations have not become loose in transit to job site.

E. Panelboards shall have main breaker or main lugs, bus size, voltage, phase, top or bottom feed, and flush or surface mounting as scheduled on the drawings. Refer to single line diagram and panel schedules on drawings. Terminals shall be minimum 75 degree rated. Back fed main circuit breakers are not allowed. Main circuit breakers shall be vertically mounted.

F. Panelboards shall have the following features:
1. Nonreduced size copper bus bars, and connection straps bolted together and rigidly supported on molded insulators. Bus bar taps for panels with single pole branches shall be arranged for sequence phasing of branch circuit devices.
2. Full size neutral bar, mounted on insulated supports.
3. Ground bar and isolation ground bar (where called for in panel schedule) with sufficient terminals for all grounding wires. Buses braced for the available short circuit current.
4. All breakers and phase bus connections shall be arranged so that it will be possible to substitute a 2-pole breaker for two single pole breakers, and a 3-pole breaker for three single pole breakers, when trip is 30 amps or less and frame size is 100 amperes or less, without having to drill and tap the main bus bars at bus straps. Where used for heating and air conditioning, and refrigeration equipment, use only HACR type U.L. listed circuit breakers.
5. Design interior so that protective devices can be replaced without removing adjacent units, main bus connectors, and without drilling or tapping.
6. Where designated on panel schedule as "space", include all necessary bussing, device support and connections. Provide blank cover for each space.
7. In two section panelboards, the main bus in each section shall be full size. The first section shall be furnished with subfeed lugs on the line side with cable connections to the second section. Panelboard sections with tapped bus or crossover bus are not acceptable.
8. Series rated panelboards are not permitted.
9. Label all panels in accordance with Section 26 0553, IDENTIFICATION OF ELECTRICAL SYSTEMS.
10. Recessed panel space conduit: Provide (1) ¾ inch spare conduit stubbed to accessible ceiling space and/or interstitial space below floor for every (5) spaces and spares indicated on panel schedules.

G. Panelboards serving as building mains shall be “service entrance rated” and UL Listed as “service equipment”.

2.2 CABINETS AND TRIMS

A. Cabinets:
1. Provide galvanized steel cabinets to house panelboards. Cabinets for outdoor panels shall be factory primed and suitably treated with a corrosion-resisting paint finish meeting UL standard for outdoor applications.
2. All ventilated openings in panelboards and switchboards, shall be furnished with dust filters to prevent entrance of dust and debris.
3. Cabinets for panelboards may be of one piece formed steel or of formed sheet steel with end and side panels welded, riveted, or bolted as required.
4. Provide necessary hardware for "in" and "out" adjustment of panel interior.
5. Cabinets for two section panelboards shall be arranged side by side, and shall be the same height. Flush mounted cabinets should be 1 1/2" apart and coupled by conduit nipple if necessary.
6. Gutter size in panel boxes, on all sides, shall be in accordance with the CEC. Penetrations through gutter to live area of the panelboard shall incorporate approved non-metallic-grommet type of insulation to protect wire passing through.

B. Trims:
1. Fabricate trim of sheet steel consisting of frame with door attached by concealed hinges. Provide flush or surface trim as shown on the drawings.
2. Flush trims shall overlap the box by at least 3/4" all around.
3. Surface trim shall have the same width and height as the box.
4. Flush or surface trims shall not have ventilating openings.
5. Secure trims to back boxes by indicating trim clamps.
6. Provide a welded angle on rear of trim to support and align trim to cabinet.
7. Provide separate trims for each section of multiple section panelboards. Trims and doors of sections shall be of the same height.

C. Doors:
1. Provide doors with flush type latch and manufacturer's standard lock. Doors over 48 inches in height shall have a vault handle and a three-point catch, arranged to fasten door at top, bottom, and center.
2. In making switching devices accessible, doors shall not uncover any live parts.
3. Provide concealed hinges welded to the doors and trims.
4. For lighting or power contactors incorporated in panelboards, provide separate doors for the contactors.
5. Provide keyed alike system for all panelboards.
6. Provide a directory card, metal holder, and transparent cover. Permanently mount holders on inside of doors.

D. Painting:
1. Thoroughly clean and paint trims and doors at the factory with primer and manufacturer's standard finish.

E. Breaker features shall be as follows:
1. Integral housing of molded insulating material.

2. Silver alloy contacts.
3. Arc quenchers and phase barriers for each pole.
4. Quick-make, quick-break, operating mechanisms.
5. A trip element for each pole, thermal magnetic type with long time delay and instantaneous characteristics, a common trip bar for all poles and a single operator.
6. Electrically and mechanically trip free.
7. An operating handle which indicates ON, TRIPPED, and OFF positions.
    a. Line connections shall be bolted.
    b. Interrupting rating shall not be less than the maximum short circuit current available at the line terminals as indicated on the drawings, and as shown on the electrical system protective device study as required in Section 26 0573 OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY. The interrupting rating shall not be less than the minimum identified requirement.
8. An overload on one pole of a multipole breaker shall automatically cause all the poles of the breaker to open.

2.3 INSTALLATION

A. Installation shall be in accordance with CEC, as shown on the drawings, and as specified.

B. Locate panelboards so that the present and future conduits can be conveniently connected. Coordinate the sizes and layout of cabinets within the designated spaces. All equipment must be dimensioned in order to physically fit in the spaces provided and to comply with all code required clearances.

C. Install a typewritten schedule of circuits in each panelboard. Include the room numbers (as finally described by the Owner) and items served on the cards. Obtain final room numbers from Architect prior to creating schedule.

D. Mount the panelboard so that maximum height of the top circuit breaker above finished floor shall not exceed 78 inches.

E. For panelboards located in areas accessible to the public, paint the exposed surfaces of the trims, doors, and boxes with finishes to match surrounding surfaces after the panelboards have been installed.

F. Circuit numbers shall correspond to the approved panel schedule. Provide as-built drawings showing the actual circuit numbers being used for each device on each branch circuit if changes are required.

G. Verify depth of all flushmounted enclosures in walls to be certain wall depth will accommodate panel depth prior to installation.

H. All openings in switchgear and panelboards that are unused shall be sealed with bolts and washers. Use caulking where holes or openings cannot be sealed by way of a washer, or bolts or conduit seals.

I. Contractor shall include the services of an independent testing company to test GFI circuit breakers in distribution and main panelboards.

END OF SECTION

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SECTION 26 2726

WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
   1. Wiring devices.

B. Related Work:
   1. Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.
   2. Section 26 0533, RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS.
   3. Section 26 0519, LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES.
   4. Section 26 0526, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS.

PART 2 - PRODUCTS

2.1 RECEPTACLES

A. General: All receptacles shall be listed by Underwriters Laboratories, Inc.
   1. Mounting straps shall be plated steel, with break-off plaster ears and shall include a self-grounding feature (this feature does not substitute for a grounding conductor terminated on grounding strap of device). Terminal screws shall be brass, brass plated or a copper alloy metal.
   2. Receptacles shall be of a screw terminal type, “pressure type quick wire” terminations are not allowed.

B. Duplex receptacles shall be Style Line/Decora single phase, 20 ampere, 120 volts, 2-pole, 3-wire, and conform to the NEMA 5-20R configuration in NEMA WD 6. The duplex type shall have bussing break-off feature for two-circuit operation. The ungrounded pole of each receptacle shall be provided with a separate terminal.
   1. Bodies shall be white in color. Verify wiring device color selection to be provided by Architect. Contractor to verify device color with Architect prior to procurement.
   2. Switched duplex receptacles shall be wired so that only the top receptacle is switched. The remaining receptacle shall be unswitched.
   3. Ground Fault Interrupter Duplex Receptacles: Shall be an integral unit suitable for mounting in a standard outlet box.

a. Ground fault interrupter shall be commercial grade and consist of a differential current transformer, solid state sensing circuitry and a circuit interrupter switch. It shall be rated for operation on a 60 Hz, 120 volt, 20-ampere branch circuit. Device shall meet CEC requirements. Device shall have a minimum nominal tripping time of 1/30th of a second. Devices shall meet UL 943.

C. Receptacles; 20, 30 and 50 ampere, 250 volts: Shall be complete and match with appropriate cord grip plug. Devices shall meet UL 231.

D. Weatherproof Receptacles: Shall consist of a listed weather resistant duplex receptacle, mounted in box with a gasketed, while in use weatherproof, cast metal cover plate and cap receptacle opening. The cap shall be permanently attached to the cover plate by a spring-hinged flap. Approved manufacturers: Intermatic WP10 Series, Thomas & Betts/Red Dot 2CK Series, or engineer approved equal.

2.2 SWITCHES AND DIMMERS

A. Style Line/Decora rocker switches shall be totally enclosed tumbler type with bodies of phenolic compound. Toggle handles color to match receptacle device color unless otherwise specified.
1. Shall be single unit toggle, butt contact, quiet AC type, heavy-duty general-purpose use with an integral self grounding mounting strap with break-off plasters ears and be of a screw terminal type.
2. Shall be color coded for current rating, listed by Underwriters Laboratories, Inc., and meet the requirements of NEMA WD 1, Heavy-Duty and UL 20.
3. Ratings:
   a. 120 volt circuits: 20 amperes at 120-277 volts AC.
   b. 277 volt circuits: 20 amperes at 277 volts AC.
4. The switches shall be mounted on the strike plate side of doors.
5. Incorporate barriers between switches with multi-gang outlet boxes where required by the CEC.
6. All toggle switches shall be of the same manufacturer.

2.3 WALL PLATES

A. Wall plates for switches and receptacles shall be thermo plastic

B. Standard NEMA design, so that products of different manufacturers will be interchangeable. Dimensions for openings in wall plates shall be accordance with NEMA WD1.

C. For receptacles or switches ganged together, wall plates shall be a single ganged plate.

D. Wall plates for data, telephone or other communication outlets shall be as specified in the associated specification.

E. Surface mounted boxes, NEMA1, shall be industrial grade raised galvanized steel covers. In shop areas all receptacles shall be dust proof and or waterproof where applicable.

F. Waterproof device covers shall be cast iron, 4-corner screw type, for FS and FD type mounting. Device covers shall be zinc galvanized finish. Weatherproof covers shall be lockable.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Switches installed in hazardous areas shall be explosion proof type in accordance with the CEC and as shown on the drawings.

B. Installation shall be in accordance with the CEC, NECA "Standard of Installation", and as shown as on the drawings.

C. Ground terminal of each receptacle shall be bonded to the outlet box with an approved green bonding jumper, and also be connected to the green equipment grounding conductor.

D. General: Devices shall be of the type specified herein. All devices shall be installed with "pigtailed" leads from the outlet box. No device shall be used in the "feed through" application. Screw terminals shall be used to connect all devices to the circuit and shall be grounded by means of a ground wire where grounding terminals are provided in the device.

E. Installation: Devices and plates shall be installed in a "plumb" condition and must be flush with the finish surface of the wall where boxes are recessed.

F. Mounting heights: All control and convenience devices shall comply with California Code of Regulations Title 24 and ADA with respect to accessibility requirements. Mounting heights indicated on plans shall have precedence.

G. Install switches with the off position down.

H. Clean debris from outlet boxes.

I. Provide extension rings as required to bring outlet boxes flush with finished surface or casework.

J. Test each receptacle device for proper polarity.

END OF SECTION

SECTION 26 5100

INTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
1. Interior lighting systems, including luminaires, ballasts, lamps and emergency lighting equipment.

B. Related Work:
1. Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.
2. Section 26 0533, RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS: Conduits, fittings, and boxes for raceway systems.
3. Section 26 0519, LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES (600 VOLTS AND BELOW): Low voltage power and lighting wiring.
4. Section 26 0526, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS: Requirements for personnel safety and to provide a low impedance path for possible ground fault currents.
5. Section 26 5600, EXTERIOR LIGHTING.
6. Section 26 5670, LIGHTING ACCEPTANCE TESTING.

1.3 SUBMITTALS

A. Submit in accordance with Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.

B. Shop Drawings:
1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
2. Include electrical ratings, dimensions, mounting, details, materials, terminations, wiring and connection diagrams, photometric data, ballasts, luminaires, lamps and controls.

1.4 APPLICABLE PUBLICATIONS

A. Publications listed below (including amendments, addenda, revisions, supplements) form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.

B. American Society for Testing and Materials (ASTM).

C. American National Standards Institute (ANSI).

D. Aluminum Association Inc. (AA).

E. Illuminating Engineering Society of North America (IESNA).

F. National Electrical Manufacturers Association (NEMA).

G. National Fire Protection Association (NFPA).

H. Underwriters Laboratories, Inc. (UL).

1.5 DEFINITIONS

A. Lighting terminology used herein is defined in IES

B. Exception: The term "driver" is used herein to cover both drivers and power supplies, where applicable.

C. Clarification: The term "LED light source(s)" is used herein per IES to cover LED package(s), module(s), and array(s).

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Materials and equipment shall be in accordance with CEC, UL, ANSI, and as shown on the drawings and specified.

2.2 LIGHTING FIXTURES (LUMINAIRES)

A. Shall be in accordance with NFPA 70, UL 1598 and shall be as shown on drawings and as specified. All luminaires shall have been certified to the California Energy Commission by its manufacturer to comply with the efficiency standards as per California Code of Regulations Title 24, Part 6, Section 111 referencing the Appliance Efficiency Regulations in Title 20. Post certification with building permit.

B. Sheet Metal:
1. Shall be formed to prevent warping and sagging. Housing, trim and lens frame shall be true, straight (unless intentionally curved) and parallel to each other as designed.
2. Wireways and fittings shall be free of burrs and sharp edges and shall accommodate internal and branch circuit wiring without damage to the wiring.
3. When installed, any exposed fixture housing surface, trim frame, door frame and lens frame shall be free of light leaks; lens doors shall close in a light tight manner.

a. Hinged door closure frames shall operate smoothly without binding when the fixture is in the installed position, and latches shall function easily by finger action without the use of tools.

C. Ballasts shall be serviceable while the fixture is in its normally installed position, and shall not be mounted to removable reflectors or wireway covers.

D. Recessed fixtures shall be of the type approved for the ceiling and insulation conditions and appropriate for the installation location. Insulation must be held back from the fixture to provide manufacturers' recommended clearances for proper operation. Thermal tripping shall be the installer's responsibility to correct. Where installed in fire rated ceilings, coordinate installation of fire rated enclosures around the ceiling penetrations. Fixtures shall contain the proper through wiring capacity for that which is shown on the plans.

E. Recessed fixtures shall be provided with the appropriate trims and hardware compatible with the ceiling type shown. Plaster frames are required where plaster or gypsum board ceilings are encountered.

F. Mechanical Safety: Lighting fixture closures (lens doors, trim frame, hinged housings, etc.) shall be retained in a secure manner by captive screws, chains, captive hinges or fasteners such that they cannot be accidentally dislodged during normal operation or routine maintenance.

G. Metal Finishes:
1. The manufacturer shall apply standard finish (unless otherwise specified) over a corrosion resistant primer, after cleaning to free the metal surfaces of rust, grease, dirt and other deposits. Edges of pre-finished sheet metal exposed during forming, stamping or shearing processes shall be finished in a similar corrosion resistant manner to match the adjacent surface(s). Fixture finish shall be free of stains or evidence of rusting, blistering, or flaking.
2. Interior light reflecting finishes shall be white with not less than 85 percent reflectances, except where otherwise specified on the drawing.
3. Exterior finishes shall be as shown on the drawings.

H. Provide all lighting fixtures with a specific means for grounding metallic wireways and housings to an equipment grounding conductor.

I. Light Transmitting Components for Fluorescent Fixtures:
1. Shall be 100 percent virgin acrylic plastic or water white, annealed, crystal glass.
2. Flat lens panels shall have not less than 1/8 inch of average thickness. The average thickness shall be determined by adding the maximum thickness to the minimum unpenetrated thickness and dividing the sum by 2.
3. Unless otherwise specified, lenses, diffusers and louvers shall be retained firmly in a metal frame by clips or clamping ring in such a manner as to allow expansion and contraction of the lens without distortion or cracking.

J. Recessed LED fixtures shall be manufactured specifically for compact fluorescent or LED lamps with ballasts or drivers integral to the fixture. Assemblies designed to retrofit fixtures are prohibited except when described in this fashion. Fixtures shall be designed for lamps as specified.

K. Provide fixtures with a U.L. listing for shower or shower rating above shower or tub areas.

2.3 LED LUMINAIRE REQUIREMENTS

A. General Requirements:
1. Luminaire shall have an external label per ANSI C136.15
2. Luminaire shall have an internal label per ANSI C136.22.
3. Luminaires shall start and operate in -20°C to +40°C ambient.
4. LED light source(s) and driver(s) shall be RoHS compliant.

2.5 LED DRIVER

A. Driver
1. Rated case temperature shall be suitable for operation in the luminaire operating in the ambient temperatures as indicated.
2. Shall accept the voltage or voltage range indicated, and shall operate normally for input voltage fluctuations of plus or minus 10 percent. Consistent with NEMA SSL 1.
3. Shall have a minimum Power Factor (PF) of 0.90 at full input power and across specified voltage range.

B. Electromagnetic interference
1. Shall have a maximum Total Harmonic Distortion (THD) of 20% at full input power and across specified voltage range.
2. Shall comply with FCC 47 CFR part 15 non-consumer RFI/EMI standards.

C. The following shall be in accordance with corresponding sections of ANSI C136.37
1. Wiring and grounding
2. All internal components shall be assembled and pre-wired using modular electrical connections.
3. Mounting provisions
4. Terminal blocks for incoming AC lines
5. Latching and hinging
6. Ingress protection

2.6 LAMPS

A. Provide lamps for all luminaires.

B. Lamps, coated or clear as recommended by luminaire manufacturer to provide for maximum luminaire efficiency in luminaire used. Provide coated lamps for all interior luminaires.

C. For interior use, all metal halide lamps installed in a common area of building are of the same manufacturer's production run. Color discontinuities after initial "burn in" are unacceptable and shall be replaced if deemed unacceptable to Owner. All indoor HID lamps shall be coated unless otherwise noted.

D. Position oriented lamps shall be used in all horizontal mounted lamp position fixtures. Universal lamp is not acceptable in horizontal lamp position.

E. LED LIGHT SOURCE
1. Minimum Color Rendering Index (CRI): 60.

2. Correlated Color Temperature (CCT)
   a. CCT shall be as listed in Table 1 below:

Table 1. Allowable CCT

Manufacturer-Rated Nominal CCT (K)	Allowable LM-79 Chromaticity Values
	Measured CCT (K)
2700	2580 to 2870
3000	2870 to 3220
3500	3220 to 3710
4000	3710 to 4260
4500	4260 to 4746
5000	4745 to 5311
5700	5310 to 6020
6500	6020 to 7040

2.7 INSTALLATION

A. Installation and furnishing of lighting fixtures shall be in accordance with the CEC, manufacturer's instructions and as shown on the drawings or specified. Fixtures damaged in transit and storage prior to completion shall be replaced at Contractor's expense.

B. Align, mount and level the lighting fixtures uniformly.

C. Avoid interference with and provide clearance for equipment. Where the indicated locations for the lighting fixtures conflict with the locations for equipment, change the locations for the lighting fixtures by the minimum distances necessary as approved by the Architect. The Architectural reflected ceiling plan will take precedence over electrical plans.

D. For suspended lighting fixtures, the mounting heights shall provide the clearances between the bottoms of the fixtures and the finished floors as shown on the drawings.

E. Lighting Fixture Supports:
   1. Contractor shall provide support for all of the fixtures independent of suspended ceilings. Supports may be anchored to channels of the ceiling construction, to the structural slab or to structural members within a partition, or above a suspended ceiling.
   2. Shall maintain the fixture positions after cleaning and relamping.
   3. Shall support the lighting fixtures without causing the ceiling or partition to deflect.
   4. Hardware for recessed fluorescent fixtures:
   5. Fixtures shall be supported as detailed on drawings and as required by DSA standards.
   6. Installation: Fixtures shall be securely mounted on ceilings and walls with appropriate fastening devices. "Drop-in" type T-bar fixtures shall be secured with #12 gauge safety "earthquake wires" as described by California Code of Regulations Title 24 Part 2, Chapter 47. "Earthquake clips" will be required for fastening to the T-bar system in addition to safety wire. Surface mounted fluorescent fixtures shall be solidly screwed or clipped into framing above drywall with 4-#10 sheet metal screws into each fixture. Provide blocking for screw supports behind all surface mounted lighting fixtures weighing more than 15 lbs.
   7. Surface mounted lighting fixtures:

a. Fixtures shall be bolted against the ceiling independent of the outlet box at four points spaced near the corners of each unit. The bolts shall be minimum ¼-20 bolt, secured to structural ceiling. Non-turning studs may be attached to the building structure by 12 gauge safety hangers.

8. Fixtures mounted in open construction shall be secured directly to the building structure with approved bolting and clamping devices.
9. Single or double pendent mounted lighting fixtures:
   a. Each stem shall be supported by an approved outlet box, mounted swivel joint and canopy which holds the stem captive and provides spring load (or approved equivalent) dampening of fixture oscillations. Outlet box shall be supported vertically from the building structure and be allowed to swing to a 45 degree angle.
10. Outlet boxes for support of lighting fixtures (where permitted) shall be secured directly to the building structure with approved devices or supported vertically in a hung ceiling from the building structure with a nine gauge wire hanger, and be secured by an approved device to a main ceiling runner or cross runner to prevent any horizontal movement relative to the ceiling.

F. Furnish and install the specified lamps for all lighting fixtures as part of this project.

G. Coordinate between the electrical and ceiling trades to ascertain that approved lighting fixtures are furnished in the proper sizes and installed with the proper devices (hangers, clips, trim frames, flanges), to match the ceiling system being installed.

H. Bond lighting fixtures and metal accessories to the grounding system as specified in Section 26 0526, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS.

I. At completion of project, relamp all fixtures which have failed/burned-out lamps. Clean all fixtures, lenses, diffusers and louvers that have accumulated dust/dirt during construction.

J. Provide unswitched leg of interior lighting branch circuit to integral emergency battery pack light fixtures, exit signs and night lights as applicable per lighting plans.

K. Wallmount fixtures in walkway areas shall not project more than 4 inches from wall when projection occurs lower than 80 inches.

END OF SECTION

SECTION 26 5600

EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies the furnishing, installation, and connection of exterior luminaires, controls, poles and supports.

1.2 RELATED WORK

A. Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.

B. Section 26 0533, RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS: Conduits, fittings, and boxes for raceway systems.

C. Section 26 0519, LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES (600 VOLTS AND BELOW): Low voltage power and lighting wiring.

D. Section 26 0546.13, ELECTRIC UTILITY SYSTEMS: Underground handholes and conduits.

E. Section 26 0526, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS: Requirements for personnel safety and to provide a low impedance path for possible ground fault currents.

F. Section 26 5100, INTERIOR LIGHTING.

G. Section 26 5670, LIGHTING ACCEPTANCE TESTING.

1.3 SUBMITTALS

A. Submit in accordance with Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.

B. Shop Drawings:
   1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
   2. Include electrical ratings, dimensions, mounting, details, materials, required clearances, terminations, wiring and connection diagrams, photometric data, ballasts, poles, luminaires, effective projected area (EPA), lamps and controls.

1.4 APPLICABLE PUBLICATIONS

A. Publications listed below (including amendments, addenda, revisions, supplements) form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.

B. American Society for Testing and Materials (ASTM).

C. American Concrete Institute (ACI).

D. American National Standards Institute (ANSI).

E. Aluminum Association Inc. (AA).

F. Illuminating Engineering Society of North America (IESNA).

G. National Electrical Manufacturers Association (NEMA).

H. National Fire Protection Association (NFPA).

I. Underwriters Laboratories, Inc. (UL).

1.5 DELIVERY, STORAGE, AND HANDLING

A. Poles: Do not store poles on ground. Store poles so they are at least one foot above ground level. Do not remove factory-applied pole wrappings until just prior to installation of pole.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Materials and equipment shall be in accordance with CEC, UL, ANSI, as shown on the drawings and as specified.

2.2 POLES

A. General:
   1. Poles shall be steel or aluminum as specified in fixture schedule and as shown on the drawings. Finish shall be as approved by the Architect. Assume custom color for bidding.
   2. The pole and arm assembly shall be designed for wind loading of 100 miles per hour, with an additional 30 percent gust factor, supporting luminaire(s) having the effective projected areas indicated as per manufacturer data.
   3. Poles shall anchor-bolt type designed for use with underground supply conductors. Poles shall have gasketed handhole with a minimum clear opening of 2.5” x 5”. Handhole cover shall be secured by stainless steel captive screws.
   4. Provide a steel grounding stud opposite hand hole openings.

B. Provide a base cover matching the pole in material and color to conceal the mounting hardware pole-base welds and anchor bolts.

C. Hardware: All necessary hardware shall be 300 series tamperproof stainless steel.

D. Types:
1. Aluminum: Provide aluminum poles manufactured of corrosion resistant AA AAH35.1 aluminum alloys conforming to AASHTO LTS-4 for Alloy 6063-T6 or Alloy 6005-T5 for wrought alloys, and Alloy 356-T4 (3,5) for ASTM B108-01 cast alloys. Poles shall be seamless extruded or spun seamless type. Provide a pole grounding connection designed to prevent electrolysis when used with copper ground wire. Base covers for aluminum poles shall be cast from 356-T6 aluminum alloy in accordance with ASTM B108-01.
2. Steel: Provide steel poles having minimum 11-gage steel with minimum yield/strength of 48,000 psi and iron-oxide primed factory finish. Base covers for steel poles shall be structural quality hot-rolled carbon steel plate having a minimum yield of 36,000 psi.

2.3 FOUNDATIONS FOR POLES

A. Foundations shall be cast-in-place concrete.

B. Foundations shall support the effective projected area of the specified pole, arm(s), luminaire(s), and all accessories specified under wind conditions as specified in this section.

C. Place concrete in spirally wrapped treated paper forms for round foundations, and construct forms for square foundations.

D. Rub-finish and round all above-grade concrete edges to approximately 1/4” radius unless otherwise detailed.

E. Concrete shall have 3000 psi minimum 28 day compressive strength.

F. Anchor bolt assemblies and reinforcing of concrete foundations shall be as shown on the drawings and meet ACI 318. Anchor bolts shall be in a welded cage or properly positioned by the tie wire to stirrups.

G. Install a copperclad ground rod, not less than 5/8” diameter by 10’ long in pullbox adjacent to each fixture. Where rock or layered rock is present, drill a hole not less than 2” in diameter and 6’ deep, backfill with tamped fine sand and drive the rod into the hole. Bond the rod to the pole with not less than number 6 AWG bare copper wires. The method of bonding shall be approved for the purpose.

H. After leveling of pole grout base solid between plate and footing with dry pack concrete for vibration reduction.

2.4 LUMINAIRES

A. UL 1598 and ANSI C136.17. Luminaries shall be weatherproof, heavy duty, outdoor types designed for efficient light utilization, adequate dissipation of lamp and ballast heat and safe cleaning and relamping.

B. Light emitting diode (LED)-based solid state lighting (SSL) products shall be factory tested in accordance to the International Engineering Society (IES) LM-79 recommendations and meet ANSI C78.377-2008 standards.

C. LED light sources shall be factory tested in accordance to IES LM-80 recommendations.

D. LED-based SSL product shall incorporate an external heat sink, integral to the luminaire.

E. IESNA HB-9 and RP-8 light distribution pattern types shall be as indicated on the drawings.

F. Incorporate associated ballasts and drivers within the luminaire housing.

G. Lenses shall be frame-mounted heat-resistant, borosilicate glass, prismatic refractors. Attach the frame to the luminaire housing by hinges or chain.

H. Pre-wire internal components to terminal strips at the factory.

I. Bracket mounted luminaries shall have leveling provisions and clamp type adjustable slip-fitters with locking screws.

J. Materials shall be rustproof. Latches and fittings shall be non-ferrous metal.

K. LED-based SSL luminaires shall be manufactured specifically for LED lamps with drivers integral to the luminaire housing.

2.5 LAMPS

A. Luminaires shall be listed for the lamp specified on the associated electrical plans. Install the proper lamps in every luminaire installed.

B. Lamps shall be clear or coated as recommended by luminaire manufacturer to provide for maximum luminaire efficiency in fixture used.

2.6 LED-BASED SOLID STATE DRIVERS

A. Shall be listed by either U.L. or equal listing agency and comply with IEEE C.62.41-1991, Class A operation.

B. Provide a minimum power factor of 0.9.

C. Minimum operating temperature appropriate for outdoor environments.

D. Shall operate at a frequency greater than or equal to 120Hz.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install lighting in accordance with the CEC, as shown on the drawings, and in accordance with manufacturer's recommendations.

B. Poles:
1. Provide pole foundations with galvanized steel anchor bolts, threaded at the top end and bent 1.57 rad 90 degrees at the bottom end. Provide galvanized nuts, washers, and ornamental covers for anchor bolts. Thoroughly compact backfill with compacting arranged to prevent pressure between conductor, jacket, or sheath and the end of conduit elbow. Adjust poles as necessary to provide a permanent vertical position with the bracket arm in proper position for luminaire location.
2. After the poles have been installed, shimmed and plumbed, grout the spaces between the pole bases and the concrete base with non-shrink concrete grout material. Provide a plastic or copper tube, of not less than 3/8" inside diameter, through the grout tight to the top of the concrete base for moisture weeping.
3. Attach pole base cover to pole flange with set screws.

C. Foundation Excavation: Depth shall be as indicated on drawings. Dig holes large enough to permit the proper use of tampers to the full depth of the hole. Place backfill in the hole in 6" maximum layers and thoroughly tamp. Place surplus earth around the pole in a conical shape and pack tightly to drain water away.

D. Photocell Switch Aiming (where applicable): Aim switch according to manufacturer's recommendations. Mount switch on or beside each luminaire when switch is provided in cast weatherproof aluminum housing with swivel arm or set adjustable window slide for proper footcandles photocell turn-on.

3.2 GROUNDING

A. Ground noncurrent-carrying parts of equipment including metal poles, luminaries, mounting arms, brackets, and metallic enclosures as specified in Section 26 0526, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS. Where copper grounding conductor is connected to a metal other than copper, provide specially treated or alloyed connectors suitable and listed for this purpose.

END OF SECTION

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SECTION 26 5670

LIGHTING ACCEPTANCE TESTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
   1. The Contractor shall be responsible for the Certificate of Acceptance, but coordinate with the Certified California Lighting Controls Test Technician to assure that all required documents have been filed with and approved by the enforcement agency prior to receiving a final occupancy permit. The Certificate of Acceptance will indicate that the Contractor has demonstrated acceptance requirements of the plans and specifications, that current requirements for installation certificates are met, and that currently required operating and maintenance information (as well as the Certificate of Acceptance) were provided to the building Owner.
   2. Testing, evaluation and calibration of lighting controls equipment provided, installed and connected in Division 26.
   3. Documentation of test results, completion of "Certificate of Acceptance" and "Certificate of Installation" forms and filing with the enforcement agency for approval.
   4. Specific Jobsite Conditions:
      a. Acceptance testing must be tailored for each specific design, job site, and climactic conditions. While the steps for conducting each test remain consistent, the application of the tests to a particular site may vary. The Contractor shall review the construction documents and include all required time, material, testing equipment, etc. as required to complete the requirements of this section.

B. Related Work:
   1. Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.
   2. Section 26 5100, INTERIOR LIGHTING.
   3. Section 26 5600, EXTERIOR LIGHTING.
   4. Section 26 0926, LIGHTING CONTROL SYSTEM.
   5. Section 26 0900, CONTROLS AND INSTRUMENTATION.

1.3 REFERENCES

A. Acceptance Testing Criteria: 2019 Building Energy Efficiency Standards Non-Residential Compliance Manual.

1.4 SYSTEM DESCRIPTION

A. Performance Requirements:
1. All material, equipment, labor and technical supervision to perform tests, calibrations and documentation specified herein.

B. Scope of Testing, Evaluation and Calibration (as applicable):
1. Automatic (master) time switches.
2. Occupancy sensors.
3. Automatic daylighting controls.
4. Photo electric sensors.
5. Daylighting controls.
6. Outdoor astronomical time switches.
7. Area controls.

1.5 SUBMITTALS

A. Submit in accordance with Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL.

B. Test Reports:
1. Written record of all tests and completion of forms included in this section.
2. At completion of project, assemble a final test report. Submit report to the enforcement agency and the Owner prior to final occupancy to include:
   a. Summary of project.
   b. Description of systems and equipment tested.
   c. Visual inspection report.
   d. Description of tests.
   e. Test results.
   f. Conclusions and recommendations.
3. Report shall be bound in booklet form, include on the Contractor's letterhead the title of the report and the systems tested.

C. Constructability Plan Review
1. The Contractor shall review the construction drawings and specifications to understand the scope of the acceptance tests and raise critical issues that might affect the success of the acceptance tests prior to starting construction. Any constructability issues associated with the lighting system should be forwarded to the design team for review/modifications prior to equipment procurement and installation. The Contractor shall submit on company letterhead, with the lighting control equipment required by Section 26 0500, COMMON WORK RESULTS FOR ELECTRICAL, 1.4B, a letter confirming that the constructability review has been completed and their company has reviewed and is prepared to complete the lighting acceptance testing required by this section.

PART 2 - PRODUCTS

2.1 FORMS

A. Lighting Installation forms and verification procedures for lighting systems that require acceptance testing can be downloaded from the following website: www.energy.ca.gov/2015publications/CEC-400-2015-033/appendices/forms/NRCI

B. Lighting Acceptance forms are to be provided by a Certified California Lighting Controls Acceptance Test Technician. The California Energy Commission adopted changes to the California building Efficiency Standards (Title 24, Parts 1 and 6) that require lighting controls and devices to be certified as properly installed and operational, prior to issuance of occupancy permits. All Acceptance Technicians must be employed by an Acceptance Test employer that provides support as well as quality control. Certified California Lighting Controls Acceptance Test Technicians can be found at the following website: www.calctp.org/acceptance-technicians/contractors

C. These completed forms will be the deliverable product to the enforcement agency and Owner as described in 1.4 of this section.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. Tests:
1. Contractor's Responsibilities:
   a. Perform all required tests required by this section.
   b. Schedule testing with building Owner.
   c. Provide Installation forms
   d. Acceptance forms provided by California Certified Lighting Controls Technician hired by Contractor.
   e. Calibration of equipment such as light meters, photo electric controls, etc.
   f. Programming of time switches (interior/exterior lighting) for operations as directed by the Owner.

3.2 ADJUSTING

A. Final Settings: The Contractor shall be responsible for implementing all final settings and adjustments on controls equipment as required for a complete and operating system.

END OF SECTION

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Section 27 0500
Common Work Results For Communications

REFER TO APPENDIX C FOR CITY CABLING STANDARDS SPECIFICATIONS

END OF SECTION

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Section 32 1416
Brick Unit Paving

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Brick Pavers

B. Brick Edge Band

C. Brick at Stairs

D. Brick at Site Walls

E. Accessories - Sealer and Paint at Stair Nosings

F. Sand Materials

G. Reinforcement.

H. Mixes

1.02 RELATED REQUIREMENTS

A. Section 09 9113 - Exterior Painting - Graffiti Guard at brick site walls and all vertical brick.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.

C. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

D. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2018.

E. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.

F. ASTM C902 - Standard Specification for Pedestrian and Light Traffic Paving Brick; 2015.

1.04 SUBMITTALS

A. See Section 5 for submittals procedures.

1.05 QUALITY ASSURANCE

A. Paver Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section with 5 years documented experience.

1.06 MOCK-UP

A. Install setting bed, brick pavers, curbs and border, and accessories to pattern indicated.

B. Size: 100 sq ft.

C. Mock-up may remain as part of the Work.

1.07 FIELD CONDITIONS

A. Do not install mortar when surrounding air or substrate surface temperature is below 50 degrees F prior to, during, and 48 hours after completion of work.

B. Do not install mortar when surrounding air or substrate surface temperature is above 90 degrees F during and 48 hours after completion of the work.

C. Do not install mortar when wind velocity exceeds 15 mph or relative humidity exceeds 50 percent.

D. At end of working day, or during rainy weather, cover work exposed to weather with waterproof coverings, securely anchored.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Brick Pavers:
   1. HC Muddox www.hcmuddox.com

2.02 BRICK PAVERS

A. Brick Paving Types 1-5
   1. Commercial Standard Brick (solid).
   2. Face Size: 3 3/4" x 8" inches.
   3. Thickness: 2 1/2 inches.
   4. Exposed Surface Texture: Wirecut.
   5. Edges: Square.
   6. Colors (Locations Indicated on Plans):
      a. Paving Type 1: Old Town Red
      b. Paving Type 2: Mountain Rose
      c. Paving Type 3: Dusty Rose
      d. Paving Type 4: Summer Wheat
      e. Paving Type 5: Sutter Gold

B. Brick Edge Band
   1. Commercial Standard Brick (solid).
   2. Face Size: 3 3/4 x 8" inches
   3. Thickness: 2 1/2 inches
   4. Exposed Surface Texture: Wirecut
   5. Edges: Square.
   6. Color: Ebony

C. Brick Paver at Stairs
   1. Commercial Standard Brick (solid).
   2. Face Size: 3 3/4" x 8" inches
   3. Thickness: 2 1/2 inches
   4. Exposed Surface Texture: Wire Cut
   5. Edges: Square.
   6. Color: Ebony (Nosing and Riser) and Mountain Rose (Cut bricks on tread)

D. Brick at Site Walls
   1. Commericial Standard Brick (solid)
   2. Face Size: 3 3/4" x 8" inches.
   3. Thickness: 2 1/2 inches.
   4. Exposed Surface Texture: Smooth/Wirecut depending on face used
   5. Edges: Square.
   6. Color: Spanish Moss

2.03 ACCESSORIES

A. Brick Paving Sealer
   1. Prosoco "Satin Guard WB" or approved equal.

B. Brick Stair Nosing Paint
   1. Anti-slip urethane coating
   2. Product: Tuff Grip Extreme Aggressive Action Non-Skid Floor Paint
   3. Color: Sand
   4. Options: Tuff Grip Corsslinker urethane activator
   5. Submit samples for approval

2.04 SAN MATERIALS

A. Sand for Setting Bed: Clean washed concrete sand, free of fines, complying with gradation requirements of ASTM C33/C33M for fine aggregates.

B. Polymeric Sand: Fine sand complying with ASTM C144 combined with polymer binders for creating semi-solid joints between pavers.
   1. Color: Tan.

C. REINFORCEMENT
   1. Masonry Tie: Wire-Bond Dovetail Corrugated Tie, galvanized steel.

D. MIXES
   1. Mortar Setting Bed and Joint

2. Joint Mortar: Type S Portland cement mix complying with the following:
   a. Compressive Strength (28 day): 3000 psi.
   b. Slump: 1 to 2 inches.
   c. Air Entrained: 5 to 7 percent.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify substrate is ready to support pavers and imposed loads.

B. Verify gradients and elevations of substrate are correct.

C. Verify dry weather forecast without rain for a minimum of 24 hours with temperatures above 55 degrees Fahrenheit.

D. Verify that pavers are completely dry prior to polymeric sand installation.

3.02 INSTALLATION - SAND SETTING BED

A. Spread sand evenly over prepared substrate surface to a nominal thickness of 1-1/2 inches.

B. Dampen and roller compact sand to level surface.

C. Screed and scarify top 1/2 inch of sand.

D. Place paver units in herringbone pattern, from straight reference line.

E. Place half units or special shaped units at edges and interruptions. Maintain tight joints. Machine saw partial units.

F. Sprinkle sand over surface and sweep into joints. Moisten joints and recover with additional sand until firm joints are achieved. Remove excess sand.

G. Tamp and level paver units with mechanical plate vibrator until units are firmly bedded, level, and to correct elevation and slope gradient.

3.03 CLEANING

A. Do not clean pavers until pavers and mortar are dry.

B. Clean soiled surfaces using cleaning solution. Do not harm pavers, joint materials, or adjacent surfaces.

C. Use non-metallic tools in cleaning operations.

D. Rinse surfaces with clean water.

E. Broom clean paving surfaces. Dispose of excess sand.

3.04 PROTECTION

A. Do not permit traffic over unprotected paver surface.

B. Do not permit traffic for 48 hours after pavement placement.

3.05 MAINTENANCE

A. See Section 01 7000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

END OF SECTION

APPENDIX C – CITY COMMUNICATIONS CABLING SPECIFICATIONS

SECTION 17010
COMMON WORK RESULTS FOR COMMUNICATIONS

PART 1 GENERAL

1.1 SUMMARY:

A. Section includes, but is not necessarily limited to:
   1. Common standards and procedures for the Communications Work.
   2. Design, engineer and provide complete, all means of support, suspension, attachment, fastening, bracing, and restraint (hereinafter "support") of the Communications Systems. Provide engineering of such support by parties licensed to perform work of this type in the Project jurisdiction.

B. Provisions of this Section apply to Communications Work, including the following Sections:
   1. Section 17026 - Grounding and Bonding for Communications Systems
   2. Section 17029 - Hangers and Supports for Communications Systems
   3. Section 17033 - Conduits and Backboxes for Communications Systems
   4. Section 17036 - Cable Trays for Communications Systems
   5. Section 17039 - Surface Raceways for Communications Systems
   6. Section 17053 - Identification for Communications Systems
   7. Section 17100 - Structured Cabling, Basic Materials and Methods
   8. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures
   9. Section 17119 - Communications Termination Blocks and Patch Panels
   10. Section 17123 - Communications Cable Management
   11. Section 17126 - Communications rack Mounted Power Protection and Power Strips
   12. Section 17130 - Communications Indoor Backbone Cabling
   13. Section 17150 - Communications Horizontal Cabling

1.2 REFERENCES:

A. Usage: In accordance with Section 01110 – Summary of Work.

B. American National Standards Institute (ANSI)
   1. ANSI/TIA/EIA-568-B.1-200l, Commercial Building Telecommunications Cabling Standard – Part l: General Requirements
   2. ANSI/TIA/EIA-568-B.2-200l, Commercial Building Telecommunications Cabling Standard - Part2: Balanced Twisted Pair Cabling Components
   3. ANSI/TIA/EIA-568-B.3-2000, Optical Fiber Cabling Components Standard
   4. ANSI/TIAIEIA-606-A-2002, Administration Standard for Commercial Telecommunications Infrastructure

1.3 DEFINITIONS

A. General Abbreviations used in these specifications. Refer additionally to the abbreviations list appearing on the Drawings.
   1. ADA Americans With Disabilities Act
   2. AFC Above Finished Ceiling
   3. AFF Above Finished Floor

4. BDF Building Distribution Facility
5. BICSI Building Industry Consulting Service International
6. BLDG Building
7. CAT Category
8. CD Campus Distributor
9. CL Centerline
10. DIY Division
11. (E) Existing
12. EF Entrance Facility
13. ER Equipment Room
14. FBO Furnished By Owner
15. FD Floor Distributor
16. HR Home Run
17. ID Inside Diameter
18. LAN Local Area Network
19. MAX Maximum
20. (N) New
21. NIC Not In Contract
22. OD Outside Diameter
23. OFE Owner Furnished Equipment
24. PSRH Project Standard Receptacle Height
25. PSSH Project Standard Switch Height
26. TR Telecommunications Room
27. TVP Typical
28. UON Unless Otherwise Noted.

B. Reference to Named Products.
   1. Selected Item: Item so noted was selected based on comparative testing of similar products. Procedure for determination of equivalence is noted in the specification for the item(s).
   2. System Design Basis: Item so noted interacts with other system items to produce total system function. Substitution of this item may require coordinated substitution of other system items.
   3. Design Basis: Item so noted was used as basis for system drawings to establish features, size, etc. Use of specified equivalents may require adjustment of physical layout or wiring, but does not affect system function. No preference is implied.

1.4 SUBMITTALS

A. Comply with Section 01300 - Administrative Requirements and the following:
   1. Submit all materials for review arranged in same order as Specifications, individually referenced to Specification Section, Paragraph and Contract Drawing number. Conform in every detail as applies to each referencing Section.
   2. Submit 8 ½ "x 11" items bound in volumes and drawings in edge bound sets. Submit all drawings on sheets of the same size.

3. Make each specified submittal as a coordinated package complete with all information specified herein. Incomplete or uncoordinated submittals will be returned with no review action.
4. Progress Schedule: Comply with 01300 - Administrative Requirements.

B. Manufacturer's Product Data:
1. Manufacturer's Product Data Sheets. Collate in sequence of List of Materials:
2. Data sheet for each item in each Communications Section, including all accessories, clearly marked for proposed product.
3. Material Safety Data Sheet, where applies.
4. List of Materials Schedule. For each item, include:
   a. Referencing Specification Section
   b. Referencing Paragraph
   c. Referencing Drawing, if specified only on plans
   d. Manufacturer
   e. Model number
   f. Listing, including name of Nationally Recognized Testing Laboratory.
   g. Precede each submittal book with a summary schedule, with columns for each item above and rows for each item submitted.
      i. Example:

Specification Section	Paragraph	Contract Drawing Reference	Manufacturer	Model No.	UL Listed/ ETL Verified
17010	2.03C		XYZ	123	Y
17150	2.07Al		AAA	34-56	Y
		T4.2	ZZY	456	Y

1.5 QUALITY ASSURANCE

A. Procedures: In accordance with Section 01400 - Quality Requirements.

B. Contractor may design data and voice cabling and subcontract the installation to another contractor or perform both design and installation. In either case, all contractors must meet the qualifications for any portion of the work they perform.

C. Qualifications for contractors who perform DESIGN work:
1. Any person who designs any data or voice cabling for this project must be a BICSI Registered Communication Distribution Designer (RCDD®) and a full-time employee of Contractor. Two (2) copies of RCDD certification(s) must be submitted during the pre-construction meeting.
2. Any person who designs any data or voice cabling for this project shall be thoroughly familiar with the cabling methods set forth in the latest release of the BICSI Telecommunications Distribution Methods Manuals (TDMM), latest edition.
3. Contractor shall submit two (2) copies of documentation of at least five (5) years experience in design of structured cabling systems during the pre-construction meeting.
4. Contractor shall submit two (2) copies of a written list of completed projects equivalent in size and complexity to this project, with a reference name, title,

company, address, and telephone number for each during the pre-construction meeting.

D. Qualifications for contractors who perform INSTALLATION work:
   1. Contractor must have at least one person acting as project manager/engineer for this project who is both a BICSI RCDD and a full-time employee of Contractor. Two (2) copies of RCDD certification(s) must be submitted during the pre-construction meeting.
   2. Contractor shall be thoroughly familiar with the cabling methods set forth in the BICSI TDMM, latest edition, and unless otherwise specified, shall supervise the installation in accordance with the recommendations and practices outlined in the BICSI TDMM, latest edition.
   3. Contractor shall be an approved Ortronics Certified Installer or Berk-Tek Certified OASIS Integrator. The Telecommunications contractor is responsible for workmanship and installation practices in accordance with the Ortronics CI/CIP Program and Berk-Tek OASIS Program.
   4. Contractor shall submit during the pre-construction meeting two (2) copies of documentation of at least five (5) years experience in installation and maintenance of structured cabling systems.
   5. Contractor shall submit during the pre-construction meeting two (2) copies of a written list of completed projects equivalent in size and complexity to this project, with a reference name, title, company, address, and telephone number for each.
   6. During the pre-construction-meeting, Contractor shall submit two (2) copies of a written list of qualified technicians assigned to this project, including relevant manufacturer training programs and years of related experience completed by each. At least 30 percent of the copper installation and termination crew must be certified by Berk-Tek and Ortronics or by BICSI at the Technician level. At least 20 percent of the optical fiber installation and termination crew must be certified by Berk-Tek and Ortronics or other industry-recognized organizations in optical fiber installation and testing.

E. Structured Cabling System shall qualify for an Ortronics NetClear GT2 25-year manufacturer warranty. Contractor shall responsible for the following:
   1. Register project for warranty PRIOR to the start of installation in conformance with Ortronics warranty requirements.
   2. Submit final Bill of Materials and certified test results to Ortronics within (5) business days of completing installation and certification testing.
   3. Deliver warranty confirmation letter and certificate to Owner's representative.

F. Test Plan
   1. Provide a complete and detailed test plan for the Telecommunications cabling system including a complete list of test equipment for the UTP and optical fiber components and accessories ten (10) business days prior to the proposed test date. Include procedures for certification, validation, and testing.

G. Designated Supervisor

1. Provide a designated supervisor present and in responsible charge in the fabrication shop and on the project site during all phases of installation and testing of the Work of this section. This supervisor shall be the same individual throughout the execution of the Work unless illness, loss of personnel, or other circumstances reasonably beyond the control of Contractor intervene.

H. Reference Documents: At all times when the work is in progress, maintain at the workplace, fabrication shop or Project Site as applies.
   1. A complete set of the latest stamped, actioned submittals of record.

I. Test Equipment
   1. Requirements:
      a. Maintain and operate test equipment at the fabrication shop and the job site for both routine and Certification Testing of the Work of this section.
      b. Maintain test equipment at the job site while testing is in progress from installation of equipment racks until Owner Acceptance of this Work; thereafter remove all of this test equipment from the job site.
      c. Unless otherwise indicated, test equipment shall remain property of Contractor.
      d. Provide all required test cables and adapters.
         a. Provide equipment with traceable calibration, with calibration date not greater than one (1) year prior to the date of the use of the equipment to perform the specified testing.
   2. Equipment: Specified in individual Sections.

J. Standard Products
   1. Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period. Where two or more items of the same class of equipment are required, these items shall be products of a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in this section.
      a. Alternative Qualifications. Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.
   2. Material and Equipment Manufacturing Date.
      a. Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

1.6 REGULATORY REQUIREMENTS

A. Regulations Applicable: Including but not limited to those defined in Section 01110 - Summary of Work.
   1. Nothing in the Contract Documents shall be construed to permit Work not conforming to applicable laws, ordinances, rules, or regulations.
   2. Safety Agency Listing: All devices provided under the Work of this Section which are connected to the Project electrical system shall be listed by a Nationally Recognized Testing Laboratory, and shall be so labeled.
   3. In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Owner's Representative. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.

1.7 DELIVERY. STORAGE, AND HANDLING

A. Procedures:
   1. In accordance with Section 01600 - Product Requirements and as specified in the individual sections of Division 17.

B. General
   1. Provide protection from weather, moisture, extreme heat and cold, dirt, dust, and other contaminants for Telecommunications cabling and equipment placed in storage.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Connecting hardware shall be rated for operation under ambient conditions of 32 to 140 degrees F and in the range of 0 to 95 percent relative humidity, non-condensing.

1.9 SEQUENCING

A. Comply with Section 01110 - Summary of Work, 01300 - Administrative Requirements, and the following:
   1. Sequence.
      a. Within (10) days of issuance of the Notice to Proceed, Owner’s Representative will provide the Contractor copies of the Contract Drawings showing station outlets with final Owner assigned backbone cable and horizontal jack and cable ID numbers.
      b. Reproduceables, as applies:
         i. 1 set of reproducible bond.
         ii. CAD files: 1 set
      c. Contractor shall use drawings provided in executing the work of the Project.

1.10 OPERATING AND MAINTENANCE DATA

A. Commercial off the shelf manuals shall be furnished for operation, installation, configuration, and maintenance of products provided as a part of the Telecommunications cabling and pathway system.

1. Submit operations and maintenance data in accordance with Section 01770 - Closeout Procedures and as specified herein not later than 2 months prior to the date of beneficial occupancy.

1.11 PROJECT RECORD DOCUMENTS

A. Comply with Section 01770 - Closeout Procedures, and the following:
   1. Record Drawings
      a. CAD.
         i. Use a Computer Aided Drafting (CAD) system in the preparation of record drawings for this Project. CAD system shall produce files in AutoCAD® .DWG format, latest version at time of bid.
      b. Except where prohibited by Contract, Owner's Representative will furnish CAD backgrounds in AutoCAD® .DWG format, latest version at time of bid, for use by the Contractor in preparing Record Drawings.
      c. CD copy of Record Drawings: Provide 2 separate disc copies of each drawing file in the format noted above. Submit of CD-R disk.

1.12 WARRANTY SERVICE

A. In addition to provisions of 01780 - Warranties, provide the following:
   1. Response Time: Provide a qualified technician familiar with the work at the Project Site within 24 hours after receipt of a notice of malfunction. Provide the Owner's Representative with telephone number attended 8 hours a day, 5 days a week, to be called in the event of a malfunction.

B. Provide all additional Warranties as defined in each Communication Systems Section.

1.13 ACCEPTANCE REVIEW AND TESTING PROCEDURES

A. Complete all Work of this section. Submit Test Report. Submit review copies of Operating and Maintenance Manuals, less reduced set of Record Drawings. Notify the Owner's Representative in writing that the Work of these Sections is complete and fully complies with the Contract Documents. Request Acceptance Review and Testing. The Owner's Representative will conduct Verification of Submitted Test Data, and otherwise direct testing and adjustment of this Work. These procedures may be performed at any hour of the day or night as required by the Owner's Representative to comply with the project schedule and avoid conflict with residents. Provide all specified personnel and equipment at any time without claim for additional cost or time.

B. Personnel: Provide services of the designated supervisor and additional technicians familiar with work of this section. Provide quantity of technicians as required to comply with project schedule.

C. In Addition, provide:
   1. All tools appropriate for performance of adjustment of and corrections to this Work. Include spare cable and connectors and specified tooling for application.
   2. Ladders, scaffolding and/or lifts as required to access high devices.
   3. All test equipment.

4. Complete set of latest stamped, actioned submittals of record for reference.
5. Complete set of manufacturer test reports.
6. Complete set of manufacturer's original operation, instruction and service manuals for each equipment item for reference.
    a. Demonstrate: Complete operation of all systems and equipment, including portable equipment.
    b. Adjust: As directed by the Owner's Representative.
    c. Correct: In timely manner, failure to comply with the Contract Documents, as reasonably determined by the Owner's Representative.

D. Temporary Equipment: Provide and operate, without claim for additional cost or time, temporary equipment and/or systems to provide reasonably equivalent function, as determined by the Owner's Representative, in place of the Work of this section which is incomplete or found not in conformance with the Contract Documents as of ten (10) business days prior to the scheduled completion date. Provide such temporary equipment until Acceptance of the Work of this section. Thereafter, remove such temporary equipment.

1.14 CLOSEOUT

A. Punch List: Perform any and all remedial work, at no claim for additional cost or time. Where required, re-test and re-submit certification test report(s). Notify the Owner's Representative of completion of Punch List.

B. Portable Equipment: Furnish all portable equipment and spares to the Owner's Representative, along with complete documentation of the materials presented. Where applicable, furnish portable equipment in the original manufacturer's packing.

C. Operating and Maintenance Data: Install framed operating and maintenance instructions. Submit manuals.

D. Project Record Documents: Submit print and digital copies. Digital files shall be in CAD system shall produce files in AutoCAD® .DWG format, latest version at time of bid.

E. Keys: If applicable, replace construction locks with permanent locks. Provide five (5) sets of keys to the Owner's Representative.

F. Training: Conduct specified training.

G. Warranty: Submit Contractor and Manufacturer Warranties dated to run from date of Acceptance of the Work of this section.

PART 2 PRODUCTS

2.1 GENERAL

A. Where a particular material, device, piece of equipment or system is specified directly, the current manufacturer's specification for the same shall be considered to be a part of these specifications, as if completely contained herein in every detail.

B. Each material, device or piece of equipment shall comply with all of the manufacturer's current published specifications for that item.

C. Products shall be made by manufacturers regularly engaged in the production of such products.

D. Provide quantity as shown on Contract Drawings, or as otherwise indicated.
E. Provide all auxiliary and incidental materials and equipment necessary for the operation and protection of the Work of this section as if specified in full herein.
F. Unless recycled content is specified, provide new materials.
G. Provide the manufacturer's latest design/model, permanently labeled with the manufacturer's name, model number and serial number.
H. Where products are of similar type or use, provide products of the same manufacturer, unless otherwise indicated.
I. Components:
    1. UL or third party certified. Cabling and interconnecting hardware and components for Telecommunications systems shall be UL listed or third party independent testing laboratory certified, and shall comply with NFPA 70 and conform to the requirements specified herein.
    2. Where equipment or materials are specified to conform to industry and technical society reference standards of the organizations, submit proof of such compliance.
        a. The label or listing by the specified organization will be acceptable evidence of compliance.
        b. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Owner's Representative.
        c. The certificate shall state that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.
J. Enclosures:
    1. Provide steel frames and enclosures designed and wired to eliminate all induced currents.
    2. Make bolted connections with self-locking devices.
K. Finishes: Any item or component of the Work of this section which is visible shall comply with the following:
    1. Finishes noted or scheduled on the Contract Drawings take precedence.
    2. Where design location requires that products, materials or equipment are visible to the public, no manufacturer's logos larger than 1/2 inch shall be visible. Unless otherwise noted or directed, neatly remove or permanently paint out such logos.
    3. Where finishes are not noted or otherwise defined in the Contract Documents, submit manufacturer's standard finish samples for selection by the Owner's Representative.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine existing conditions before starting work. Document conflicts in writing and submit to Owner’s Representative in a timely manner for resolution.

3.2 WIRING CLASSIFICATION AND RELATED

A. Audio Signal Wiring Classification:
   1. Type A-1: Microphone level wiring less than -30 dBu, 20 Hz to 20 kHz.
   2. Type A-2: Line level wiring -30 dBu to +24 dBu, 20 Hz to 20 kHz.
   3. Type A-3: Loudspeaker level or circuit wiring greater than +24 dBu, from 20 Hz to 20 kHz.

B. Video and Related Signal Wiring Classification:
   1. Type V-1: Baseband and composite video wiring I volt peak-to-peak into 75 ohms, 0 to 10.0 MHz.
   2. Type V-2: Synchronization and switching pulse wiring 4 volts peak-to-peak into 75 ohms, 15.62 to 15.75 kHz.
   3. Type V-3: Color subcarrier wiring 0 to 4 volts peak-to-peak into 75 ohms, 3.57 to 4.43 MHz.
   4. Type V-4: MATV system wiring 0.1 to 1000 microVolts peak-to-peak into 50 or 75 ohms, 47 to 890 MHz.

C. Control Signal Wiring Classifications:
   1. Type C-1: DC control wiring 0 to 50 volts.
   2. Type C-2: Synchronous control or data wiring 0 to 40 volts, peak-to-peak.
   3. Type C-3: AC control wiring 0 to 48 volts, 60 Hz.

D. Additional Wiring Classifications:
   1. Type M-1: DC power wiring 0 to 48 volts.
   2. Type M-2: AC power wiring greater than 50 volts, 60 Hz.
   3. Wiring Combinations.

E. Except as indicated herein, conduit, wireways and cable bundles shall contain only wiring of a single classification. The following combinations are acceptable in conduit, or cable harnesses. Additional acceptable combinations may be indicated on the Drawings.
   1. Types A-1, C-1, and M-1.
   2. Types A-2, C-1, C-2, and M-1, runs less than 20 feet.
   3. Types A-2, C-1, and M-1.
   4. Types A-3, C-1, C-2, and M-1.
   5. Types A-2, V-1, and V-3.
   6. Types V-1, V-2, V-3, and C-1.
   7. Types M-2 and C-3.

3.3 PREPARATION

A. Prepare and sequence the work to minimize disruption to each room environment and existing communications systems.

B. Protection: Cover all computers, electronic equipment, desks, chairs, furniture and other articles when working at ceiling level and/or performing dust producing tasks.

3.4 REPAIR AND RESTORATION

A. Where working in spaces occupied by the Owner, return to their original positions any furniture or articles relocated to perform the work.

3.5 CLEANING

A. Where working in spaces occupied by the Owner:
   1. Immediately after completing work within each space, clean up and remove all materials, scrap and dust.

2. All scrap material in work area shall be picked up and removed from the building at the end of each day. See also Section 01770 - Closeout Procedures for additional requirements.
3. All dust resulting from work performed shall be vacuumed up daily.
4. All scrap material shall be removed from site and disposed of in an authorized disposal site. Refer to Section 01565 - Site Waste Management Program.

END OF SECTION

SECTION 17026
GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Section includes grounding and bonding of Communications Work, including but not limited to:
   1. Communications Race
   2. Cable Runway
   3. Cable Shields
   4. Protector Fields
   5. Communications cabinets and enclosures.

1.2 RELATED WORK UNDER OTHER SECTIONS

A. Section 07840 - Firestopping
B. Section 16400 - Service and Distribution System
C. Section 17010 - Common Work Results for Communications
D. Section 17029 - Hangers and Supports for Communications Systems
E. Section 17033 - Conduits and Backboxes for Communications Systems
F. Section 17036 - Cable Trays for Communications Systems Communications Systems
G. Section 17100 - Structured Cabling, Basic Materials and Methods
H. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures
I. Section 17119 - Communications Termination Blocks and Patch Panels
J. Section 17123 - Communications Cable Management
K. Section 17150 - Communications Horizontal Cabling

1.3 SYSTEM DESCRIPTION

A. Provide telecommunications system grounding conductor as described herein and indicate on drawings.
B. Except as otherwise indicated, the complete communications installation including the, metallic conduits and raceways, cable trays, boxes, cabinets and equipment shall be completely and effectively grounded in accordance with all code requirements, whether or not such connections are specifically shown or specified.
C. Resistance:
   1. Resistance from the farthest ground bus through the ground electrode to earth shall not exceed 5 Ohms or the requirements of ANSI-J-STD-607-A-2002, whichever is more restrictive.

1.4 REFERENCES

A. American National Standards Institute (ANSI)
   1. ANSI/TIAIEIA-606-A-2002 Administration Standard for Commercial Telecommunications Infrastructure
   2. ANSI-J-STD-607-A-2002 Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
   3. Underwriters Laboratories (UL)
   4. UL 467 (1993); R 2004 Grounding and Bonding Equipment

1.5 SUBMITTALS

A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 Common Work Results for Communications.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Equal products by the following manufacturers will be considered providing that all features of the specified product are provided:
   1. Ground Rod:
      a. High strength high carbon steel, with electrolytically bonded jacket of copper on surface.
      b. UL spec. 467
      c. ANSI C-33.8-10n.
      d. Manufacturer:
         i. Allied Bolt
         ii. Inwesco 12A60
         iii. Blackburn
         iv. Cooper Power Systems
         v. Weaver.
         vi. Erico "Cadweld" Products, Inc.
         vii. ITT Blackburn.
         viii. Or equal.
   2. Ground Wells:
      a. Christy Concrete Products, Inc.
      b. Forni Corp.
      c. Or equal.
   3. Ground Bushings, Connectors, Jumpers and Bus:
      a. O-Z/Gedney.
      b. Thomas & Betts Corp.
      c. Or equal.
   4. Compression Connector Lug
      a. Panduit
      b. B-Line SB-479 Series
      c. Thomas & Betts
      d. Or equal.
   5. Telecommunications Ground Bus Bar
      a. CPI
      b. B-Line
      c. Panduit
      d. Or equal.
   6. Bonding Ribbon:
      a. Annealed solid copper 3/8 inch wide x 1/16 inch thick, tin plated.
      b. Manufacturer:
         i. Inwesco 12A55
         ii. Corning Cable Systems

iii. Preformed Line Products.
iv. Or equal.

7. Bonding Ribbon Clamp:
   a. Soft lead
   b. 1/16 inch thick
   c. Bolt hole for attachment
   d. Manufacturer:
      i. Inwesco 12A56
      ii. Corning Cable Systems
      iii. Preformed Line Products.
      iv. Or equal.
8. Fargo Clamp:
   a. Cast copper, silver plated, furnished with copper bolt.
   b. RUS Listed
   c. Manufacturer:
      i. Allied Bolt
      ii. Inwesco 12A57
      iii. Corning Cable Systems
      iv. or equal.
9. Ground Inserts:
   a. Cast Bronze w 1/4 Copper Rod.
   b. Provide minimum one each maintenance hole or vault.
   c. Manufacturer:
      i. Inwesco 12H69
      ii. Or equal by vault or manhole manufacturer.
      iii. Or equal.

2.2 GROUND CONDUCTORS

A. General purpose insulated: UL listed and code sized copper conductor, with dual rated THHN/THWN insulation, color identified green. Where continuous colorcoded conductors are not commercially available, provide a minimum 4" long color band with green, non-aging, plastic tape in accordance with NEC.

B. Bonding pigtails: Insulated copper conductor, identified green, sized per code, and provided with termination screw or lug. Provide solid conductors for #10 A WG or smaller and stranded conductors for #8 A WG or larger.

2.3 COMPRESSION CONNECTOR LUG

A. Description
   1. Connector lug with compression connection to conductor.
   2. Copper alloy body.
   3. Provide lug size to match conductor being terminated.
   4. Provide 2 hole pattern lugs.
   5. Provide each lug with silicon bronze hardware, including 2 bolts, 2 split lock washers and 2 nuts.

2.4 INSULATED GROUNDING BUSHINGS

A. Plated malleable iron or steel body with 150 degree Centigrade molded plastic insulating throat and lay-in grounding lug.

2.5 CONNECTIONS TO PIPE

A. For cable to pipe: UL listed bolted connection complying with CEC requirements.

2.6 CONNECTIONS TO STRUCTURAL STEEL, GROUND RODS, OR SPLICES

A. Where required by the Drawings or Specifications, grounding conductors shall be spliced together, connected to ground rods or connected to structural steel using exothermic welds or high pressure compression type connectors.
   1. Exothermic welds shall be used for cable-to-cable and cable-to-ground rod and for cable to structural steel surfaces. Exothermic weld kits shall be as manufactured by Cadweld, Thermoweld or equal. Each particular type of weld shall use a kit unique to that type of weld.
   2. High-pressure compression type connectors shall be used for cable-to-cable and cable-to-ground rod connections. Connections shall be as manufactured by Thomas & Betts #53000 series, Burndy "Hy-Ground" or equal.

2.7 EXTRA FLEXIBLE, FLAT BONDING JUMPERS

A. Where required by the drawing or specified herein.

PART 3 EXECUTION

3.1 GENERAL

A. Provide Grounding and Bonding according to the most restrictive requirements of:
   1. ANSI-J-STD-607-A.
   2. California Electrical Code Article 250 and references therein.
   3. California Electrical Code Article 800.

B. In the event of conflicting requirements, National Electrical Code requirements shall prevail.

C. Point of Connection
   1. Under Work of this Section, make connections to Communications Ground Busbars provided under Work of Section 16061 Grounding.
   2. Mechanical Connections

D. Make connections bare metal to bare metal.
   1. Where required, remove paint to bare metal, make grounding or bonding connection, and touch up paint.
   2. Torque threaded fasteners to manufacturer's recommended values.

E. Compression Connections
   1. Make compression connections with the lug or fitting manufacturer's recommended tooling, with the tooling set to the recommended force and stroke.

F. Communications Raceways and Sleeves
   1. Bond metallic raceway and sleeves to the Communications Ground Busbar at the Communications Room that serves the related Communications Receptacle.
   2. Where a metallic raceway connects 2 or more Communications Rooms, bond to the Communications Ground Busbar at each.

G. Cable Tray and Cable Runway

1. Coordinate with the Work of Section 17033 - Communications Raceways, Boxes and Fittings, paragraph Cable Runway.
2. Provide manufacturer's bonding clips, plates or jumpers as required to comply with the UL Classified conditions for use as an equipment grounding conductor.
3. Bond the Cable Runway to the Communications Ground Busbar at the Communications Room served.

H. Cable Shields
1. Comply with California Electrical Code Article 800.

I. Protector Fields
1. Comply with California Electrical Code Article 800.

J. Communications cabinets and enclosures
1. Bond to the Communications Ground Busbar at the Communications Room.

K. Emergency/Information Telephone enclosures
1. Bond as detailed on Communications Drawings.

L. Communications Broadband Systems
1. Comply with California Electrical Code Article 820.
2. Ground Broadband passives as shown on Communications Drawings.

3.2 LABELING

A. Provide labeling according to the requirements of:
1. ANSI/TIA/EIA-606-A.
2. Section 17053 Identification for Communications Systems.

END OF SECTION

SECTION 17029
HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK:

A. The work covered under this section consists of the furnishing of all necessary labor, supervision, materials, equipment, and services to completely execute the provision of communications supports and cable hook system as described in this specification, including but not limited to:
   1. Strut Supports
   2. Cable Hooks (J-Hooks)
   3. Beam Clamps
   4. Concrete Fasteners
   5. Touch-Up Materials
   6. Conduit Supports
   7. Equipment Supports
   8. Fastening Hardware

B. Related work: Consult all other Sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.
   1. Section 03300 - Cast-in-place Concrete. Concrete equipment pads.
   2. Division 5: Metals. Hangers for electrical equipment.
   3. Section 09260 - Gypsum Board Assemblies, Section 09510 - Acoustical Ceilings, Section 09512 - Manufactured Wood Ceilings, and Section 09520- Textile Ceiling System. Slack Fixture support wires.
   4. Section 17010 - Common Work Results for Communications
   5. Section 17026 - Grounding and Bonding for Communications Systems
   6. Section 17033 - Conduits and Backboxes for Communications Systems
   7. Section 17036 - Cable Trays for Communications Systems
   8. Section 17053 - Identification for Communications Systems
   9. Section 17100 - Structured Cabling, Basic Materials and Methods
   10. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures
   11. Section 17123 - Communications Cable Management
   12. Section 17150 - Communications Horizontal Cabling

1.2 SYSTEM DESCRIPTION

A. Provide devices specified in this Section and related Sections for support of communications equipment specified for this Project.

B. Provide support systems that are adequate for the weight of equipment, conduit and wiring to be supported.

1.3 REFERENCES

A. American Society For Testing and Materials (ASTM)

1. ASTM AI23/AI23M-02 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
2. ASTM AI53/AI53M-04 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
3. ASTM B633-98el Specification for Electro-deposited Coatings of Zinc on Iron and Steel.
4. ASTM A653/A653M-04a Standard Specification for Steel Sheet, ZincCoated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the HotDip Process.

B. American National Standards Institute (ANSI)
1. ANSI/TIA/EIA-568-B.l-2001, Commercial Building Telecommunications Cabling Standard – Part l: General Requirement.
2. ANSI/TIA/EIA-568-B.2-2001, Commercial Building Telecommunications Cabling Standard – Part 2: Balanced Twisted Pair Cabling Components.
3. ANSI/TIA/EIA-568-B.3;-2000, Optical Fiber Cabling Components Standard.
4. ANSI/ TIA/ EIA 569-B-2003, Commercial Building Standard for Telecommunications Pathways and Spaces.

C. National Fire Protection Association
1. NFPA 70, National Electrical Code

1.4 SUBMITTALS

A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 QUALITY ASSURANCE

A. All materials, equipment and parts comprising the units specified herein shall be new and unused, and of current manufacturer.

B. Cable hooks shall be listed and labeled by Underwriters Laboratories (UL) as required.

C. Cable hooks shall have the manufacturers name and part number stamped in the part itself for identification.

PART 2 PRODUCTS

2.1 SUPPORTING DEVICES

A. General
1. Supports to be sized to suit load and selected to match mounting conditions.

B. Manufacturers
2. Equal products by the following manufacturers will be considered providing that all features of the specified product are provided:
   a. Concrete fasteners:
      i. Phillips “Red-Head”
      ii. Remington
      iii. Ramset
      iv. Hilti
      v. Simpson Strong-Tie
      vi. Or Equal

b. Concrete inserts and construction channel:
   i. Unistrut Corp.
   ii. GS Metals “Globe Strut”
   iii. Thomas & Betts “Kindorf” Corp.
   iv. Or Equal
c. Conduit Straps:
   i. O-Z/Gedney
   ii. Erico “Caddy” Fastening Products
   iii. Thomas & Betts “Kindorf” Corp.
   iv. Or Equal
d. Beam Clamps
   i. Cooper B-Line
   ii. SuperStrut
   iii. Unistrut
   iv. Or Equal
e. Aircraft Cable Sway Braces
   i. Mason Industries
   ii. M.W. Sausse/Vibrex
   iii. Loos & Company, Inc.
   iv. Or Equal

C. Concrete Fasteners
   1. Provide expansion- type concrete anchors.
   2. Provide powder driven concrete fasteners with washers. Obtain approval from Owner's Representative prior to use.

D. Concrete Inserts
   1. Provide pressed galvanized steel, concrete spot insert, with oval slot capable of accepting square or rectangular support nuts of ¼ inch to ½ inch diameter thread for rod support.

E. Aircraft cable sway braces
   1. Steel rope sized to meet load.

F. Construction Channel
   1. Construction:
      a. 1-5/8” square galvanized channel formed from U.S.S.G No. 12 or 0.109 inch cold formed steel with 17/32-inch diameter bolt holes, and 1-1/2” on center in the base of the channel.
      b. 10 foot sections.
   2. All supporting materials by same manufacturer.

G. Beam Clamps
   1. Malleable iron electro-galvanized steel beam clamps selected to match building structural steel members.

H. Conduit Straps
   1. One hole strap, steel or malleable iron, with malleable iron clamp-back spacer for surface mounted wall and ceiling applications.
      a. Use malleable strap with spacers for exterior and wet locations.
      b. Use steel strap without spacers for interior locations.

2. Steel channel conduit strap for support from construction channel.
3. Steel conduit hanger for pendant support with threaded rod.
4. Steel wire conduit support strap for support from independent #12 gauge hanger wires.

I. Threaded rods, couplings, screws, and nuts:
1. Electrolytically coated with zinc, 2 oz. zinc per square foot of surface, ASTM A123 or A153.

J. Miscellaneous Parts
1. Hot dipped galvanized after fabrication; after cutting, de-burring and hole drilling. Coated with zinc, 2 oz. zinc per square foot of surface, ASTM Al23 or A153.

K. Paint/Tape for Touch-up:
1. Zinc: CRC "Zinc-It", Glyptal, Enterprise Galvanizing "Galambra", or equal.

2.2 CABLE HANGERS

A. Ceiling Hung J-Hooks
1. Drawing Reference(s):
   a. WMJ
   b. ACJ
2. Features/Functions/Construction
   a. Specifically intended to carry the load of up to 50 communications cables without applying excess forces to cables at bottom of bundle.
   b. Integral broad bottom edge to spread cable load with flat bottom and provide a minimum of 1-5/8” cable bearing surface.
   c. Integral hanger rod attachment hardware at top.
   d. Load rated for application.
   e. Incorporates smooth 90-degree radiused edges to prevent snagging cable jackets on installation.
   f. Designed so the mounting hardware is recessed to prevent cable damage.
   g. Integral mechanical cable latch retainer to provide containment of cables within the hook. The retainer shall be removable and reusable.
   h. Suitable for direct attachment to walls, hanger rods, beam flanges, purlins, strut, floor posts, etc. to meet job conditions.
   i. Multi-tiered cable hooks to be used where required to provide separate cabling compartments, or where additional capacity is needed.
   j. Finishes:
      i. Cable hooks for non-corrosive areas shall be pre-galvanized steel, ASTM A653. Where additional strength is required, cable hooks shall be spring steel with a zinc-plated finish, ASTM B633, SC3.
      ii. Cable hooks for corrosive areas shall be stainless steel, AISI Type 304.
3. Manufacturer
   a. Cooper B-Line series BCH21, BCH32, BCH64

b. Erico/Caddy CableCat
c. Or Equal

PART 3 EXECUTION

3.1 GENERAL

A. The Owner's Representative reserves the right to request additional supports where in their sole opinion said supports are required. Any additional supports shall be installed at no additional cost to the Owner.

3.2 EXAMINATION

A. Thoroughly examine site conditions for acceptance of supporting device installation to verify conformance with manufacturer and specification tolerances. Do not commence with installation until all conditions are made satisfactory.

3.3 PREPARATION

A. Coordinate size, shape and location of concrete pads required for equipment installation with Base Building General Contractor Coordinate size, shape and location of concrete pads required for equipment installation with Base Building General Contractor.
B. Layout support devices to maintain headroom, neat mechanical appearance and to support the equipment loads.
C. Where shown on the Drawings or Specifications, install freestanding communications equipment on concrete pads.

3.4 INSTALLATION

A. Furnish and install supporting devices as noted throughout the Communications Systems work.
B. Communications device and conduit supports shall be independent of all other system supports that are not structural elements of the building, unless otherwise noted.
C. Fasten hanger rods, conduit clamps, outlet and junction boxes to building structure using pre-cast inserts, expansion anchors, preset inserts or beam clamps.
D. Use toggle bolts or hollow wall fasteners in hollow masonry, plaster or gypsum board partitions and walls.
E. Use expansion anchors or preset inserts in solid masonry walls.
F. Use self-drilling anchors, expansion anchor, or preset inserts on concrete surfaces.
G. Use sheet metal screws in sheet metal studs and wood screws in wood construction.
H. Do not fasten supports to piping, ductwork, mechanical equipment, conduit, or acoustical ceiling suspension wires.
I. Do not drill structural steel members unless first approved in writing by the Owner's Representative.
J. Fabricate supports from structural steel or steel channel, rigidly welded or bolted to present a neat appearance. Use hexagon head bolts with spring lock washers under all nuts.
K. Install surface-mounted cabinets with minimum of four anchors. Provide additional support backing in stud walls prior to sheet rocking as required to adequately support cabinets and panels.

L. Bridge studs top and bottom with channels to support flush mounted cabinets and panelboards in stud walls.

3.5 ERECTION OF METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal fabrications accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS "Structural Welding Code."

3.6 WOOD SUPPORTS

A. Cut, fit, and place wood grounds, nailers, blocking, and anchorage accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

3.7 ANCHORAGE

A. As part of the equipment submittals, cot' all provide anchorage calculations for floor and wall mounted communications equipment so that it shall remain attached to the mounting surface after experiencing forces in conformance with CCR, Title 24, Table 23P, Part II and with Section 2312 "Earthquake Regulations" of the "Uniform Building Code" for Seismic Zone 4 Area, Importance Factor of 1.25. Structural Calculations shall be prepared and signed by a California Registered Structural Engineer. Specify proof loads for drilled-in anchors, if used.

1. The contractor shall recommend the method of anchoring the equipment to the mounting surface and shall provide the Contractor with the assembly dimensions, weights and approximate centers of gravity.
2. All floor mounted, free standing electrical equipment such as racks and cabinets, etc. shall be securely fastened to the floor structure.

3.8 DISTRIBUTION PATHWAY VIA CEILING HUNG CABLE HOOKS (J-HOOKS):

A. Void, Plenum or Suspended Ceiling Exposed Cable Installation. Where drawings specifically show or permit use of exposed cable installation in voids, conform to the most restrictive requirements of Code TIA-569-B and this Section.

B. Provide support for all cabling. Do not place or attach direct grid, concealed spline grid, flexible or rigid ductwork, HVAC registers, sprinkler piping or fixtures, light fixtures or building structure. Conform to the California Electric Code.

C. Placement:

1. All pathways created by ceiling hung cable hooks shall be reviewed by The Owner’s Representative prior to installation.
2. Ceiling hung cable hooks and cabling supported by same shall not obscure access to access doors, hatches, air dampers, valves, filter sections, V A V boxes, cable trays, junction boxes, pull boxes or similar areas of access required by other trades.
3. All ceiling hung cable hooks shall be mounted close enough together such that upon completion of the station cable installation a minimum amount of cable droop occurs between adjacent rings. The distance between supporting rings shall not exceed 48” in wood frame construction, 60” in concrete construction, or as required by the current edition of TIA-569-B.
4. Refer to the separation requirements listed in Section 17150 - Communications Horizontal Cabling for minimum distances from electrical power and other electro-magnetic sources.

D. Follow manufacturer's recommendations for allowable fill capacity for each size of cable hook.
   1. Cable hooks shall be capable of supporting a minimum of 30 pounds with a safety factor of 3.
   2. Spring steel cable hooks shall be capable of supporting a minimum of 100 pounds with a safety factor of 3 where extra strength is required.
   3. Where aggregate cable bundle supported by ceiling hung cable hooks exceeds either the rated cable or weight load limit of the ceiling hung cable hook system, provide ceiling basket tray - Type CTW - as specified in Section 17036 Cable Trays for Communications Systems.

END OF SECTION

SECTION 17033
CONDUITS AND BACKBOXES FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK:

A. Provide telecommunications pathways in accordance with EIA TIA/EIA-569-B, as specified in this Section and as shown on the plans. Provide system furniture pathways in accordance with UL 1286. Provision of all low voltage Communications Systems Pathway and Electronic Security and Safety System Pathway, including:
   1. Rigid steel conduit and fittings.
   2. PVC insulated rigid steel conduit and fittings
   3. Intermediate metal conduit and fittings
   4. Electrical metallic tubing and fittings.
   5. Flexible metallic conduit and fittings.
   6. Liquidtight flexible metallic conduit and fittings.
   7. Miscellaneous conduit fittings and products.
   8. Junction Boxes
   9. Floor Boxes
   10. Hinged cover enclosures.
   11. Pullboxes and Terminal Cabinets.

B. At Hazardous Occupancies, installation conforms to the requirements of California Electric Code for Class and Division rating of spaces.

1.2 RELATED WORK IN OTHER SECTIONS:

A. Related work: Consult all other Sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation
   1. Section 01730 - Cutting and Patching.
   2. Section 07600 - Flashing and Sheet Metal.
   3. Section 09900 - Paints and Coatings. Exposed conduit and other devices.
   4. Section 17010 - Common Work Results for Communications.
   5. Section 17026 - Grounding and Bonding for Communications Systems.
   6. Section 17029 - Hangers and Supports for Communications Systems.
   7. Section 17036 - Cable Trays for Communications Systems.
   8. Section 17100 - Structured Cabling, Basic Materials and Methods.
   9. Section 17150 - Communications Horizontal Cabling.

1.3 REFERENCES

A. Usage: In accordance with Section 01110 - Summary of Work.
   1. American National Standards Institute (ANSI).
      a. ANSI C80.l 1994 Rigid Steel Conduit - Zinc Coated.
      b. ANSI C80.3 1991 Electrical Metallic Tubing - Zinc Coated.
   2. National Electrical Manufacturers Association (NEMA).
      a. NEMA 250-2003 Enclosures for Electrical Equipment (1000 Volts Maximum).

b. NEMA FB 1 (ANSIINEMA FB 1-2003) Fittings, Cast Metal Boxes and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable.
c. FB 2.10 2000 Selection and Installation Guidelines For Fittings For Use With Non-Flexible Metallic Conduit Or Tubing (Rigid Metal Conduit, Intermediate Metal Conduit, And Electrical Metallic Tubing).
d. FB 2.20 2000 Selection and Installation Guidelines for Fittings for use with Flexible Electrical Conduit and Cable.
e. NEMA ICS 6 1988 (Rev. 1) Enclosures for Industrial Control and Systems.
f. NEMA OS 3-2002 Selection and Installation Guidelines for Electrical Outlet Boxes.
g. NEMA RN 1-1998 Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
h. NEMA TC 7 2000 Smooth Wall Coilable Polyethylene Electrical Plastic Duct.
i. NEMA TC 13 2000 Electrical Nonmetallic Tubing (ENT).
j. NEMA TC 14 1984(R 1986) Filament-Wound Reinforced Thermosetting Resin Conduit and Fittings.

3. Underwriters Laboratories, Inc. (UL).
a. UL 1 2000 Flexible Metal Conduit.
b. UL 6 2004 Electrical Rigid Metal Conduit – Steel.
c. UL 50 (1995; R 1999, Bul. 2001) Enclosures for Electrical Equipment.
d. UL 360 1986 (Bul. 1991) (R 1993) Liquid-Tight Flexible Steel Conduit.
e. UL 514A 1991 (R 2004) Metallic Outlet Boxes.
f. UL 514B 1989 (R 2004) Conduit, Tubing and Cable Fittings.
g. UL 514C 1996 (R 2000) Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers.
h. UL 651 1989 (R 1989) (Bul. 1993) Schedule 40 and 80 Rigid PVC Conduit.
i. UL 797 1993 (R 2004) Electrical Metallic Tubing – Steel.
j. UL 1242 1983 (R1993) (Bul. 1993) Intermediate Metal Conduit.
k. UL 1286(1999; R 2001, Bul. 2002) Office Furnishings.
l. UL 1479 Fire Tests of Through Penetration Firestops.
m. UL Fire Resistance Directories.

1.4 SUBMITTALS

A. Conform to the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 QUALITY ASSURANCE

A. All materials, equipment and parts comprising the units specified herein shall be new and unused, and of current manufacturer.
B. Only products and applications listed in this Section may be used on the project unless otherwise submitted and approved by the Owner's Representative.

PART 2 PRODUCTS

2.1 GENERAL

A. Provide the following types of conduit systems listed by their commonly used generic name.

2.2 RACEWAY

A. Manufacturers:
   1. Raceway:
      a. Allied Tube and Conduit Co.
      b. Triangle PWC, Inc.
      c. Western Tube and Conduit Corp.
      d. Spring City Electrical Manufacturing Co.
      e. Occidental Coating Co. (OCAL).
      f. Alflex Corp.
      g. American Flexible Metal Conduit Co.
      h. Anaconda.
      i. Or equal.
   2. Fittings:
      a. Appleton Electric Co.
      b. OZ/Gedney.
      c. Thomas & Betts Corp.
      d. Spring City Electrical Manufacturing Co.
      e. Occidental Coating Co. (OCAL).
      f. Carlon.
      g. Or equal.

B. Rigid Steel Conduit.
   1. Drawing and Spec Reference: RSC.
   2. Construction:
      a. Conduit: Full weight, threaded, hot-dip galvanized steel, conforming to ANSI C80.1 and UL 6.
      b. Standard threaded couplings, locknuts, bushings, and elbows: Only materials of steel or malleable iron are acceptable. Locknuts shall be bonding type with sharp edges for digging into the metal wall of an enclosure.
      c. Three piece couplings: Electroplated, cast malleable iron.
      d. Insulating bushings: Threaded polypropylene or thermosetting phenolic rated 150 degree C minimum.
      e. Insulated grounding bushings: Threaded cast malleable iron body with insulated throat and steel "lay-in" ground lug with compression screw.

f. Insulated metallic bushings: Threaded cast malleable iron body with plastic insulated throat rated 150 degrees C.
g. All fittings and connectors shall be threaded.

C. Coated Rigid Steel Conduit:
1. Drawing and Spec Reference: CRSC.
2. Conduit: Full weight, threaded, hot-dip galvanized steel, conforming to ANSI C80.l and NEMA RN-l with nominal 40 mil thermoplastic vinyl coating, heat fused and bonded to the exterior of the conduit.
3. Fittings:
   a. Conduit couplings and connectors shall be as specified for galvanized rigid steel conduit and shall be factory PVC coated with an insulating jacket equivalent to that of the coated material.
   b. Fittings over-sleeve to extend 1 conduit diameter or 1-1/2" beyond fitting, whichever is less.
4. Performance:
   a. Tensile Strength: 3500 psi.
5. Approvals:
   a. NEMA RNI (Type 40 - 40 mils thick).
   b. CalTrans Type 2
6. Manufacturers:
   a. Plastibond by RobRoy Industries.
   b. Occal-40 by Occidental Coating Company.
   c. KorKap by Plastic Applicators.
   d. Ocal-Blue.
   e. Or equal.

D. Intermediate Metal Conduit.
1. Drawing Reference: IMC.
2. Conduit: Hot dip galvanized steel meeting the requirements of CEC Article 345 and conforming to ANSI C80.6 and UL 1242.
3. Fittings: Conduit couplings, connector and bushing shall be as specified for galvanized rigid steel conduit. Integral retractable type IMC couplings are also acceptable.

E. Electrical Metallic Tubing.
1. Drawing and Spec Reference: EMT.
2. Conduit: Shall be formed of cold rolled strip steel, electrical resistance welded continuously along the longitudinal seam and hot dip galvanized after fabrication. Conduit shall conform to ANSI C80.3 specifications and shall meet UL classifications.
3. Set screw type couplings: Electroplated, steel or cast malleable iron, UL listed concrete tight. Use set screw type couplings with four setscrews each of conduit sizes over 2 inches. Setscrews shall be of case hardened steel with hex head and cup point to firmly seat in wall of conduit for positive grounding.

4. Set screw type connectors: Electroplated steel or cast malleable iron UL listed concrete tight with male hub and insulated plastic throat, 150 degree C temperature rated. Setscrew shall be same as for couplings.
5. Raintight couplings: Electroplate steel or cast malleable iron; UL listed raintight and concrete tight, using gland and ring compression type construction.
6. Raintight connectors: Electroplated steel or cast malleable iron, UL listed raintight and concrete tight, with insulated throat, using gland and ring compression type construction.

F. Flexible Conduit:
1. Drawing Reference: FLEX
2. Construction:
   a. Flexible steel, zinc coated on both inside and outside by hot-dipping process.
   b. Interlocking spirally wound continuous steel strip.
   c. 3/4" minimum size.
3. Fittings: Connectors shall be of the single screw clamp variety with steel or cast malleable iron bodies and threaded male hubs with insulated throats. Exception: Pressure cast screw-in connectors shall be acceptable for fixture connection in suspended ceilings and cut-in outlet boxes within existing furred walls.
4. Approvals:
   a. UL 1

G. Liquidtight Flexible Metallic Conduit:
1. Drawing Reference: Liquidtight
2. Conduit: Shall be fabricated in continuous lengths from galvanized steel strips, interlocking spirally wound, covered with extruded liquidtightjacket of polyvinyl chloride (PVC) and conforming to UL 360. Provide conduit with a continuous copper-bonding conductor wound spirally between the convolutions.
3. Fittings: Connector body and gland nut shall be of cadmium plated steel or cast malleable iron, with tapered, male, threaded hub; insulated throat and neoprene "0" ring gasket recessed into the face of the stop nut. The clamping gland shall be of molded nylon with an integral brass push-in ferrule.

2.3 MISCELLANEOUS CONDUIT FITTINGS AND PRODUCTS

A. General
1. UL 514B.
2. Listed in UL Electrical Construction Materials List.

B. Conduit Fittings, Insulated Throat Grounding Bushings
1. Description
   a. Threaded for Rigid Steel Conduit and Intermediate Metal Conduit.
   b. UL Listed for use with copper conductors.
   c. Thermoplastic insulated liner for 105 degrees Celsius.
   d. Body of malleable iron, zinc plated; or die cast zinc.
2. Manufacturer

a. Thomas & Betts (Steel City) BG-801 Series
b. O-Z/Gedney
c. Or equal.

C. Watertight conduit entrance seals: Steel or cast malleable iron bodies and pressure clamps with PVC sleeve, neoprene sealing grommets and PVC coated steel pressure rings. Fittings shall be supplied with neoprene sealing rings between the body and PVC sleeve.

D. Watertight cable sealing bushings: One piece, compression molded sealing ring with PVC coated steel pressure disks, stainless steel sealing screws and zinc plated cast malleable iron locking collar.

E. Expansion fittings: Multi-piece unit comprised of a hot dip galvanized malleable iron or steel body and outside pressure bussing designed to allow a maximum of 4" conduit movement (2" in either direction). Furnish with external braid tinned copper bonding jumper. Unit shall be UL listed for wet or dry locations.

F. Expansion/deflection couplings: Multi-piece unit comprised of a neoprene sleeve with internal flexible tinned copper braid attached to bronze end couplings with stainless steel bands. Coupling shall accommodate .75- inch deflection, expansion, or contraction in any direction, and allow 30-degree angular deflections. Flexible, corrosion-resistant, watertight, moisture and heat resistant molded rubber jacket and stainless steel jacket clamps. Unit shall comply with UL467 and UL514.
1. Manufacturer:
a. OZ/Gedney Type DX
b. Steel City Type EDF
c. Or equal.

G. Fire rated penetration seals:
1. UL classified.
2. Conduit penetrations in fire rated separation shall be sealed with a UL classified assembly consisting of fill, void or cavity materials.
3. The fire rated sealant material shall be the product best suited for each type of penetration, and may be a caulk, putty, composite sheet or wrap/strip.
4. Penetrations of rated floors shall be sealed with an assembly having both F and T ratings at least equal to rating of the floor.
5. Penetrations of rated walls shall be sealed with an assembly having an F rating at least equal to the rating of the wall.

H. Standard products not herein specified:
1. Submit for review a listing of standard electrical conduit hardware and fittings not herein specified prior to use or installation, i.e. locknuts, bushings, etc.
2. Listing shall include manufacturers name, part numbers, and a written description of the item indicating type of material and construction.
3. Miscellaneous components shall be equal in quality, material, and construction to similar items herein specified.

I. Hazardous area fittings: UL listed for the application.

2.4 JUNCTION AND DEVICE BOXES

A. Junction and Device Boxes

1. Drawing References: As shown on Symbol Schedule
2. Construction:
    a. Concealed/Flush Mounted:
    b. One or two piece welded knockout boxes.
    c. UL 514A, cadmium or zinc-coated 1.25 oz/sq. ft., if ferrous metal.
    d. Pressed sheet steel, for indoor locations.
    e. UL 514C approved if non-metallic.
    f. At hollow masonry, tile walls and plaster walls, provide with device rings as required.
    g. Surface mounted:
        i. Exterior – Conform to the Junction and/or PullBox construction scheduled on the Plans. Where construction not otherwise scheduled or noted on the plans, conform to the following:
            (1) Cast iron or aluminum with threaded hubs and mounting lugs.
            (2) Gasketed cover with spring lid.
        ii. Concrete floor embedded:
            (1) Cast iron concrete pour boxes with screwed brass cover, unless otherwise noted.
            (2) Cadmium plated screw cover attachment at least 6” on center.
    h. If size not otherwise noted, at least 4S (4" square) by 2-1/8" deep, or Code minimum size, whichever is larger.
        i. Wherever 4S is indicated, contractor may at their option substitute 4-11/16" square boxes while maintaining the minimum depth required by these specifications and the drawings.
    i. Provide complete with approved type of connectors and required accessories, including attachment lugs or hangers. Provide raised device covers as required to accept scheduled device.
3. Approvals.
    a. UL 514A
4. Manufacturers:
    a. Interior:
        i. Steel City.
        ii. Bowers.
        iii. Or equal.
    b. Exterior, exposed with cover of same construction.
        i. Appleton
        ii. Pyle-National
        iii. Or equal.
    c. Other conditions:
        i. Any meeting approvals and requirements.

B. Locking Wall Boxes

2. Drawing References: L WB3, L WB4.
3. Features/Functions/Construction.
    a. Locking hinged steel cover.
    b. Accepts 3 or 4 gang plate inserts.
    c. 2-1/8" minimum depth behind plate insert.
    d. Protects contents from tampering when closed.
    e. Lid incorporates push-to-open retention latch.
    f. Lid folds down 180 degrees, out of way during use.
    g. Size.
        i. LWB3: NEMA 3 gang capacity.
        ii. LWB4: NEMA 4 gang capacity.
    h. Finish:
        i. Submit White or Prime options for selection by the Architect.
4. Manufacturers
    a. FSR Inc.
        i. LWB3: WB-3G with 3 gang Bowers backbox.
        ii. L WB4: WB-4G with 4 gang Bowers backbox.
    b. Custom by C.W. Cole.
    c. Or equal.

2.5 CABINETS AND ENCLOSURES

A. Terminal Cabinets.
1. Drawing Reference: As Scheduled.
2. Construction:
    a. Zinc Coated Sheet Steel, code gauge with standard concentric knockouts for conduit terminations.
    b. Interior dimensions not less than those scheduled.
    c. Finish: Manufacturer's standard gray baked enamel finish.
    d. Covers: Trim fitted, continuous hinged steel door, flush catch-lockable and keyed to match. Screw fastened doors not acceptable.
        i. Door face to be not less than 95% of panel interior dimensions.
    e. Provide with 3/4" fire retardant treated ply backboard.
3. Mounting:
    a. Flush cabinets shall be furnished with concealed trim clamps and shall be not less than 4 inches deep.
    b. Surface cabinets shall be furnished with screw cover trim, flush hinged door and shall not be less than 6 inches deep.
    c. Interior Applications:
        i. NEMA 250 Type 1, unless otherwise noted. Refer to plans and schedules.
    d. Exterior Applications:
        i. NEMA 250 Type - As Scheduled, not less than NEMA 3R.
4. Manufacturers:
    a. B-Line Electrical Enclosures.

b. Circle AW Products.
c. Hammond.
d. Henessey.
e. Hoffman.
f. Myers Electric Products.
g. Rittal.
h. Or equal.

2.6 FLOOR BOXES, POKE-THROUGHS AND MONUMENTS

A. Floor Box High Capacity, 3 Compartment
  A. Plan Reference: FC4, FW4, FR4
  2. Features
    a. UL Listed
    b. Box
      i. Size at least 10 inches by 12 inches by 6 inches deep.
      ii. Three compartments, with voltage barriers, with standard electrical plate mounting brackets for at least:
        (1) One single gang.
        (2) One 2 gang.
        (3) One 4 gang.
    c. Knockouts concentric, combination 1 inch and 1.25 inch.
    d. Cover for carpet finish.
    e. Cover size approximately 10.5 inches by 12.5 inches.
    f. At least 11 gage steel.
    g. Carpet flange of mitered brass or aluminum edging.
      i. Option of brass or aluminum to be selected by the Architect.
      ii. Option of 0.25 inch or 0.5 inch flange height to be selected by the Contracting Officer.
    h. Within cover, provide a lift-off, full-access door, open area approximately 6.5 inches by 8 inches.
    i. Within the lift-off, full-access door, provide a hinged, fold-back cable exit port.
    j. Open area approximately 2 inches by 2 inches.
    k. Flush in closed position.
  3. Applications:
    a. FC4: Concrete floor systems. Provide "pour pan" protection at slab on grade conditions.
    b. FR4: Raised Floor Conditions.
    c. FW4: Wooden Floor Conditions.
  4. Approvals:
    a. UL 514A scrub water.
  5. Manufacturers:
    a. FSR Inc.
      i. FC4: FL-500P-(cover flange code)-4. Supply larger boxes where scheduled and indicated plates and jacks require it.

Provide manufacturer's "Pour Pan" FL-GRD2 or FL-GRD4 to protect from moisture at installations at grade level.

ii. FW4, FR4: FL-540P-(cover flange code)-4. Supply larger boxes where scheduled and indicated plates and jacks require it.

b. RCI Systems, Inc.

i. FC4: FB-2600. Supply larger boxes where scheduled and indicated plates and jacks require it. Provide manufacturer's "Pour Pan" to protect from moisture at installations at grade level.

c. Wiremold/Walker RFB-ll.

d. Or equal.

B. Electrified Furniture Monuments.

1. Plan Reference: EFM
2. Construction:
   a. Above slab box construction.
      i. Die-cast aluminum with satin finish.
      ii. Four-piece assembly consisting of base plate, three-sided housing, and removable faceplates.
      iii. Equipped with faceplate that accepts modular jacks specified in Section 17150.
   b. Manufacturers:
      i. Wiremold 525RT
      ii. Or equal.

2.7 TABLETOP BOXES

A. Presenter Desk Network Interface.

1. Drawing Reference: PDN.
2. Construction/Features/Function.
   a. Steel Enclosure with flip-up lid - refer to detail on plans.
   b. Installs flush in Presenter Desktop or Conference Table.
3. Approvals
   a. UL Spill Rating
4. Accommodates Keystone standard network jack.
5. Convenience power receptacle.
6. Manufacturer:
   a. Mockett PCSS.
   b. Wiremold.
   c. Or equal.

PART 3 EXECUTION

3.1 CONDUIT APPLICATION

A. General: Install the following types of conduits and fittings in the locations listed, unless otherwise noted in the drawings:

1. Exterior, Exposed:

a. Type RSC for applications up to 8 feet AFF or to first pull box, whichever is first, applications subject to physical abuse or for applications greater than 4" diameter.
b. EMT acceptable in all other applications not noted above up to 4", where used in conjunction with specified Raintight (compression) couplers.

2. Interior, Exposed, Wet and Damp Locations:
   a. Type RSC.
   b. At interior locations over 8 feet above finished floor, EMT acceptable.
3. Interior, Hazardous Locations.
   a. Type RSC
   b. Type IMC, where permitted by the CEC.
4. Interior, exposed or concealed, dry locations:
   a. RSC, if subject to physical abuse.
   b. EMT, if not subject to physical abuse.
5. Interior, concealed, damp locations, including in masonry walls.
   a. RSC
6. Embedded in Concrete.
   a. RSC or rigid non-metallic conduit.
   b. PVC Type DB-120.
7. Transition from walls to open plan furniture systems:
   a. Liquidtight.

3.2 GENERAL REQUIREMENTS

A. Refer to the manufacturer's instructions and conform thereto.
B. Distribution Pathway via EMT Raceway:
   1. The EMT conduit is to be installed meeting the NEC handbook Article 348 Installation Specifications.
   2. Provide escutcheon plates for all through wall conduit stubs.
   3. All ends of conduits shall be cut square, reamed and fitted with insulated bushing.
   4. All conduit which passes through fire walls shall be sealed with fire stop putty after all station wire has been installed.

3.3 MOUNTING AND INSTALLATION – DEVICE BOXES

A. Conform to the more restrictive of NEMA OS 3-2002 and the following.
B. Provide backboxes at all communications systems devices. Installation of device plates directly to wall surface without use of a backbox, unless specifically directed on plans, is unacceptable.
C. The distance between pull boxes shall not exceed 150 feet or more than two 90 degree bends.
D. Align boxes plumb with floor and surrounding construction. At door frames, locate 4" from frame. Verify placement with Owner's Representative details to ensure that box clears all trim, etc.
E. Support and fasten boxes securely. At stud walls use rigid bar hangers, attached to hanger with stud and nut.

F. At existing locations, provide cutting, patching and finishing as required to maintain or restore finishes so that resulting installation is integrated into the Architectural decor of the particular location.
G. Mounting Height: the mounting height of a wall-mounted outlet box is defined as the height from the finished floor to the horizontal center line of the cover plate.
H. Mount outlet boxes with the long axis vertical. Three or more gang boxes shall be mounted with the long axis horizontal.
I. Install wiring jacks and outlet devices only in boxes which are clean; free from excess building materials, dirt, and debris.
J. Install wiring jacks and outlet devices after wiring work is complete.

3.4 TERMINAL CABINETS, JUNCTION BOXES AND PULL BOXES

A. General
   1. Thoroughly examine site conditions for acceptance of cabinets and enclosures installation to verify conformance with manufacturer and specification tolerances. Do not commence with installation until all conditions are made satisfactory.
B. Set cabinets and enclosures plumb and symmetrical with building lines. Furnish and install all construction channel bolts, angles, etc. required to mount all equipment.
C. Cabinets and enclosures shall be anchored and braced to withstand seismic forces calculated in accordance with standards referenced in Section 17029.
D. "Train" interior wiring, bundle and clamp using specified plastic wire wraps. Separate power and signal wiring.
E. Replace doors or trim exhibiting dents, bends, warps or poor fit that may impede ready access, security or integrity.
F. Terminate conduit in cabinet with lock nut and grounding bushing.
G. Cleaning
   1. Touch-up paint any marks, blemishes or other finish damage suffered during installation.
   2. Vacuum clean cabinet on completion of installation.

3.5 SUPPORT

A. Provide supports for raceways as specified in Section 17029 - Hangers and Supports for Communications Systems.
B. All raceways installed in exposed dry locations shall be grouped in a like arrangement and supported by means of conduit straps, wall brackets or trapeze hangers in accordance with Code and the requirements of the this Section and Section 17029 - Hangers and Supports for Communications Systems. Fasten all hangers from the building structural system.
C. Provide supports and mounting attachments per the most restrictive of Code and the following.

Raceway Size (inches)	No of cables in run	Location	Support Spacing (feet)	
			RSC	EMT
Horizontal Runs				
1/2, 3/4	1-2	Flat Ceiling Wall Runs	5	5
1/2, 3/4	1-2	Where access limited to building	7	7

		structure		
1/2, 3/4	3≥	Any location	7	7
1≥	1-2	Flat ceiling or wall	6	6
1≥	1-2	Where access limited to building structure	10	10
1≥	3≥	Any locations	10	10
Any	Any	Concealed	10	10
Vertical Runs				
1/2, 3/4	Any	Exposed	7	7
1, 1-1/4	Any	Exposed	8	8
1-1/2 ≥	Any	Exposed	10	10

D. Install no more than one coupling or device between supports.

E. Conduit support.

1. As specified in Section 17029 - Hangers and Supports for Communications Systems.

F. The Owner's Representative reserves the right to request additional supports where in their sole opinion said supports are required. Any additional supports shall be installed at no additional cost to the Owner.

3.6 PENETRATIONS

A. Gypsum Wall Board Penetrations: Provide circular penetrations maximum 1/8" inch larger than outer diameter of conduit being used. On both sides of the wall fill space between conduit and wall with joint compound, depth to match gypsum board thickness.

B. Install UL listed fire-stop system whenever a raceway penetrates a firewall in conformance with the manufacturer's directions, the published systems assembly requirements, CBC Section 709 and 710 and CEC 300-21, whichever is the most restrictive. At cable tray penetrations, provide pillow type removable fire stop per CBC Section 709 and 710, the published systems assembly requirements and the manufacturer's directions, whichever is the most restrictive.

C. All communications systems conduit openings in walls and floors are the responsibility of the Contractor. Install sleeves shown on the drawings when the concrete is poured. Any openings required after the concrete has set maybe core drilled.

3.7 RACEWAY INSTALLATION, GENERAL

A. Raceway runs are shown schematically. Install concealed unless specifically shown otherwise. Supports, pull boxes, junction boxes and similar generally not indicated. Provide where designated.

1. Install exposed conduit and raceway parallel and perpendicular to nearby surfaces or exposed structural members, and follow the surface contours. Level and square conduit and raceway runs.

2. Raceway runs shall be mechanically and electrically continuous between all each equipment rack and utility demarcation point, receptacle and/or surface raceway strip, as applies.
3. Each conduit shall enter and be securely connected to a cabinet, junction box, pull box, or outlet by means of a locknut on the outside and a bushing on the inside or by means of a liquid-tight, threaded, self-locking, cold-weld type wedge adapter.
4. Bends.
   a. All bends or elbows shall have a minimum radius as follows:

Conduit Size	Min. Radius (Inches)
¾”	8
1”	12
1-1/4”	18
2”	24
2-1/2”	24
3”	30
3-1/2”	30
4”	30
5”	36
6”	42

   b. Use factory elbows or machine bends for conduit bends 1-1/4" and larger.
5. Make bends and offsets so the inside diameter is not effectively reduced. Make bends in parallel or banked runs from the same center line so that the bends are parallel.
6. Install at least one (1) 3/8", 200 pound strength nylon pull cord in all empty raceways.
7. Raceways crossing building expansion joints or in straight runs exceeding 1 00 feet shall be provided with UL listed expansion fittings.
8. Install conduit seals and drains to prevent accumulated moisture in conduits from entering Communications System enclosures.

B. Do not install conduit in concrete slabs unless specifically directed by Owner's Representative. Embedded conduits in concrete slab walls, and columns shall be installed in center third between upper and lower layers of reinforcing steel as directed by the Owner's Representative. Space conduits 8" on center except at cabinet locations where slab thickness shall be increased as directed by the Owner's Representative.

C. All conduits to be kept 12" away from steam or hot water lines. Install horizontal conduit and raceway runs below water and steam piping.

D. Conduit dropping down to equipment shall be as straight as possible without any offsets, parallel or perpendicular to walls, ceilings and other building features.

E. Conduit installed on any equipment shall be run symmetrical with the equipment and in such a manner as to:
   1. not to be exposed to damage;

2. not interfere with access to components of the equipment that will interfere with maintenance operation or;
3. not to be in a manner that the Owner deems detrimental to its operation.

F. Whenever an installation such as that listed occurs, the Contractor shall make all necessary changes at no additional cost to the Owner.

G. All cut ends of conduit, scratches, tool marks, etc. on any metallic raceway installed in the ground or on the exterior of the building shall be treated with two coats of specified Touch Up Paint/Tape.

H. Exposed conduit and metallic surface raceway installed in finished spaces shall be painted to match surrounding surfaces using paint and methods directed by the Owner's Representative.

I. All raceways stubbing up into equipment or racks shall be sealed. Raceways with conductors shall be plugged with duct-seal. Spare raceways shall be capped. Prevent foreign matter from entering conduit and raceway; use temporary closure protection. Replace conduits containing concrete, varnish or other foreign material.

J. Complete installation of conduit and raceway runs before starting installation of cables/wires within conduit and raceway.

K. Use specified conduit and raceway fittings that are of types compatible with the associated conduit and raceway and suitable for the use and location. Join and terminate conduit and raceway with fittings designed and approved for the purpose of the conduit and raceway system and make up tight.

L. Where chase nipples are used, align the raceway and coupling square to the box and tighten the chase nipple so no threads are exposed.

M. Horizontal conduit or EMT runs, where required and permitted, shall be installed as close to ceiling or ceiling beams as practical.

N. Conduit and EMT connected to wall outlets shall be run in such a manner that they will not cross water, steam or waste pipes or radiator branches.

O. Conduit and EMT shall not be run through beams, purlins or columns except where permission is granted by Owner's Representative in writing.

P. Bond installed metallic raceway in accordance with the requirements of the CEC.

3.8 RACEWAY FOR ACCESS CONTROL AND INTRUSION DETECTION SYSTEMS

A. Refer to general requirements herein above.

B. Access control and intrusion detection systems shall be installed in entirely in raceway, including:
   1. Rough- in for the field devices as detailed and scheduled on the plans.
   2. Pull cabinets located at regular intervals in the building, sized to accommodate the access control and intrusion detection cabling.
      a. Size raceway between pull cabinets to accommodate fill of field devices.
      b. Provide two separate raceway systems.
         i. one for power cabling, including power for door locks and field devices.

ii. one for Access Control and Intrusion Detection System field devices, including card readers, motion detectors, glass break sensors, request-to-exit sensors and similar.
(1) For Owner's Security contractor provided card readers, assume a 0.26 inch diameter cable is required from the serving IDF or BD to each door scheduled to receive a card reader.

3. Gutter at backboard of BD and IDF to terminate the raceway arriving from the pull cabinets and directly from the field devices.
4. Terminal cabinets at backboard of BD and IDF to enclose the TB15's used to terminate the field wiring installed under the work of this contract.

3.9 HAZARDOUS LOCATIONS

A. Use rigid steel conduit only.
B. Install UL listed sealing fittings that prevent passage of explosive vapors in accordance with the manufacturers written instructions. Locate fittings at suitable, accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank coverplate having a finish similar to that of adjacent plates or surfaces.
C. Install raceway sealing fittings at the following points and elsewhere as indicated:
1. Where conduits enter or leave hazardous locations.

3.10 REUSE OF EXISTING CONDUIT

A. Existing conduit is to be used as a pathway only where so shown on the drawings.
B. Prior to beginning work involving the use of an existing conduit, the Contractor shall consult with the Owner's Representative in order to establish whether or not the conduit contains active service.
C. If no active service exists within the conduit, all cable is to be removed, and work is to proceed.
D. If active service does exist within the conduit and it has been determined that service needs to be disrupted, then work on that conduit shall not proceed until a schedule of service outage has been established by Owner's Representative. Once given permission to proceed, the Contractor shall within the time period of one (l) working day; remove the old cable, install, terminate and test the new cables, and notify the Owner's Representative the work using the specific conduit has been completed.
E. Conduit preparation procedure:
1. Remove existing Wires and Cables (if any).
2. Run a mandrel Y2" smaller than the inside diameter of the conduit through the conduit receiving new wires and cables.
3. If the specified size mandrel will not pass through the existing conduit, start with a smaller size mandrel and increase mandrel size until the specified sized mandrel will pass.
4. Run a wire brush and clean rag with an outside diameter 1/8" larger than the inside of the conduit through the conduit receiving new wires and cables.
5. Repeat above until conduit is clean and materials detrimental to the wire and cables to be installed no longer exit conduit with the clean rag.

3.11 STATION CABLE PATHWAY INSTALLATION

A. Cut In Boxes and Station Outlet Boxes.
   1. Unless otherwise noted on the plans, all cut in boxes and surface station outlet boxes are to be installed at a height of 36" A.F.F. (above finished floor) to center, except for those intended to be used for telephone wall jacks. Those plates or boxes that are to be used for telephone wall jacks shall be installed at a height of 54" A.F.F. to center.
   2. All station outlets shall be installed so that their edges are parallel to the vertical and horizontal edges of the surface on which they are mounted.

END OF SECTION

SECTION 17036
CABLE TRAYS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK:
A. Cable Trays for Communications Cabling.
   1. Cable Trays
   2. Cable Runways
   3. Basket Tray

B. Cable Tray Support

1.2 RELATED WORK UNDER OTHER SECTIONS:
A. Section 17010 - Common Work Results for Communications.
B. Section 17026 - Grounding and Bonding for Communications Systems.
C. Section 17029 - Hangers and Supports for Communications Systems.
D. Section 17033 - Conduits and Backboxes for Communications Systems.
E. Section 17053 - Identification for Communications Systems.
F. Section 17100 - Structured Cabling, Basic Materials and Methods.
G. Section 17150 - Communications Horizontal Cabling.

1.3 REFERENCES
A. Usage: In accordance with Section 01110 - Summary of Work.
   1. National Electrical Manufacturers Association (NEMA).
      a. NEMA FG 1 1-1998 Fiberglass Cable Tray Systems.
      b. NEMA VE 1 1-1998 Metal Cable Tray Systems.
      c. NEMA VE 2 2001 Metal Cable Tray Installation Guidelines.

1.4 SUBMITTALS
A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 Common Work Results for Communications.

1.5 DELIVERY, STORAGE AND HANDLING
A. Procedures: In accordance with Section 01600 - Product Requirements.

1.6 SEQUENCING
A. Not Used.

PART 2 PRODUCTS

2.1 CABLE TRAY, CABLE RUNWAY AND BASKET TRAY
A. Cable Tray
   1. Drawing and spec reference: CTxx-yy, where "xx" denotes nominal width of cable runway in inches and "yy" denotes nominal depth.
   2. Construction:
      a. Steel or aluminum.
      b. Rungs 9" on center, unless otherwise noted.
      c. UL Classified splice kits.
   3. Approvals:

a. ASTMA513.
b. California Electrical Code, Article 318.
c. NEMA VEl Class 12C minimum, or to suit indicated cable and raceway loads, whichever is greater.

4. Manufacturers:
a. B-Line Cable Tray Systems Ladder Type Cable Tray.
b. Globe Tray.
c. PW Industries.
d. Or equal.

B. Cable Runway
1. Drawing and spec reference: CR*, where "*" denotes nominal width of cable runway in inches.
2. Construction:
a. Solid Steel Side Bar per ASTM A-36 or Tubular Steel Side Bar per ASTM A-513.
b. 1.5" x 0.375 minimum tubular side stringers.
c. UL Classified splice kits.
d. Designed to support at least 100 pounds per foot load with a Safe Working Load deflection of ½" or less.
3. Finish: Telco gray powder coat or gold on zinc plating.
4. Approvals:
a. ASTM A513
b. UL Classified as an equipment grounding conductor.
c. California Electrical Code, Article 318
5. Manufacturers:
a. B-Line Telecom-Saunders SB-17.
b. Chatsworth Products Inc. 11275 series.
c. PW Industries.
d. Or equal.

C. Cable Tray, Open Wire Frame
1. Drawing and spec reference(s): CTWxx-y, where xx denotes the tray width and y the depth of the tray, in inches.
2. Construction.
a. Welded wire mesh with continuous safety edge wire lip.
b. Mesh forms grid at nominally 2" by 4".
c. Carbon Steel.
d. Electroplated zinc galvanized.
e. All bends, seams and joints field fabricated from basic straight section pieces and splice components as supplied by the manufacturer.
f. Where supported from ceiling, supported at both sides in trapeze arrangement - centerline support not acceptable.
g. Provides pathway complying with EIA/TIA-569B and NEMA Publications VEl & VE2.
h. Meets requirements of California Electrical Code, Article 318.

3. Approvals:
   a. NEMA Publications VEl & VE2.
4. Manufacturers:
   a. B-Line Wire Basket Runway.
   b. Cablofil.
   c. G.S. Metals Corp.
   d. Or equal.

D. Cable Tray, Fiberglass
1. Drawing and spec reference(s): CTFxx-y, where xx denotes the tray width and y the depth of the tray, in inches.
2. Construction
   a. Non-metallic, Non-conductive, Fiberglass Construction, suitable for continuous exterior exposure in a marine environment.
   b. Deep structural C-form side channels.
   c. Ladder rungs at 9" O.C., UON
   d. All bends, seams and joints field fabricated from basic straight section pieces and splice components as supplied by the manufacturer.
3. Approvals:
   a. UL Listed as a system.
   b. ASTMA568.
   c. NEMA Publication FGl.
   d. NEMA 12C.
   e. California Electrical Code, Article 318.3.
   f. Meets ASTM E-84 smoke density rating; Polyester 680, Vinyl Ester 1025.
   g. Class 1 Flame Rating and self-extinguishing requirements of ASTM D-635.
4. Manufacturers:
   a. Enduro Composite Systems.
   b. Robroy.
   c. PW Industries.
   d. Or equal.

PART 3 EXECUTION

3.1 Cable Tray Application

A. Unless otherwise noted, communications cable tray installations shall conform to the following:
1. Type CT - Within Communications Rooms (including Telecomm Building (ADF), BDF and IDF spaces).
2. Type CTW - Horizontal station cabling outside of the communications rooms where shown on plans or where more than 100 cables are supported, whichever is greater.

3. Type CR - Wherever vertical transitions from ceiling or floor sleeves are required within the Communications Room.

3.2 Installation:

A. Provide all required supports, fittings and accessories for a complete system as described in NEMA VE-2, by Code, manufacturer recommendation or as shown on the plans, whichever is most restrictive.

B. Bond sections to one another and to building ground.

C. Access Clearance. Maintain access for use by Owner's personnel to tray as described below. Coordinate installation with work of structural, mechanical, plumbing/fire protection and electrical trades to maintain required access.

1. Unless shown otherwise on the plans, provide a clear access of at least 24" wide along one side of each tray for use by Owner's personnel.
2. Unless shown otherwise on the plans, installation to maintain at least 12" vertical clearance over the top of each tray for use by Owner's personnel.

3.3 Support

A. Support in accordance with the most restrictive of the following:

1. Contractor's engineered means of engineered support submitted in accordance with the requirements of 17010 - Common Work Results for Communications and Section 17029 - Hangers and Supports for Communications Systems.
2. California Building Code, including but not limited to requirements of Volume 2, Chapter 16, Division *N,* Section 1632 and Table 16-0.
3. Metallic Cable Tray: NEMA VE 2-2001, or latest edition.
4. Fiberglass Cable Tray: NEMA FG-I-1998, or latest edition.

B. Provide lateral sway bracing as required by Code.

END OF SECTION

SECTION 17053
IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SUMMARY:

A. Provide all labor, materials, tools, and equipment required for permanent intelligible labeling on, or adjacent to, all cabling, connectors, innerduct, faceplates, jacks, receptacles, controls, fuses, circuit breakers, patching jacks, and racks.

B. This section includes minimum requirements for the following:
   1. Labeling Communications Cabling
   2. Labeling Closet Hardware
   3. Labeling Work Stations
   4. Labeling Pathways, Spaces, Grounding and Bonding.

C. Refer to detailed plans for additional requirements.

D. Clearly and distinctly indicate the function of the item.

E. Coordinate with Record Drawings

1.2 REFERENCES:

A. Usage: In accordance with Section 01110 – Summary of Work.

B. American Society for Testing and Materials (ASTM)
   1. ASTM D 709(2001) Laminated Thermosetting Materials

C. Electronic Industries Alliance (EIA)
   1. EIA TIA/EIA-606-A(2002) Administration Standard for Commercial Telecommunications Infrastructure (ANSI/TIA/EIA-606)

D. Underwriters Laboratories (UL)
   1. UL 969 (1995: R 2001) Marking and Labeling Systems

1.3 QUALITY ASSURANCE

A. Identification and administration work specified herein shall comply with the applicable requirements of:
   1. ANSI/TIA/EIA-606-A Administration Standards.
   2. ANSI/TIA/EIA-569B Pathway and Spaces
   3. ANSI/TIA/EIA-568B Telecommunications Cabling Standard
   4. BICSI Telecommunications Distribution Methods Manual
   5. UL 969 (1995; R 2001) Marking and Labeling Systems.

1.4 SUBMITTALS

A. Conform with the requirements of Section 01300 – Administrative Requirements and Section 17010 – Common Work Results for Communications.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Procedures: In accordance with Section 01600 – Product Requirements.

1.6 SEQUENCING

A. Not Used.

PART 2 PRODUCTS

2.1 COMMUNICATIONS CABLING LABELS, INTERIOR

A. Shall meet the legibility, defacement, exposure, and adhesion requirements of UL 969.

B. Shall be preprinted or computer printed type. Handwritten labels are not acceptable.

C. Provide vinyl substrate with a white printing area and black print. If cable jackets are white, provide cable label with printing area that is any other color than white, preferably orange or yellow – so that the labels are easily distinguishable.

D. Shall be flexible vinyl or other substrates to apply easy and flex as cables are bent.

E. Shall use aggressive adhesives that stay attached even to the most difficult to adhere to jacketing.

F. Manufacturers:

1. Cable Type – Silver Satin
   a. Brady TLS2200 labels – PTL-31-427
   b. Brady laser printable labels – LAT-18-361, LAT-53-361
   c. Or equal.
2. Cable Type – 4 pair UTP
   a. Brady TLS2200 labels – PTL-31-427
   b. Brady laser printable labels – LAT-18-361, LAT-53-361
   c. Or equal.
3. Cable Type – 4 Pair STP
   a. Brady TLS2200 labels – PTL-21-427
   b. Brady laser printable labels – LAT-19-361
   c. Or equal.
4. Cable Type – 25 pair copper
   a. Brady TLS2200 labels – PTL-21-427
   b. Brady laser printable labels – LAT-19-361
   c. Or equal.
5. Cable Type – 50 pair copper
   a. Brady TLS200 labels – PTL-33-427
   b. Or equal.
6. Cable Type – 100 pair copper
   a. Brady TLS2200 labels – PTL-34-427
   b. Or equal.
7. Cable Type – 6-12 strand fiber
   a. Brady TLS2200 labels – PTL-21-427
   b. Or equal.
8. Cable Type – RG-6 Coax
   a. Brady TLS2200 labels – PTL-31-427, PTL-32-427
   b. Brady laser printable labels – LAT-18-361, LAT-53-361
   c. Or equal.
9. Cable Type – RG-59 Coax
   a. Brady TLS2200 labels – PTL-31-427, PTL-32-427
   b. Brady laser printable labels – LAT-18-361, LAT-53-361

10. Cable Bundles
    a. Brady TLS2200 labels – PTL-12-109
    b. Or equal.

2.2 COMMUNICATIONS CABLE LABELS, OUTSIDE PLANT

A. Cable Tags in Manholes, Handholes, and Vaults
   1. Provide tags for communications cable or wire located in manholes, handholes, and vaults.
      a. The tags shall be polyethylene.
      b. The tags shall be machine printed – handwritten tags are not acceptable.
   2. Polyethylene Cable Tags
      a. Provide tags of polyethylene that have an average tensile strength of 3250 pounds per square inch; and that are .08 inch thick (minimum), non-corrosive, non-conductive, resistive to acids, alkalis, organic solvents, and salt water; and distortion resistant to 170 degrees F.
      b. Provide .05 inch (minimum) thick black polyethylene tag holder.
      c. Provide a one-piece nylon, self-locking tie at each end of the cable tag.
      d. Ties shall have a minimum loop tensile strength of 175 pounds. The cable tags shall have black block letters, numbers, and symbols one inch high on a yellow background.
      e. Letters, numbers, and symbols shall not fall off or change positions regardless of the cable tag's orientation.
   3. Manufacturers:
      a. Brady
      b. Or equal.

2.3 CLOSET HARDWARE LABELS

A. Shall meet the legibility, defacement, exposure, and adhesion requirements of UL 969.
B. Shall be preprinted or computer printed type. Handwritten labels are not acceptable.
C. Where insert type labels are used provide clear plastic cover over label.
D. Manufacturer:
   1. Copper Patch Panels
      a. 6 port group
         i. Ortronics OR-70700408
         ii. Or equal.
      b. Patch Panel Name Label
         i. Brady
         ii. Or equal.

2.4 GROUNDING AND BONDING, PATHWAY, AND SPACE LABELS

A. Shall meet the legibility, defacement, exposure and adhesion requirements of UL 969.
B. Shall be preprinted or computer printed type. Handwritten labels are not acceptable.
C. Manufacturers:

1. Brady Corporation
   a. TLS2200 labels
      i. PTL-20-422, Size 2.0" x 1.0"
      ii. PTL-22-422, Size 3.0" x 1.0"
      iii. PTL-37-422, Size 3.0" x 1.9"
      iv. PTL-23-422, Size 4.0" x 1.0"
      v. PTL-38-422, Size 4.0" x 1.0"
   b. Laser printable labels
      i. LAT-13-747, Size 1.875" x 0.833"
      ii. LAT-24-747, Size 1.75" x 1.0"
      iii. LAT-32-747, Size 3.0" x 0.9"
      iv. LAT-33-747, Size 2.0" x 1.437"
      v. LAT-34-747, Size 3.0" x 1.437"
   c. Continuous tape for TLS2200
      i. PTL-8-422, Size 0.5", white polyester
      ii. PTL-8-430, Size 0.5", clear polyester
      iii. PTL-8-439, Size 0.5", white vinyl
      iv. PTL-42-439, Size 1.0", white vinyl
      v. PTL-43-439, Size 1.9", white vinyl
2. Or equal.

2.5 WORKSTATION LABELS

A. Shall meet the legibility, defacement, exposure and adhesion requirements of UL 969.
B. Shall be preprinted or computer printed type. Handwritten labels are not acceptable.
C. Where insert type labels are used provide clear plastic cover over label.
D. Manufacturers:
   1. Ortronics OR-70400411
   2. Or equal.

2.6 NAMEPLATES

A. Field Fabricated Nameplates
   1. Features/Function/Construction
      a. Provide laminated plastic nameplates for each equipment enclosure, relay, switch, and device; as specified or as indicated on the drawings.
      b. Comply with ASTM D 709.
      c. Each nameplate inscription shall identify the function and, when applicable, the position.
      d. Nameplates shall be melamine plastic, 0.125 inch thick, white with black center core.
      e. Surface shall be matte finish.
      f. Corners shall be square.
      g. Accurately align lettering and engrave into the core.
      h. Minimum size of nameplates shall be 1" x 2.5".
      i. Lettering shall be a minimum of 0.25 inch high normal block style.

PART 3 EXECUTION

3.1 GENERAL

A. Apply labeling to clean surfaces free of oil, dust, solvents, or loose material.
B. Apply after Project painting in area of application is complete.
C. Apply to locations where labeling will not be damaged, covered over, or in the way of the infrastructure or system.
D. Apply labeling right side up, parallel to major edges of surfaces to which it is applied. When no line is evident, apply parallel to the floor line. Correct conditions of labeling applied out of true.
E. Protect installed labeling from damage.
F. Replace labeling that is defaced, illegible or peeling off the surface to which it is applied.

3.2 IDENTIFICATION & LABELING

A. The Owner will provide the Contractor copies of the Contract Drawings showing station outlets with Owner assigned data & voice jack ID numbers. Label all installed work according to this master set.
B. Workstation faceplates
   1. Workstation faceplates shall be labeled according to the format *fs-n*, where:

      f = numeric character(s) identifying the floor of the building occupied by the BDF

      s = alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

      n = three numeric characters designating the port on a patch panel on which a four-pair horizontal cable is terminated in the BDF

      Example: Faceplate with cables terminating on the 6th ports of each patch panel in the second BDF on the first floor is identified as:

      1B-006

   2. The cover plate areas directly above and beneath the jacks are the labeling areas. In the top area, using the specified means, label the faceplate number assigned on the contract documents.
C. Pathways
   1. Pathways shall be marked at each endpoint and at all intermediate pull or junction boxes. In the case of partitioned pathways (i.e. innerduct) each partition shall have a unique identifier.
   2. Use adhesive type labels as specified in the Products portion of this section.
D. Labels shall be affixed at the entry to all telecommunications rooms and spaces (including entrance facilities, communication equipment rooms, communication equipment spaces and work areas).

1. Use adhesive type labels for all communications space labeling as specified in the Products portion of this section.
2. Affix labels to entrance doors – coordinate location with Owner's Representative.

E. Cables

1. Horizontal, Building Backbone, and Campus Backbone cables shall be marked within 12" of each endpoint or to innerduct in which the cable is installed.
2. Except where installed in innderduct or conduit, all backbone fiber optic cable shall have affixed to the outer jacket, labels of a bright color that contain at least the legend "FIBER OPTIC CABLE." These labels must be affixed at intervals no greater than 10 ft.
3. Within every manhole, vault, or pullbox and within 4 ft of the entrance into a building every backbone cable's assigned identifier shall be affixed to either the cable's outer jacket or to an innerduct in which the cable is installed.
4. Any cable installed in conduit shall be labeled at all intermediate pull or junction boxes.
5. Use adhesive type labels as specified in the Products portion of this section.
6. Affix labels to cables – marking cables is not permitted.
7. Where cable is fully encased in innerduct, label the outside of the innerduct with the cable label and, where the contents are fiber optic cabling, the "FIBER OPTIC CABLE" label.
8. Horizontal cables shall be labeled according to the format fs-an, where:

   f = numeric character(s) identifying the floor of the building occupied by the BDF

   s = alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

   a = one or two alpha characters uniquely identifying a single patch panel or a group of patch panels with sequentially numbered ports

   n = three numeric characters designating the port on a patch panel on which a four-pair horizontal cable is terminated in the BDF

   Example: 9th cable terminating on the first patch panel in the 3rd BDF on the 8th floor is identified as:

   8C-A009

9. A unique building backbone pair or optical fiber identifier shall be used to identify each single copper pair or each single optical fiber in a backbone cable between two BDFs in one building, and shall have a format fs_1/fs_2-*n.d*, where:

   fs_1/fs_2-*n* = a building backbone cable identifier

d = two to four numeric characters identifying a single copper pair or a single optical fiber

Example: Building backbone fiber connecting BDFs 1A and 2A within a building

Cable 1, Pair 1 = 1A/2A-1.1,2
Cable 1, Pair 2 = 1A/2A-1.3,4
Cable 1, Pair 3 = 1A/2A-1.5,6

10. A unique campus backbone pair or optical fiber identifier shall be assigned to each pair or optical fiber in a backbone cable connecting BDFs in different buildings, and it shall have the format $[b_1\text{-}fs_1]/[b_2\text{-}fs_2]$-n.d, where:

$[b_1\text{-}fs_1]/[b_2\text{-}fs_2]$-n = campus backbone cable identifier
d = two to four numeric characters identifying a single copper pair or a single optical fiber

Example: Campus backbone fiber Cables 1 and 2 connecting Building SLO101, BDF 1A, and Building SLO108, BDF 1B

Cable 1, Pair 1 = [SL0101-1A]/[SL0108-1B]-1.1,2
Cable 1, Pair 2 = [SL0101-1A]/[SL0108-1B]-1.3,4

Cable 2, Pair 1 = [SL0101-1A]/[SL0108-1B]-2.1,2
Cable 2, Pair 2 = [SL0101-1A]/[SL0108-1B]-2.3,4

F. Patch Panels

1. Fiber patch panels shall be marked using adhesive labels indicating the identifiers of all fibers installed to them.
2. If not shown on the contract documents, Owner's Representative will provide specific fiber ID information.
3. Category rated patch panels shall be labeled according to the format fs-a, where:

f = numeric character(s) identifying the floor of the building occupied by the BDF

s = alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

a = one or two alpha characters uniquely identifying a single patch panel or a group of patch panels with sequentially numbered ports

Example: First patch panel in the first BDF of the first floor is identified as:

1A-A

G. 66 Blocks

1. Each cable termination position on 66 blocks shall be labeled with number designators.
   a. All backbone copper cable termination blocks shall be labeled with both the pair count of every 5th pair and the cable's assigned identifier.

H. Grounding and Bonding

1. The Telecommunications Main Grounding Busbar (TMGB) shall be labeled as such with an adhesive type label affixed reading TMGB.
2. The Telecommunications Grounding Busbar (TGB) within a BDF shall be labeled as such with an adhesive type label affixed which follows the format TGB-*fs*, where:

   TGB = Telecommunications Grounding Busbar

   f = numeric character(s) identifying the floor of the building occupied by the BDF

   s = alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

3. The conductor connecting the TMGB to the building ground shall be labeled at each end with an adhesive label affixed in a visible location as close as practicable to the bonding point at each end of the conductor. The label shall follow the format BC-TMGB, where:

   BC = Bonding Conductor

   TMGB = Telecommunications Main Grounding Busbar

   f = numeric character(s) identifying the floor of the building occupied by the BDF

   s = alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

4. The conductor connecting the TGB within a BDF to the building ground shall be labeled at each end with an adhesive label affixed in a visible location as close as practicable to the bonding point at each end

of the conductor. The label shall follow the format BC-TGB-*fs*, where:

BC = Bonding Conductor

TGB = Telecommunications Grounding Busbar

f = numeric character(s) identifying the floor of the building occupied by the BDF

s = alpha character(s) uniquely identifying the BDF on floor *f*, or the building area in which the BDF is located

I. Firestops

1. Each firestop shall be labeled at each location where firestopping is installed, on each side of the penetrated fire barrier, within 12 inches of the firestopping material.
2. Firestops shall be labeled according to the format FS-fn, where:

FS = Firestop

f = numeric character(s) identifying the floor of the building occupied by the BDF

n = three numeric characters designating firestop sequential number.

END OF SECTION

SECTION 17100
STRUCTURED CABLING, BASIC MATERIALS & METHODS

PART 1 GENERAL

1.1 SCOPE OF WORK

A. This Section defines commons means and methods for the work of the following Sections:
   1. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures.
   2. Section 17119 - Communications Termination Blocks and Patch Panels.
   3. Section 17123 - Communications Cable Management.
   4. Section 17150 - Communications Horizontal Cabling.

B. Related work specified in other Sections.
   1. Section 16080 - Electrical Commissioning.
   2. Section 16261 - Static Uninterruptible Power Supply.
   3. Section 16620 - Fire Alarm System.
   4. Section 17054 - EMCS - Communications Devices.

1.2 RELATED DOCUMENTS

A. Section 17010 - Common Work Results for Communications applies to the work of this Section.

1.3 REERENCES

A. Usage: In accordance with Section 01110 - Summary of Work.

B. In addition to the requirements of Section 17010 - Common Work Results for Communications, conform to the applicable portions of the following standards agencies:
   1. American Society for Testing and Materials (ASTM).
      a. ASTM A228/A228M-02 Steel Wire, Music Spring Quality.
   2. Bellcore.
      a. TR-NWT-000253Intermediate Reach, 1,OC3.
   3. Telecommunications Industry Association/Electronic Industries Association (TIA/EIA)Telecommunications Industry Association/Electronic Industries Association (TIA/EIA).
      a. TIA/EIA-455-B Standard Test Procedure for Fiber Optic Fibers, Cables, Transducers, Sensors, Connecting and Terminating Devices, and other Fiber Optic Components (ANSI/TIA/EIA-455-B-98) Oct. 1998.
      b. TIA/EIA-455-1-BFOTPl - Cable Flexing for Fiber Optic Interconnecting Devices (ANSI/TIA/EIA-455-1B-98) Oct. 1998.
      c. TIA/EIA-455-2-CFOTP2 - Impact Test Measurements for Fiber Optic Devices (ANSI/TIA/EIA0455-2C-98) Jul. 1998.
      d. TIA/EIA-455-3-AFOTP3 - Procedure to Measure Temperature Cycling Effects on Optical Fibers, Optical Cable, and Other Passive Fiber Optic Components (May 1989).

e. TIA/EIA-455-5-CFOTP5 - Humidity Test Procedure for Fiber Optic Components (ANSI/TIA/EIA-455-5C-2002).
f. TIA/EIA-455-7FOTP7 - Numerical Aperture of Step-Index Multimode Optical Fibers by Output Far-Field Radiation Pattern Measurement (ANSI/TIA/EIA-455-7-92) Dec. 1992.
g. TIA/EIA-455-11-BFOTP11 - Vibration Test Procedure for Fiber Optic Components and Cables (ANSI/TIA/EIA-455-11B-94) Jut. 1994.
h. TIA/EIA-455-13-AFOTP13 - Visual and Mechanical Inspection of Fiber Optic Components, Devices, and Assemblies (ANSI/TIA/EIA-455-13A-02).
i. TIA/EIA-455-20-BFOTP20 - IEC60793-1-26 Optical Fibers - 1-46: Measurement Methods and Test Procedures - Monitoring of Changes in Optical Transmittance (ANSI/TIA/EIA-455-20-B-2004).
j. EIA TIA-455-21-A(2) FOTP-21 (r2002) - Mating Durability of Fiber Optic Interconnecting Devices.
k. TIA/EIA-455-25-CFOTP25 - Impact Testing of Optical Fiber Cables and Cable Assemblies (ANSI/TIA/EIA-455-25C-2002).
l. TIA/EIA-455-31-CFOTP31 - Proof Testing Optical Fibers by Tension (ANSI/TIA/EIA-455-31C-95) (R04).
m. TIA-455-33BFOTP33 -Optical Fiber Cable Tensile Loading and Bending Test 2005.
n. TIA/EIA-455-34-AFOTP34 - Interconnection Device Insertion Loss Test (ANSI/TIA/EIA-455-34A-99).
o. TIA/EIA-455-37-AFOTP37 - Low or High Temperature Bend Test for Fiber Optic Cable (ANSI/TIA/EIA-455-37A-93) (R-2002).
p. TIA/EIA-455-38FOTP38 - Measurement of Fiber Strain in Cables Under Tensile Load (ANSI/TIA/EIA-455-38-95) Nov. 1995.
q. TIA/EIA-455-39-BFOTP39 - Fiber Optic Cable Water Wicking Test (ANSI/TIA/EIA-45 5- 39B-03).
r. TIA/EIA-455-41-AFOTP41 - Compressive Loading Resistance of Fiber Optic Cables (ANSI/TIA/EIA-455-41A-01).
s. TIA/EIA-455-42-AFOTP42 - Optical Crosstalk in Fiber Optic Components (ANSI/TIA/EIA-455-42-A-1989) (R2001).
t. TIA/EIA-455-43-AFOTP43 - Output Near-Field Radiation Pattern Measurement of Optical Waveguide Fibers (ANSI/TIA/EIA-455-43A-99) Oct. 1999).
u. TIA/EIA-455-54-BFOTP54 - Mode Scrambler Requirements for Overfilled Launching Conditions to Multimode Fibers (ANSI/TIA/EIA-455-54B-98) (R2001).
v. TIA/EIA-455-56-BFOTP56 -Test Method for Evaluating Fungus Resistance of Optical Fiber and Cable (ANSI/TIA/EIA-455-56B-95) (R2004).

w. TIA/EIA-455-57-BFOTP57 - Preparation and Examination of Optical Fiber Endface for Testing Purposes (ANSI/TIA/EIA-455-57B-96) (R2000).
x. TIA/EIA-455-64FOTP64 - Procedure for Measuring Radiation-Induced Attenuation in Optical Fibers and Optical Cables (ANSI/TIA/EIA-455-64-97) (R2002).
y. TIA/EIA-455-67AFOTP67 - IEC 60793-1-51 Optical Fibers Part 1-51: Measurement Methods and Test Procedures - Dry Heat (ANSI/TIA-455-67 -A-2003).
z. TIA/EIA-455-72FOTP72 - Procedure for Measuring Temperature and Humidity Cycling Aging Effects on Optical Characteristics of Optical Fibers (ANSI/TIA/EIA-455-72-97) (R2001).
aa. TIA/EIA-455-73FOTP73 - Procedure for Measuring Temperature and Humidity Cycling Aging Effects on Mechanical Characteristics of Optical Fibers. (ANSI/TIA/EIA-455-73-97) (R2001).
ab. TIA/EIA-455-74AFOTP74 - IEC 60793-1-53 Optical Fibers Part 1-53: Measurement Methods and Test Procedures - Water Immersion.
ac. TIA/EIA-455-78-BFOTP-78 - IEC 60793-1-40 Optical Fibers Part 140: Measurement Methods and Text Procedures – Attenuation.
ad. TIA/EIA-455-80-CFOTP80 - IEC 60793-1-53 Optical Fibers Part 1-44: Measurement Methods and Test Procedures - Cut-off.
ae. TIA/EIA-455-84-BFOTP84 - Jacket Self-Adhesion (Blocking) Test for Fiber Optic Cable (ANSI/TIA/EIA-455-84B-98) (R 2003).
af. TIA/EIA-455-85-AFOTP85 - Fiber Optic Cable Twist Test (ANSI/TIA/EIA-455-85A-92) (R99) May. 1999.
ag. TIA/EIA-455-86FOTP86 - Fiber Optic Cable Jacket Shrinkage (ANSI/TIA/EIA-455-86-83) (R 90) (R99) May. 1999.
ah. TIA/EIA-455-87-BFOTP87 - Fiber Optic Cable Knot Test (ANSI/TIA/EIA-455-87B-93) (R99) May. 1999.
ai. TIA/EIA-455-88FOTP88 - Fiber Optic Cable Bend Test Jun. 2001.
aj. TIA/EIA-455-89-BFOTP89 - Optical Fiber Cable Jacket Elongation and Tensile Strength (ANSI/TIA/EIA-455-89B-98) (R 2003).
ak. TIA/EIA-455-91FOTP9l - Fiber Optic Cable Twist-Bend Test (ANSI/TIA/EIA-455-9l-86) (R 2003).
al. TIA/EIA-455-95-AFOTP95 - Absolute Optical Power Test for Optical Fibers and Cables (ANSI/TIA/EIA-455-95-A-2000) Apr. 2000.
am. TIA/EIA-455-l 00-AFOTP100 - Gas Leakage Test for Gas-Blocked Fiber Optic Cables (ANSI/TIA/EIA-455-l00A-89) (R99) May. 1999.
an. TIA/EIA-455-l04-AFOTP104 - Fiber Optic Cable Cyclic Flexing Test (ANSI/TIA/EIA-455-l04A-93)(R2000) Jul. 2000.
ao. TIA/EIA-455-1 07-AFOTP 1 07 - Determination of Component Reflectance or Link/System Return Loss Using a Loss Test Set (ANSI/TIA/EIA-455-107A-99) Feb. 1999.

ap. TIA/EIA-455-111FOTP111 - Procedure for the Measurement of Optical Fiber Curl (ANSI/TIA/EIA-455-111-2000) Jul. 2000.

aq. TIA/EIA-455-113FOTP113 - Polarization-Mode Dispersion Measurement of Single-Mode Optical Fibers by the Fixed Analyzer Method (ANSI/TIA/EIA-455-113-96) (R 2001).

ar. TIA/EIA-455-122AFOTP122 - Polarization-Mode Dispersion Measurement for Single-Mode Optical Fibers by Stokes Parameter Evaluation (ANSI/TIA/-455-122-A-02).

as. TIA/EIA-455-123FOTP123 - Measurement of Optical Fiber Ribbon Dimensions (ANSI/TIA/EIA-455-123-2000) Jun. 2000.

at. TIA/EIA-455-124AFOTP124 - Polarization-Mode Dispersion Measurement for Single-Mode Optical Fibers by Interferometry (ANSI/TIA/EIA-455-124-A-04).

au. TIA/EIA-455-126FOTP126 - Spectral Characterization of LEDs (ANSI/TIA/EIA-455-126-2000) Feb. 2000.

av. TIA/EIA-455-128FOTP128 - Procedures for Determining Threshold Current of Semiconductor Lasers (ANSI/TIA/EIA-455-128-96) (R 2003).

aw. TIA/EIA-455-129FOTP129 - Procedures for Applying Human Body Model Electrostatic Discharge Stress to Package Optoelectronic Components (ANSI/TIA/EIA-455-129-96) (R 2003).

ax. TIA/EIA -4 5 5-131 FOTP 131 - Measurement of Optical Fiber Ribbon Residual Twist (ANSI/TIA/EIA-455-131-97) (R2000) Oct. 2000.

ay. TIA/EIA-455-132-AFOTP132 - Measurement of the Effective Area of Single-Mode Optical Fiber (ANSI/TIA/EIA-455-132-2001) Jun. 2001.

az. TIA/EIA-455-133AFOTP133 IEC-60793-1-22 Optical Fibers - Part 1-22: Measurement Methods and Test Procedures - Length (ANSI/TIA-455-133-A-03).

ba. TIA/EIA-455-134FOTP134 - Measurement of Connector Ferrule Hole Inside Diameter (ANSI/TIA/EIA-455-134-96) (R 2002).

bb. TIA/EIA-455-135FOTP135 - Measurement of Connector Ferrule Inside and Outside Diameter Circular Runout (ANSI/TIA/EIA-455-135-96) (R 2002).

bc. TIA/EIA-455-141FOTP141 - Twist Test for Optical Fiber Ribbons (ANSIITIA/EIA-455-141-1999) Oct. 1999.

bd. TIA/EIA-455-157FOTP157 - Measurement of Polarization Dependent (PDL) of Single-mode Fiber Optic Components (ANSI/TIA/EIA-455-157-2000) May. 2000.

be. TIA/EIA-455-158FOTP158 - Measurement of Breakaway Frictional Force in Fiber Optic Connector Alignment Sleeves (ANSI/TIA/EIA-455-158-97) (R 2001).

bf. TIA/EIA-455-160AFOTPI60 - IEC 60793-1-50 Optical Fibers - Part 1-50: Measurement Methods and Test Procedures - Damp Heat (Steady State) (ANSI/TIA-455-160-A-03).

bg. TIA/EIA-455-162-AFOTPI62 - Fiber Optic Cable Temperature-Humidity Cycling (ANSIITIAIEIA-455-162A-99) Aug. 1999.

bh. TIA/EIA-455-175-BFOTPI75 - IEC 60793-1-42 Optical Fibers Part 1-42: Measurement Methods and Test Procedures - Chromatic Dispersion (ANSI/TIA-455-175-B-03).

bi. TIA/EIA-455-176AFOTPI76 - IEC 60793-1-20 Optical Fibers Part 1-20: Measurement Methods and Test Procedures - Fiber Geometry (ANSI/TIA-455-176-A-03).

bj. TIA/EIA-455-177-BFOTPI77 - IEC 60793-1-43 Optical Fibers Part 1-43: Measurement Methods and Test Procedures - Numerical Aperture (ANSI/TIA-455-177-B-03).

bk. TIA/EIA-455-178-BFOTPI78 - IEC 60793-1-32 Optical Fibers Part 1-32: Measurement Methods and Test Procedures - Coating Stripability (ANSI/TIA-455-178-B-03).

bl. TIA/EIA-455-180-AFOTPI80 - Measurement of the Optical Transfer Coefficients of a Passive Branching Device (Coupler) (ANSI/TIA/EIA-455-180-A-99) Dec. 1999.

bm. TIA/EIA-455-181FOTPI81 - Lightning Damage Susceptibility Test for Fiber Optic Cables with Metallic Components (ANSI/TIA/EIA - 455-181-92) (2001) Jul. 2001.

bn. TIA/EIA-455-183FOTPI83 - Hydrogen Effects on Optical Fiber Cable (ANSI/TIA/EIA-455-183-2000) Jul. 2000.

bo. TIA/EIA-455-184FOTPI84 - Coupling Proof Overload Test for Fiber Optic Interconnecting Devices (ANSI/TIA/EIA-455-184-91) (R95) (R99) Oct. 1999.

bp. TIA/EIA-455-185FOTPI85 - Strength of Coupling Mechanism for Fiber Optic Interconnecting Devices (ANSI/TIA/EIA-455-185-91) (R95) (R99) Oct. 1999.

bq. TIA/EIA-455-186FOTPI86 - Gauge Retention Force Measurement for Fiber Optic Components (ANSI/TIA/EIA-455-186-91) (R 2004).

br. TIA/EIA-455-187FOTPI87 - Engagement and Separation Force Measurement of Fiber Optic Connector Sets (ANSI/TIA/EIA-455-187-91) (R 2004).

bs. TIA/EIA-455-191-BFOTPI91 - IEC 60793-1-45 Optical Fibers Part 1-45: Measurement Methods and Test Procedures - Mode Field Diameter (ANSI/TIA-455-191-B-2003).

bt. TIAIEIA-455-192FOTPI92 - H-Parameter Test Method for Polarization- Maintaining Optical Fiber (ANSIfTIAIEIA-455-192-99) May. 1999.

bu. TIA/EIA-455-193FOTPI93 - Polarization Crosstalk Method for Polarization-Maintaining Optical Fiber and Components (ANSI/TIA/EIA-455-193-99) May. 1999.

bv. TIA/EIA-455-194FOTPI94 - Measurement of Fiber Pushback in Optical Connectors (ANSI/TIA/EIA-455-194-2000) Jan. 2000.

bw. TIA/EIA/455-195AFOTPI95 - IEC 60793-1-21 Optical Fibers - Part 1-21: Measurement Methods and test Procedures - Coating Geometry (ANSI/TIA-455-195-A-2003).

bx. TIA/EIA-455-197rOTPI97 - Differential Group Delay Measurement of Single-mode Components and Devices by the Differential Phase Shift Method (ANSI/TIA/EIA-455-197-2000) Jul. 2000.

by. TIA/EIA-455-201FOTP201 - Return Loss of Commercial Polarization - Maintaining Fiber or Polarizing Fiber Pigtailed Devices and Cable Assemblies Aug. 2001.

bz. TIA/EIA-455-203FOTP203 - Launched Power Distribution Measurement Procedure for Graded-Index Multimode Fiber Transmitters (ANSI/TIA/EIA-455-203-2001) Jun. 2001.

ca. TIA/EIA-455-204FOTP204 - Measurement of Bandwidth on Multimode Fiber (ANSI/TIA/EIA-455-204-2000) Dec. 2000.

cb. TIA/EIA-4920000-B Generic Specification for Optical Waveguide Fibers (ANSI/TIA/EIA-4920000-B-97) (R2002).

cc. TIA/EIA-492AOOO-A Sectional Specification for Class Ia Multimode, Graded-Index Optical Waveguide Fibers (ANSI/TIA/EIA-492AOOO-A-97) (R 2002).

cd. TIA/EIA-492AAAA-A Detail Specification for 62.5-um Core Diameter/125-um Cladding Diameter Class Ia Graded-Index Multimode Optical Fibers (ANSI/TIA/EIA-492AAAA-A-98) (R 2002).

ce. TIA/EIA-492AAAB Detail Specification for 50-urn Core Diameter/125-um Cladding Diameter Class Ia Graded-Index Multimode Optical Fibers (ANSI/TIA/EIA-492AAAB-98) (R 2002).

cf. TIA/EIA-492COOO Sectional Specification for Class IVa DispersionUnshifted Single-Mode Optical Fibers (ANSI/TIA/EIA-492COOO-98) (R 2002).

cg. TIA/EIA-492CAAA Detail Specification for Class IVa Dispersion-Unshifted Single-Mode Optical Fibers (ANSI/TIA/EIA-492CAAA-98) May 1998 (R 2002).

ch. TIA/EIA-492CAAB Detail Specification for Class IVa Dispersion-Unshifted Single-Mode Optical Fibers with Low Water Peak (ANSI/TIA/EIA-492CAAB-2000) Sep.2000.

ci. TIA/EIA-492EOOO Sectional Specification for Class IV d NonzeroDispersion Single-Mode Optical Fibers for the 1550 nm Window (ANSI/TIA/EIA-492EOOO-96) (R 2002).

cj. EIA/TIA-526-7 OFSTP-7 - Optical Power Loss of Installed Single-Mode Fiber Cable Plant (2003).

ck. EIA/TIA-526-14A OFSTP-14 - Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant (1998) (R 2003).

cl. TIA-559 Single-Mode Fiber Optic System Transmission Design Mar. 1989 (R 2002).
cm. TIA/EIA-568-B.1 Commercial Building Telecommunications Cabling Standard - Part 1: General Requirements (ANSI/TIA/EIA-568-B.1-2001).
cn. TIA/EIA-568-B.l-1 Commercial Building Telecommunications Cabling Standard - Part 1: General Requirements - Addendum 1 - Minimum 4-Pair UTP and 4-Pair ScTP Patch Cable Bend Radius (ANSI/TIA/EIA-568-B.I-I-2001).
co. TIA/EIA-568-B.2 Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted Pair Cabling Components (ANSI/TIA/EIA-568-B.2-2001).
cp. TIA/EIA-568-B.3 Optical Fiber Cabling Components Standard (ANSI/TIA/EIA -568- B.3-2000).
cq. TIA-569-B Commercial Building Standard for Telecommunications Pathways and Spaces.
cr. EIA TIA/EIA-604-2-A-2003 FOCIS 2 Fiber Optic Connector Intermateability Standard, Type Fiber Jack Connector.
cs. EIA TIA/EIA-604-3A(2000) FOCIS 3 Fiber Optic Connector Intermateability Standard - Standard Type SC.
ct. EIA TIA/EIA-604-12(2000) FOCIS 12 Fiber Optic Connector Intermateability Standard Type MT-RJ.
cu. EIA TIA/EIA-606-A(2002) Administration Standard for the Telecommunications Infrastructure (ANSI/TIA/EIA-606).

4. Federal Communications Commission (FCC).
   a. The Code of Federal Regulations, Title 47, Telecommunications, Chapter 1 - FCC Part 68 (1982 issue or latest revision) (47 CFR 68).
5. Institute of Electrical and Electronic Engineers.
   a. IEEE 383-2003 Standard for Qualifying Class IE Electric Cables and Field Splices for Nuclear Power Generating Stations.
   b. IEEE 100-00 The Authoritative Dictionary of IEEE Standards Terms.
6. Insulated Cable Engineers Association (ICEA).
   a. ICEA S-56-434 (1983, 5th Ed.) Polyolefin Insulated Communication Cables for Outdoor Use.
   b. ICEA S-83-596(2001) Fiber Optic Premises Distribution Cable.
   c. ICEA S-90-661(2002) Category 3,5 and 5e Individually Unshielded Twisted Pair Indoor Cables With or Without Overall Shield for use in General Purpose and LAN Communications Wiring Systems - Technical Requirements.
7. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA).
   a. NEMA WC 63.1(2000) Twisted Pair Premise Voice and Data Communications Cables.
8. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).

a. NFPA 70 National Electrical Code.

9. Underwriters Laboratories, Inc. (UL).
   a. UL 444(2002; Bul. 2002, 2003) Communications Cables.
   b. UL 910(1998) Flame-Propagation and Smoke-Density Values for Electrical and Optical-Fiber Cables Used in Spaces Transporting Environmental Air.
   c. UL 1286(1999; R 2004) Office Furnishings.
   d. UL 1581 Reference Standard for Electrical Wires, Cables, and Flexible Cords. Oct. 2001.
   e. UL 1666(2000; R 2002) Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts.
   f. UL 1863(2000; R 2004) Communications Circuit Accessories.

1.4 DEFINITIONS

A. Unless otherwise specified or indicated, electrical and electronics terms used in this specification shall be as defined in:
   1. ANSI/TIA/EIA-568-B.l.
   2. ANSI/TIA/EIA-568-B.2,
   3. ANSI/TIA/EIA-568-B.3,
   4. ANSI/TIA/EIA-569-B,
   5. ANSI/TIA/EIA-606-A,
   6. IEEE Std 100 and
   7. this Section.

B. Campus Distributor (CD) - A distributor from which the campus backbone cabling emanates. (International expression for main cross-connect (MC).)

C. Building Distribution Facility (BDF) - A distributor in which the building backbone cables terminate and at which connections to the campus backbone cables may be made. (International expression for intermediate cross-connect (IC).)

D. Floor Distributor (FD) - A distributor used to connect horizontal cable and cabling subsystems or equipment. (International expression for horizontal cross-connect (HC).)

E. Telecommunications Room (TR) - An enclosed space for housing telecommunications equipment, cable, terminations, and cross-connects. The room is the recognized cross-connect between the backbone cable and the horizontal cabling.

F. Entrance Facility (EF) - An entrance to the building for both private and public network service cables (including antennae) including the entrance point at the building wall and continuing to the entrance room or space.

G. Equipment Room (ER) - A centralized space for telecommunications equipment that serves the occupants of a building. Equipment housed therein is considered distinct from a telecommunications room because of the nature of its complexity.

H. Open Cabling - Cabling that is not run in a raceway as defined by NFPA 70. This refers to cabling that is "open" to the space in which the cable has been installed and is therefore exposed to the environmental conditions associated with that space.

I. Open Office - A floor space division provided by furniture, movable partitions, or other means instead of by building walls.

J. Pathway - A physical infrastructure utilized for the placement and routing of telecommunications cable.

1.5 SUBMITTALS

A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.6 DELIVERY, STORAGE AND HANDLING

A. Comply with requirements of Section 01600 - Product Requirements, Section 17010 - Common Work Results for Communications Systems and the following:

B. Shipping Conditions:
   1. All cable shall be shipped on reels or manufacturer supplied "handy boxes".
   2. The diameter of the drum shall be at least 13 times the diameter of the cable.
   3. The reels shall be substantial and so constructed as to prevent damage during shipment and handling.
   4. Secure the outer end of the cable to the reel head so as to prevent the cable from becoming loose in transit.
   5. Project the inner end of the cable into a slot in the side of the reel, or into a housing on the inner slot of the drum, in such a manner and with sufficient length to make it available for testing.
   6. The inner end shall be fastened so as to prevent the cable from becoming loose during installation. End seals shall be applied to each of the cables to prevent moisture from entering the cable.

C. Storage:
   1. Retain factory cable protection until installation. Supplement with heavy gauge plastic sheeting if factory protective membrane is pierced prior to installation. Tape ends and seams water and dust tight.
   2. The reels with cable shall be suitable for outside storage conditions when the temperature ranges from minus 40 degrees C to plus 65 degrees C, with relative humidity from 0 to 100 percent.
   3. Protect cable reels from physical damage from site construction vehicles or from settling into the soil.
   4. Equipment, other than cable, to be delivered and placed in storage shall be stored with protection from the weather, humidity and temperature variation, dirt and dust, or other contaminants.

1.7 SEQUENCING

A. Not Used.

1.8 PERFORMANCE STANDARDS

A. Telephone (Voice) Copper Cabling Plant:
   1. Suitable for direct connection to the Public Switched Network in accordance with rules set forth by FCC Part 68, California Public Utilities Commission, and other Authorities Having Jurisdiction.
   2. Category 3 as defined in TIA/EIA-568-B.2 paragraph 4.4.

B. Horizontal (Station) Copper Cabling – Permanent Link.
   Category 6, as defined in ANSI/TIA/EIA-568-B.2-1, Chapter 7 (*Cabling Transmission Requirements*), with the test measurements performed in accordance with ANSI/TIA/EIA-568-B.2-1, Annex A (*Cabling [field] measurement procedures*

[normative]) using a Level III field tester, as defined in ANSI/TIA/EIA-568-B.2-1, Annex B (*Test Instruments [normative]*). Cabling shall meet or exceed the requirements stated therein.

C. Fiber Optic Cabling
   1. Optical Budget, any end to end link not to exceed the sum of the following:
      a. Optical fiber loss (attenuation).
      b. Splice loss.
      c. Connector loss.
   2. Optical fiber loss shall be the optical fiber specified cable performance, pro-rated for total link distance.
      a. Fiber Loss, Multimode, not to exceed:
         i. At 850 nanometers, 3.0 dB per Kilometer.
         ii. At 1300 nanometers, 1.0 dB per Kilometer.
      b. Fiber Loss, Single mode, Outside Plant Cable, not to exceed:
         i. At 1310 nanometers, 0.35 dB per Kilometer.
         ii. At 1550 nanometers, 0.25 dB per Kilometer.
      c. Fiber Loss, Single mode, Campus Backbone Cable, not to exceed:
         i. At 1310 nanometers, 0.4 dB per Kilometer.
         ii. At 1550 nanometers, 0.3 dB per Kilometer.
   3. Splice Loss.
      a. Multimode.
         i. 0.15 dB for each fusion splice.
      b. Single Mode.
         i. 0.06 dB for each fusion splice.
   4. Connector Loss
      a. Multimode.
         i. 0.75 dB for each mated pair of type SC Connector.
      b. Single Mode.
         i. 0.75 dB for each mated pair of type SC, Ultra Physical Contact Connector.
         ii. 0.30 dB for each mated pair of type SC, Angled Physical Contact Connector.

1.9 TESTING

A. GENERAL
   1. Test and report on each intermediate cabling segment separately, including station cabling, horizontal distribution (each segment, if multiple) and telecommunications room wiring.
   2. Test each end-to-end cable link.
   3. Submit machine-generated documentation and raw data of all test results on Contractor-provided, and Owner's Representative approved, forms; and in electronic format approved by the Owner's Representative.
   4. Provide machine-generated data on an appropriate disk media (CD-ROM CD-R format) to be transferred to the Owner's computers.

a. Where the machine-generated documentation requires use of a proprietary computer program to view the data, provide the Owner with 1 licensed copy of the software.

5. Provide registered testing software used for the actual tests to the Owner for review of test data.

B. Test Equipment:

1. Provide in conformance with the applicable requirements of 17010 Common Work Results for Communications.
2. Test systems using at least one (1) each of the following test measurement devices or their functional equivalents:
   a. Level III Category Category 6 Cable Tester – Agilent, Fluke, or equal.
   b. Outside Plant Voice Cabling Plant tester - capable of detecting shorts, opens, reversals, mis-wiring and crosstwists. (Siemon STM-8, Fluke or equal).
   c. Tone Test Sets.
   d. Optical power meter (HP, Corning Cable Systems, Fluke or equal). Site portable communications systems (walkie-talkie, cell phone or similar).
   e. Site portable communications systems (walkie-talkie, cell phone or similar).
   f. Any other items of equipment or materials required to demonstrate conformance with the Contract Documents.

C. Station Wiring, General.

1. Test station wire only after all pairs of station wire in an work area have been terminated at both ends, and no work of this Section or other Sections may cause physical disturbance to the wiring.
2. Correct any and all transpositions found. Retest.
3. If any conductor in a station wire tests either open or short, then the entire station wire is to be removed, replaced, and re-tested.

D. Inside Category 6 Cabling.

1. Using the listed Category 6 cable test set, test 100% of cabling and submit report on the parameters specified for Category 6 cabling in this Section. Report whether tested link passes or fails the Category 6 standards in Part 2 of this Section.
2. Note exceptions to required Category 6 standards. Remedy and retest.

E. Telephone: Outside Plant, Inside Riser Wire:

1. General:
   a. A new cable shall be tested only after all wires within the cable have been terminated at both ends.
   b. For unshielded cable, "measurements to ground" means an electrical connection to the Telecommunications Ground Bus, building steel, electrical metallic conduit or a water pipe.
   c. The Contractor shall correct all defects possible.

d. If less than 100% of cable pairs pass testing, the cable shall be deemed unacceptable and shall be replaced. Contractor shall replace, terminate and test new cable at no additional cost to the Owner.

2. Test procedures:
   a. TEST #1 – Continuity:
      i. Meter set for 20 ohm full scale ohm reading. Each pair shall be shorted at one end and the loop resistance value read at the other.
      ii. The difference between the largest and the smallest resistance reading from each pair in the cable shall be no more than 10 percent of the largest reading.
   b. TEST #2 - Balance, Polarity and Conductor Transpositions:
      i. Upon passing Test #1, the tester at one end of cable shall ground tip side of each pair in turn. The tester at other end of cable reads resistance to building ground of same conductor.
   c. REQUIREMENT: Reading for each tip conductor in pair of approximately one-half the loop resistance value from Test #1.
3. Test Report:
   a. Submit Test Report. Documentation shall include loop resistance regarding any opens, shorts, transpositions found, as well as corrective action taken to correct any found opens, shorts, or transpositions.

F. Fiber Optic Cabling.
1. Perform fiber optic cable testing on all installed fiber optic cabling. Submit test results. Notify Owner's Representative in writing at least 48 hours in advance that fiber optic cable testing shall commence. Submit calibration certification for testing equipment to be used.
2. Submit test report no later than five (5) business days after the cables are tested.
3. Test and submit optical power loss test results on each fiber, in each cable, and in both directions under final installation conditions. Submit with the following information:
   a. Date of test.
   b. Name of test personnel.
   c. Fiber cable type and part number.
   d. Cable Length
   e. Fiber strand number, buffer tube color, and strand color.
   f. TX location.
   g. RX location.
   h. Optical Light Source manufacturer, model and serial number.
   i. Optical Power Meter manufacturer, model and serial number.
   j. Reference standard, with allowable values for cable attenuation, connector loss, and splice loss.
   k. Allowable loss for the link under test, calculated as the sum of cable attenuation plus connector loss plus splice loss.

l. TX wavelength(s).
m. Attenuation in dB at the TX wavelength(s).

4. Acceptance Tests.
   a. Power Meter Attenuation Test.
      i. Perform on all fiber cabling segments.
      ii. Method: Perform the following measured attenuation tests using the method B of ANSIlEIAffIA-526-14A for multimode strands and ANSIlEIA/TIA-526-7 for singlemode strands. Measure the attenuation of the fiber optic network inclusive of all splices and patch points called for on the Drawings.
      iii. Measure attenuation between all the coupling points (when applicable) using the insertion method.
      iv. Perform a reference measurement in dBm to determine the injection power level of the stabilized source. Reference cable shall have the same core diameter as strands under test. Connect the optical source directly to the optical power level meter using 2 reference cables and a coupler.
      v. Connect the optical source to the strand under test using I of the 2 reference cables attached to the strand's terminal coupler.
      vi. Connect the optical power level meter to the other end of the strand under test through its terminating coupler using the other reference cable.
      vii. Obtain the measured attenuation (in dB) by subtracting the reference level (dBm) from the received level (dBm).
         (1) Periodically during the acceptance tests, check and document the reference level.
      viii. Test each fiber link for overall attenuation from end-to-end in both directions.
      ix. Perform the attenuation acceptance test at the 850 nm wavelength for multi-mode and 1310 nm for single-mode.
   b. OTDR Distance and Attenuation Assessments.
      i. Perform acceptance testing of all reels of fiber optic cable prior to installation.
      ii. Perform in accordance with the requirements of:
         (1) ANSI/EIA/TIA-568-B.l.
         (2) ANSI/EIA/TIA-568- B.3.
         (3) TIA/EIA-455-59-A.
      iii. Test and submit strip charts and/or tracer recordings on all strands in each tube in every cable in one direction. Submit with the following information:
         (1) Date of test.
         (2) Name of test personnel.
         (3) Test wavelength.

(4) Pulse duration(s) and scale range(s).
(5) Index of refraction.
(6) Fiber cable type and part number.
(7) Fiber tube and/or fiber strand number.
(8) Direction of test.
(9) Overall distance.
(10) Attenuation in dB.

PART 2 PRODUCTS

2.1 COMMUNICATIONS CABLES AND RELATED

A. General:
1. Cabling shall be UL listed for the application and shall comply with EIA TIA/EIA-568-B.l, TIA/EIA-568-B.2, TIA/EIA-568-B.3 and NFPA 70.
2. Ship cable on reels and/or in boxes bearing manufacture date for UTP in accordance with ICEA S-90-661 and optical fiber cables in accordance with ICEA S-83-596 for all cable used on this project. Cabling manufactured more than 12 months prior to date of installation shall not be used.
3. Comply with applicable Code for insulation, jacket, marking and listing for applicable use.
   a. In plenum spaces, provide type CMP or OFNP cabling.
   b. In riser spaces, provide type CMR or OFNR cabling.
   c. Under outside plant cabling conditions, provide type CM or OFN cabling.

PART 3 EXECUTION

3.1 GENERAL

A. All system cabling and terminations be installed in accordance with the manufacturer's instructions and as shown.
B. All necessary interconnections, services, and adjustments required for a complete and operable system shall be provided. All installation work must be done in accordance with the safety requirements set forth in the general requirements of ANSI C2 and NFPA 70.
C. Coordinate insulation displacement (quick connect) terminal devices with wire size and type. Comply with manufacturer's recommendations. Make connections with automatic impact type tooling set to recommended force.
D. Tin terminated shield drain wires and insulate with heat shrinkable tubing.
E. Dress, lace or harness all wire and cable to prevent mechanical stress on electrical connections. No wire or cable shall be supported by a connection point. Provide service loops where harnesses of different classes cross, or where hinged panels are to be interconnected.
F. Correct unacceptable wiring conditions including but not limited to:
1. Deformed, brittle or cracked insulation.
2. Torn or worn cable jacket.

3. Excessively scored cable jackets.
4. Insulation shrunken or stripped further than 1/8" away from the actual point of connection within a connector, or on a punch block.
5. Ungrommeted, unbushed, or uninsulated wire or cable entries.
6. Deformation or improper radius of wire or cable.

3.2 SPLICING

A. All wire and cable shall be continuous and splice-free for the entire length of run between designated connections or terminations.
   1. At designated splices, maintain conductor color code across all splices.
      a. All shielded cables shall be insulated. Do not permit shields to contact conduit, raceway, boxes, panels or equipment enclosures.
      b. Within buildings, make splices only in designated terminal cabinets and/or on designated equipment backboards.

3.3 PULLING IN

A. Verify that all raceway has been de-burred and properly joined, coupled, terminated, and bushed prior to installation of cables. Verify that all raceway is clear of foreign matter and substances prior to installation of wire or cable.

B. Inspect all conduit bends to verify proper radius. Comply with Code for minimum permissible radius and maximum permissible deformation.

C. Apply a chemically inert lubricant to all wire and cable prior to pulling in conduit. Do not subject wire and cable to tension greater than that recommended by the manufacturer. Use multi-spool rollers where cable is pulled in place around bends. Do not pull reverse bends.

D. Provide a box loop for all wire and cable routed through junction boxes or distribution panels. Cable loops and bends shall not be bent at a radius greater than that recommended by the manufacturer.

3.4 SUPPORT

A. Secure all wire and cable run vertically for continuous distances greater than thirty (30) feet. Secure robust non-coaxial cables with screw-flange nylon cable ties or similar devices appropriate to weight of cable. For all other cables, provide symmetrical conforming nonmetallic bushings or woven cable grips appropriate to weight of cable.

B. Separation. Conform to the following table with respect to separation from power and radio frequency (RF) sources. Provide at least twice the listed separation at fluorescent light fixtures, ballasts and similar high intensity Electromagnetic Field sources, including but not limited to motors, transformers and copiers.

Separation of Telecommunications Cabling and Pathways from 480 V or Lower Power Lines

Condition	Minimum Separation Distance		
	<2kVA	2-5kVA	>5kVA
Unshielded power lines or electrical equipment in proximity to open or nonmetal pathways	5 in.	12 in.	24 in.
Unshielded power lines in proximity to a grounded metal conduit pathway	2.5 in.	6 in.	12 in.
Power lines enclosed in a grounded metal conduit (or equivalent shielding) in proximity to a grounded metal conduit pathway	N/A	3 in.	6 in.

C. Support: Provide support for all cabling. Conform to the restrictions of the National Electric Code and Section 17029.

END OF SECTION

SECTION 17116
COMMUNICATIONS CABINETS, RACKS, FRAMES AND ENCLOSURES

PART 1 GENERAL

1.1 SCOPE OF WORK
A. Communications racks and cabinets.
B. Communications Rack Mounted Power Protection and Power Strips.

1.2 RELATED WORK IN OTHER SECTIONS
A. Section 17026 - Grounding and Bonding for Communications Systems.
B. Section 17033 - Conduits and Backboxes for Communications Systems.
C. Section 17036 - Cable Trays for Communications Systems.
D. Section 17126 - Communications Rack Mounted Power Protection and Power Strips.
E. Section 17150 - Communications Horizontal Cabling.

1.3 REFERENCES
A. American National Standards Institute (ANSI).
   1. EIA-310-D (1992) Cabinets, Racks, Panels, and Associated Equipment (ANSI/EIA/310-D).
   2. ANSI-J-STD-607-A Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications (ANSIIJ-STD-607-A-2002).
B. International Conference of Building Officials (lCBO).
   1. AC156 ICBO ES Acceptance Criteria for Seismic Qualification Testing of Nonstructural Components (Jul. 2004).
C. Telecordia Technologies.
   1. Network Equipment Building System (NEBS) GR-63-CORE (Seismic Zone 4).

1.4 SUBMITTALS
A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 DELIVERY, STORAGE AND HANDLING
A. Procedures: In accordance with Section 01600 - Product Requirements and Section 17100 - Structured Cabling, Basic Materials and Methods.

1.6 SEQUENCING
A. Not used.

PART 2 PRODUCTS

2.1 GENERAL
A. Keys.
   1. Key all boxes, cabinets, enclosures, panels, controls, doors and related provided for similar usage within a system identically.

2.2 EQUIPMENT ENCLOSURE SYSTEMS
A. General:

1. Provide enclosure systems including, but not limited to enclosures, cabinets, cases and related panels and accessories as specified herein. Provide size and quantity as shown on drawings or scheduled.
2. Provide color as shown on drawings. If no color is shown on drawings, submit manufacturer's standard color chips for selection.
3. Provide enclosure systems conforming to the UBC/CBC, latest edition, for seismic design.
4. Equipment Enclosures: Each rack provided with frame angles tapped 10-32, ANSI/EIA 310-D Universal Spaced.

B. Relay Rack
   1. Drawing Reference(s).
      a. R15.
      b. R15S.
   2. Construction.
      a. Two wide vertical side channels tapped with EIA mounting holes on both sides, 3” EIA channel construction.
      b. Full 19" wide EIA Frame fits standard equipment forms - assemblies with non-standard opening widths not permitted.
      c. Two (2) Base Angles.
      d. Two (2) Top angles.
      e. 7 ft Tall.
      f. 44 EIA Rack Units minimum.
      g. Horizontal and vertical cable management unless otherwise indicated on plans.
   3. Manufacturers:
      a. CPI 46353-703
      b. Or equal.

C. Equipment Rack, Zone 4, Front, Rear and Side Access.
   1. Drawing References: R22.
   2. Construction:
      a. Manufacturer tested Zone 4 assembly, rated for at least 900 pounds of uniformly distributed load.
      b. Vertical Height (Min): 44RU.
      c. Depth: 36" minimum.
      d. No front or rear door.
      e. Fully Adjustable 19" Mounting Rails, DIN Slot on EIA spacing standard.
      f. Full height receptacle strip, at least two (2) circuits, 20A, unless otherwise noted, as specified in Section 17126.
      g. Provide each rack with the following accessory shelves:
         i. One (1) Exhaust Fan Panel, top or rear doors, at least 200 CFM.
      h. Gangable. Racks have been designed such that they are suitable for installation either as a single, standalone unit, or in a row of identical racks (gangable).

i. Single rack installation. Provide side panels at both sides.
ii. Multirack installation in a row. Bolt racks together using means provided by manufacturer. Omit side panels except at ends of row of racks - provide at ends of rows of racks.

3. Manufacturers. Provide manufacturer's accessories or 3rd party accessories as specified elsewhere in this Section for other specified elements. Coordinate selected shelves, fans and similar with rack submitted for finish and mounting means:
   a. Middle Atlantic/DataTel MRK4436PRO with MRK-Z4 Base angles, MW4QFT-FC top w/4 fans.
   b. Or equal.

2.3 RACK PANELS AND ACCESSORIES

A. Rack Mounting Screws:
   1. Screws 10-32; length as required for at least 1/4" excess when fully seated; oval head with black plastic non marring cup washer or equivalent ornamental head; nickel, cadmium or black plated; Phillips, Allen Hex, Square- Tip or Torx drive. Slotted screws are not acceptable.

PART 3 EXECUTION

3.1 MOUNTING

A. Unless otherwise noted, all floor supported equipment racks shall be bolted to the structure in accordance with the requirements of the CBC, the UBC and the contractors approved structural engineering submittal demonstrating the method to be used to conform to these requirements.
B. Rows of identical racks shall be bolted together, in addition to being bolted to the floor, and bonded to form a single electrical ground plane.
C. Wall mounted equipment racks and cabinets shall similarly be bolted to structural members in accordance with the requirements of the CBC, the UBC and the contractors approved structural engineering submittal demonstrating the method to be used to conform to these requirements.

3.2 EQUIPMENT ENCLOSURE (RACK) AND EQUIPMENT BACKBOARD FABRICATION

A. Combustible material, other than incidental trim of indicated equipment, is prohibited within equipment racks.
B. Provide permanent labels for all equipment and devices.
C. Floor racks to be bolted floor unless otherwise indicated.
D. Access shall not require demounting or de-energizing of equipment. Install access covers, hinged panels, or pull-out drawers to insure complete access to terminals and interior components.
E. Provide a permanent label on the front of each equipment rack including the rack designation, and the circuit breaker number and associated electrical distribution panel designation servicing same.
F. Where wiring of mixed types are called for on the plans, maintain separation of wiring classifications as specified in the individual sections of the Communications

Work. Separately dress, route and land microphone, audio line level and data cables and related on the right side of the equipment enclosure, as viewed from the rear; dress, route, and land loudspeaker level, data and control cables on the left side of the equipment enclosure, as viewed from the rear.

G. Provide vertical wire management of cabling within the rack independent of the adjustable EIA mounting rails. Vertical wiring management provided by the contractor within the rack shall not prevent such rails from being moved as required by the Owner.

H. Dress and support cabling at a minimum of 24 inch on center.

I. Access shall not require demounting or de-energizing of equipment or cabling. Install access covers, hinged panels, or pull-out drawers to insure complete access to terminals and interior components.

J. Fasten removable covers containing any wired component with a continuous hinge along one side, with associated wiring secured and dressed to provide an adequate service loop. Provide an appropriate stop locks to hold all hinged panels and drawers in a serviceable position.

K. Provide permanent labels for all equipment and devices. Where possible, fasten such labels to the rack frame or to blank or vent panels which will remain in place when active equipment is removed for possible service.

L. At audio and video jack fields, provide service loop to permit removal of jack fields from rack sufficient to conveniently access all jack contacts for routine cleaning and maintenance. Organize the service loop and harness such that reasonable reconnection of jacks and jack normals is possible without cutting apart the harness.

M. Coordinate the design and execution of wire harnessing of multi-bay audio and video rack ensembles with conditions of delivery to installation locations at Project Site, and with the requirement herein for test of the completely wired system in the shop prior to delivery to the Project Site. Organize the wiring harnesses such that they will fold within one shippable unit without risk of damage, or provide polarized multi-pin connectors and related interconnect systems as specified elsewhere herein.

3.3 SIGNAL GROUNDING & BONDING PROCEDURES

A. Comply with National Electrical Code and the California Electric Code. Bond equipment racks to ground in accordance with the California Electric Code and ANSI/EIA/TIA 607 and Section 17026.

B. Unless otherwise noted maintain a unipoint ground scheme.

C. Equipment enclosures shall not be permitted to touch each other unless bolted together and electrically bonded.

END OF SECTION

SECTION 17119
COMMUNICATIONS TERMINATION BLOCKS AND PATCH PANELS

PART 1 GENERAL

1.1 SCOPE OF WORK

A. This Section defines material standards for:
   1. Copper Termination Assemblies, including:
      a. Rack and cabinet mounted copper patch panels.
      b. Backboard, rack and cabinet mounted terminal blocks.
   2. Fiber Termination Assemblies, including:
      a. Fiber connectors.
      b. Rack and cabinet mounted fiber patch panels.
      c. Backboard mounted fiber terminal boxes.
   3. Hybrid Copper/Fiber Termination Assemblies.

1.2 RELATED WORK UNDER OTHER SECTIONS

A. Section 17010 – Common Work Results for Communications.
B. Section 17026 - Grounding and Bonding for Communications Systems.
C. Section 17100 - Structured Cabling, Basic Materials and Methods.
D. Section 17113 - Communications Entrance Protection.
E. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures.
F. Section 17123 - Communications Cable Management.
G. Section 17130 - Communications Interior Backbone Cabling.
H. Section 17140 - Communications Outside Plant Backbone Cabling.
I. Section 17150 – Communications Horizontal Cabling.

1.3 REFERENCES

A. ELECTRONIC INDUSTRIES ALLIANCE (EIA).
   1. EIA-310-D (1992) Cabinets, Racks, Panels, and Associated Equipment (ANSI/EIA/310- D).

1.4 SUBMITTALS

A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 DELIVERY, STORAGE AND HANDLING

A. Procedures: In accordance with Section 01600 - Product Requirements and Section 17100 - Structured Cabling, Basic Materials and Methods.

1.6 SEQUENCING

A. Not used.

PART 2 PRODUCTS

2.1 COPPER CABLE TERMINATION DEVICES AND RELATED

A. Category 5e Voice Termination Block.
   1. Drawing reference(s):
      a. 66TB6 6 pair

b. 66TB25 25 pair
c. 66TB50 50 pair
d. 66TB100 100 pair
e. 66TB300 300 pair
f. 66TB600 600 pair

2. General: Insulation displacement connector blocks consisting of oxygen free mechanical fastening system arranged in a flame-retardant molded plastic fastened to a mounting bracket.
3. Features/Functions:
   a. "66" type terminals.
4. Construction/Implementation.
   a. Provide complete with stand-off mounting bracket.
   b. Provide cable management D-rings at the bottom of and between each column of blocks.
5. Manufacturer:
   a. Siemon S66M1-50
   b. Or equal.

B. Category 5e Voice Termination Block with Pre-wired RJ21X (50 Pin) connector.
1. Drawing reference(s):
   a. 66PWTB100 100 pair
   b. 66PWTB200 200 pair
   c. 66PWTB300 300 pair
   d. 66PWTB600 600 pair
2. Features/Functions:
   a. 66 type terminal block with pre-wired RJ21X connector for 25 pairs on each side of block.
   b. Meets or exceeds Category 5e performance.
3. Manufacturers:
   a. Siemon S66M2-5W
   b. Or equal.

C. Data and Voice Icons
1. Icons shall be provided for all patch panel ports.
2. Manufacturer:
   a. Icons for Patch Panel A shall be ORANGE, Ortronics P/N OR-40323200 (package of 100) or equal.
   b. Icons for Patch Panel B shall be ORANGE, Ortronics P/N OR-40323200 (package of 100) or equal.
   c. Icons for Patch Panel C shall be ORANGE, Ortronics P/N OR-40323200 (package of 100) or equal.
   d. Icons for Patch Panel D shall be BLUE, Ortronics P/N OR-40326100 (package of 100) or equal.

D. Category 6 Data and Voice Patch Panels, Rack Mounted.
1. This section applies to patch panels used to distribute BOTH data and voice connections. See paragraph 2.1.E for specifications for patch panels used to distribute voice only

2. Drawing Reference: ***C6PP, where *** refers to port count.
3. Functions/Features:
    a. Shall meet or exceed the current TIA/EIA 568-B.1, B.2 and proposed ISO/IEC 11801-B defined ohm copper cable channel specifications.
    b. 19" EIA rack mountable.
    c. 24 ports per EIA rack unit (1.75").
    d. Arranged in groups of six (6) ports on steel panel.
    e. Ports shall be factory numbered, 1 through 96, 1 through 48, and 1 through 24
    f. Jacks on front.
    g. Terminations on rear.
    h. Holder for port identifier designation strips on front.
    i. Integral cable management bar at rear.
4. Manufacturer:
    a. Ortronics Clarity Category 6 96-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD66U96.
    b. Ortronics Clarity Category 6 48-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD66U48.
    c. Ortronics Clarity Category 6 24-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD66U24.
    d. Or equal.

E. Category 5e Voice Patch Panels, Rack Mounted.
1. This section applies to patch panels used to distribute voice connections ONLY. See paragraph 2.1.D for specifications for patch panels used to distribute data and voice connections.
2. Drawing Reference: ***C5ePP, where *** refers to port count.
3. Functions/Features:
    a. Shall meet or exceed the current TIA/EIA 568-B.1, B.2 and proposed ISO/IEC 11801-B defined ohm copper cable channel specifications.
    b. 19" EIA rack mountable.
    c. 24 ports per EIA rack unit (1.75").
    d. Arranged in groups of six (6) ports on steel panel.
    e. Ports shall be factory numbered, 1 through 96, 1 through 48, and 1 through 24
    f. Jacks on front.
    g. Terminations on rear.
    h. Holder for port identifier designation strips on front.
    i. Integral cable management bar at rear.
4. Manufacturer:
    a. Ortronics Clarity Category 5e 96-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD5E6U96.
    b. Ortronics Clarity Category 5e 48-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD5E6U48.

c. Ortronics Clarity Category 5e 24-port, 8-position, 8-conductor, high-density modular to 110 patch panel, P/N OR-PHD5E6U24.
d. Or equal.

F. Voice Termination Frames
1. All voice backbone termination blocks and stand-off brackets shall be mounted on an approved termination frame unless otherwise specified on the drawings.
a. Homaco 200-pair voice termination frame P/N 50M-201-R19 Wall/Rack Module.
b. Homaco 400-pair voice termination frame P/N 50M-201-D19 Wall/Rack Module.
c. Homaco 600-pair voice termination frames P/N 50M-201-T19 Wall/Rack Module.
d. Or equal.

2.2 FIBER CABLE TERMINATION DEVICES AND RELATED

A. Fiber Optic Connectors and Related:
1. General.
a. Connectors to comply with:
i. EIA/TIA-4750000-C.
ii. EIA/TIA-604-3A.
2. Connectors:
a. SC, unless otherwise noted or scheduled.
b. Connector performance per TIA/EIA – 568B.3 and the following:
i. Insertion Loss:
(1) Multimode:
a. Less than or equal to 0.75 dB per mated pair.
(2) Single mode, UPC
a. Less than or equal to 0.75 dB per mated pair.
(3) Single mode, APC
a. Less than or equal to 0.30 dB per mated pair.
ii. Return Loss:
(1) Single mode, Ultra Polish, greater than or equal to 55 dB.
(2) Single mode, Angled Physical Contact, greater than or equal to 65 dB.
iii. Manufacturer:
(1) Connector.
a. Berk-Tek/Nexans
b. Or equal.

B. Fiber Optic Pigtails, Fusion Splicing
1. Fiber optic terminations shall be performed using fusion spliced factory pigtails with SC connectors unless otherwise specified on the drawings.
2. Pigtails for fusion spliced terminations of 50/125 micron multimode fiber:

a. Manufacturer:
   i. 1-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626PF9FR-FZ002M or equal.
   ii. 6-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626SF4ZR-FZ002M or equal.
   iii. 12-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626TF4ZR-FZ002M or equal.

3. Pigtails for fusion spliced terminations of 8.3/125 micron singlemode fiber:
   a. Manufacturer:
      i. 1-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626PC9FR-RZ002M or equal.
      ii. 6-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626SC4ZR-RZ002M or equal.
      iii. 12-fiber pigtails 2 meter, SC connector, Ortronics P/N OR-626TC4ZR-RZ002M or equal.

C. Heat Shrink Sleeves
1. All splices shall utilize heat shrink sleeves for splice protection.
   a. 60 mm heat shrink sleeves shall be used in all 12 inch splice trays.
   b. 40 mm heat shrink sleeves are acceptable in 6 inch splice trays where 60 mm heat shrink sleeves either will not fit or are not recommended by the splice tray manufacturer.
   c. Manufacturer:
      i. Heat shrink sleeves for splices in surface mount fiber patch/splice cabinets Ortronics P/N OR-20500043 or equal.
      ii. Heat shrink sleeves for splices in rack mount fiber splice cabinets Ortronics P/N OR-20500130 or equal.

D. Splice Trays
1. All finished splices (with heat shrink sleeve in place) shall be mounted and stored within splice trays compatible with the splice enclosure being used. All slack in 250- and 900-micron coated fibers shall be carefully coiled and stored inside the tray.
2. Manufacturer:
   a. Splice trays for fusion splices in surface mount fiber patch/splice enclosures Ortronics P/N OR-62600003 or equal.
   b. Splice trays for fusion splices in rack mount fiber splice enclosures Ortronics P/N OR-61500016 or equal.

E. Fiber Optic Adapter Panels
1. Manufacturer:
   a. Adapter panels for multi mode fiber terminations in surface mount or rack mount patch or patch/splice cabinets 6-SC duplex (12 fibers), metal adapters, phosphor-bronze alignment sleeves, Ortronics P/N OR-615SCDSM6 or equal.
   b. Adapter panels for single mode fiber terminations in surface mount or rack mount patch or patch/splice cabinets 6-SC duplex (12 fibers),

blue adapters, ceramic alignment sleeves, Ortronics P/N OR-615SCDSM6C or equal.

F. Fiber Patch Enclosure, Wall Mount
   1. Drawing Reference: ***FPEW, where *** refers to the fiber patch panel count.
   2. Features/Functions:
      a. Provides a location for packaging fiber optic cables with direct terminations.
      b. Two compartments, separated by a partition loaded with fiber optic adapter panels.
         i. Left side typically for storing incoming cable slack and connecting terminated fibers.
         ii. Right side typically for patching rack-mounted network equipment.
      c. Suitable for indoor use.
      d. Constructed of 0.125 inch minimum thick aluminum or powder coated steel.
      e. Cable can be inserted/removed laterally via removable mending plate or similar.
      f. Interior cable storage rings or spools.
      g. Tamper-proof hardware - separate locking sections for cable terminations and patch panel access.
      h. Provides strain relief for entrance cables.
   3. Manufacturer:
      a. Patch enclosures for up to 24 fibers Ortronics P/N OR-615SMFC-LX-12P or equal.
      b. Patch enclosures for up to 48 fibers Ortronics P/N OR-615SMFC-24P or equal.
      c. Patch enclosures for up to 96 fibers Ortronics P/N OR-615SMFC-48P or equal.

G. Fiber Patch/Splice Enclosure, Wall Mount
   1. Drawing Reference: ***FPSEW, where *** refers to the fiber patch panel count.
   2. Features/Functions:
      a. Provides a location for splicing and packaging fiber optic cables.
      b. Two compartments, separated by a partition loaded with fiber optic adapter panels.
         i. Left side typically for storing incoming cable slack and splice trays and connecting terminated fibers.
         ii. Right side typically for patching rack-mounted network equipment.
      c. Suitable for indoor use.
      d. Constructed of 0.125 inch minimum thick aluminum or powder coated steel.

e. Cable can be inserted/removed laterally via removable mending plate or similar.
f. Interior cable storage rings or spools.
g. Threaded stud or similar anchoring point for stacking and securing splice trays.
h. Tamper-proof hardware - separate locking sections for cable terminations and patch panel access.
i. Provides strain relief for entrance cables.

3. Manufacturer:
a. Patch/splice enclosures for up to 48 fibers Ortronics P/N OR-615SMFC-24P/S or equal.
b. Patch/splice enclosures for up to 96 fibers Ortronics P/N OR-615SMFC-48P/S or equal.

H. Fiber Patch Enclosure, Rack Mount

1. Drawing Reference: ***FPER, where *** refers to the fiber patch panel count.
2. Features/Functions:
a. 19" EIA rack mount.
b. Provides a location for packaging fiber optic cables with direct terminations.
c. Two compartments, separated by a partition loaded with fiber optic adapter panels.
i. Rear (larger) side typically for storing incoming cable slack and connecting terminated fibers.
ii. Front (smaller) side typically for patching rack-mounted network equipment.
d. Suitable for indoor use.
e. Constructed of 0.125 inch minimum thick aluminum or powder coated steel.
f. Cable can be inserted/removed laterally via removable mending plate or similar.
g. Interior cable storage rings or spools.
h. Tamper-proof hardware - separate locking sections for cable terminations and patch panel access.
i. Provides strain relief for entrance cables.
j. Suitable for reentry, if required for future maintenance or modification, without damage to the cable or terminated fibers.
3. Manufacturer:
a. Patch enclosures for up to 36 fibers Ortronics P/N OR-615MMC-18P-00 or equal.
b. Patch enclosures for up to 72 fibers Ortronics P/N OR-615MMC-36P-00 or equal.
c. Patch enclosures for up to 144 fibers Ortronics P/N OR-615MMC-72P-00 or equal.

I. Fiber Splice Enclosure, Rack Mount

1. Drawing Reference: ***FSER, where *** refers to the fiber splice count.
2. Features/Functions:
   a. 19" EIA rack mount.
   b. Provides a location for packaging fusion spliced fiber optic cables.
   c. Suitable for indoor use.
   d. Constructed of 0.125 inch minimum thick aluminum or powder coated steel.
   e. Interior cable storage rings or spools.
   f. Provides strain relief for entrance cables.
   g. Integral threaded stud or steel wire frame for organizing and securing splice trays
   h. Suitable for reentry, if required for future maintenance or modification, without damage to the cable or terminated fibers.
3. Manufacturer:
   a. Splice enclosures for up to 48 fibers Ortronics P/N OR-615MMC-48S-00 or equal.
   b. Splice enclosures for up to 96 fibers Ortronics P/N OR-615MMC-96S-00 or equal.

PART 3 EXECUTION

3.1 **Refer to Section 17130 - Communications Indoor Backbone Cabling for Requirements for termination of Riser and Outside Plant Cabling Within EFs And BDFs.**

3.2 **Refer to Section 17100 – Structured Cabling, Basic Materials And Methods.**

3.3 **Refer to Section 17150 – Communications Horizontal Cabling.**

END OF SECTION

SECTION 17123
COMMUNICATIONS CABLE MANAGEMENT

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Section includes provision of cable management for cabling installed under the work of this Project as well as for Owner furnished patch cords at equipment racks.

B. Scope includes:

1. Innerduct.
    a. Interior.
    b. Outside Plant.
2. Cable End Spillway.
3. Backboard Cable Management.
4. Patch Panel Cable Management at racks and cabinets.

1.2 RELATED WORK IN OTHER SECTIONS

A. Section 17033 - Conduits and Backboxes for Communications Systems.
B. Section 17036 - Cable Trays for Communications Systems.
C. Section 17039 - Surface Raceways for Communications Systems.
D. Section 17053 - Identification for Communications Systems.
E. Section 17100 - Structured Cabling, Basic Materials and Methods.
F. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures.
G. Section 17119 - Communications Termination Blocks and Patch Panels.
H. Section 17150 - Communications Horizontal Cabling.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM).

1. ASTM D2239-03 Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter.

B. Underwriters Laboratories (UL).

1. UL 910 Test for Flame-Propagation and Smoke-Density Values for Electrical and Optical-Fiber Cables used in Spaces Transporting Environmental Air (Nov. 1998).

1.4 SUBMITTALS

A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 DELIVERY, STORAGE AND HANDLING

A. Procedures: In accordance with Section 01600 - Product Requirements and Section 17100 - Structured Cab ling, Basic Materials and Methods.

1.6 SEQUENCING

A. Not used.

PART 2 PRODUCTS

2.1 CONDUIT CABLE MANAGEMENT

A. Conduit End Waterfall Spillway.
   1. Drawing Reference: CEW.
   2. Features/Functions:
      a. Spillway fastens to end of EMT conduit, provides radius sweep, open on top, solid from below.
      b. Maintains proper bend radii for fiber/cable.
      c. Provides tie points for fire pillow retention.
      d. Supports up to 100 lbs. of hanging fiber/cable.
      e. Clamp for securing to EMT.
      f. Self-fastening tie down system for supporting cabling.
   3. Construction:
      a. Fire Retardant ABS.
   4. Manufacturers:
      a. Bejed BJ-2049 Spillway.
      b. Or equal (no known equal).

2.2 HORIZONTAL PATCH PANEL CABLE MANAGEMENT

A. Patch Panel Cable Management, Rack Mounted, Snap Cover.
   1. Drawing References:
      a. 1 RU: RMWM1C
      b. 2 RU: RMWM2C
      c. 3 RU: RMWM3C
   2. Construction.
      a. EIA 19 or 23" Rack Mount, as required.
      b. Continuous flexible system of fingers and slots.
      c. De-burred to avoid snagging patch cord jacket.
      d. Snap Cover.
   3. Manufacturer, EIA 19” rack mount:
      a. 1 RU CPI 30139-719 or equal.
      b. 2 RU CPI 30130-719 or equal.
      c. 3 RU CPI 30131-719 or equal.
   4. Manufacturer, EIA 23” rack mount:
      a. 1 RU CPI 30139-723 or equal.
      b. 2 RU CPI 30130-723 or equal.
      c. 3 RU CPI 30131-723 or equal.

2.3 VERTICAL CABLE MANAGEMENT

A. Cable Management, Vertical, latches.
   1. Drawing References:
      a. Single-Sided Narrow: VCMSSNC
      b. Single-Sided Wide: VCMSSWC
      c. Double-Sided Narrow: VCMDSNC
      d. Double-Sided Wide: VCMDCWC
   2. Construction.
      a. Bolts to racks specified in Section 17116.
      b. De-burred and supplied with protective edge guards to avoid snagging patch cord jacket.

c. System of latches to retain cables.
d. Manufacturer:
i. Single-Sided Narrow CPI 11730-703 or equal.
ii. Single-Sided Wide CPI 11374-703 or equal.
iii. Double-Sided Narrow CPI 12096-703 or equal.
iv. Double-Sided Wide CPI 11729-703 or equal.

2.4 BACKBOARD CABLE MANAGEMENT

A. Fiber Management Ring, Preformed Loop.
1. Drawing Reference: FMR
2. Construction:
a. 24 inch diameter steel ring stores fiber slack using Velco fasteners at regular intervals around ring.
b. Screw fastens to backboard at BDF or IDF.
3. Manufacturer:
a. Leviton 48900-0FR.
b. Or equal (no known equal).

B. Wire Management Rings, Wall/Ceiling Mounted:
1. Drawing References/Functions Features:
a. WMRB - Bridle Ring Type, Threaded Lag Screw.
b. WMRC - Closed Ring, U shaped assembly with two screw holes at ends.
c. WMRO - Open, Re-enterable Split Ring permitting cables to be inserted midspan, two screw holes at ends.
d. WMP** - Steel back board with 4 inch deep min, 8 inch wide vertical wire management rings, front enterable. Provide trough at bottom of each column of WMP.
e. WMP**T - Narrow, steel back board with 4 inch deep min, 3 inch wide vertical wire management rings, front enterable.
2. Provide as required to support indicated cable bundle and location.
3. Provide type WMRB at wood frame construction for cable hung from underside of ceiling, unless otherwise noted.
4. Manufacturers:
a. WMRB:
i. B-Line Fasteners, BR Series.
ii. Senior Industries.
iii. T&B
iv. Or equal.
b. WMRC:
i. AllenTel
ii. Chatworth Products Wall Mount Closed D Ring.
iii. Senior Industries.
iv. Or equal.
c. WMRO:
i. AllenTel.
ii. Chatworth Products Wall Mount Open Ring.

iii. Commscope/Systimax, Inc.
iv. Siemon.
v. Or equal.

d. WMP:
i. Siemon S188-*** to match adjacent terminal blocks with S188-WD.
ii. Ortronics OR-806003194 or OR-806003196 to match terminal blocks.
iii. By any manufacturer listed for 110TB under Section 17119 – Communications Termination Blocks and Patch Panels.
iv. Or equal.

e. WMP**T:
i. Siemon SI10M-WM-*** to match adjacent terminal blocks.
ii. By any manufacturer of listed for 110TB under Section 17119Communications Termination Blocks and Patch Panels.
iii. Or equal.

PART 3 EXECUTION

3.1 GENERAL

A. Refer to Section 17130 Communications Indoor Backbone Cabling for requirements for cable routing within IDF's, and BDF's.

3.2 INNERDUCT INSTALLATION

A. Schedule of Application.
1. Underground.
a. At 4" ducts and inside maintenance holes and vaults, place fiber cabling and 50 pair and smaller copper telephone cabling inside WMID.
b. Omit WMID at conduits smaller than 4”.
c. At tray conditions in utility tunnel and at backboard, cable runway and tray conditions at communications closets, protect fiber cabling with ID Innerduct.
d. Retention/Sealing of ducts at conduit entrances.
2. At plenum tray conditions, provide IDP.
3. At 4" and larger interior conduits, provide WMID. Provide plenum rated WMID at plenum ceiling conditions.

3.3 CONDUIT END WATERFALL

A. Fasten securely to conduit end wherever cabling will exit conduit 18" or more above the cable tray to prevent damage due to cabling due to weight of cable bearing on a conduit end.
B. Secure cabling with integral cable restraint system.

END OF SECTION

SECTION 17126
COMMUNICATIONS RACK MOUNTED POWER PROTECTION AND POWER STRIPS

PART 1 GENERAL

1.1 SCOPE OF WORK
A. Section includes provision of power strips at racks and cabinets installed under the work of this Project.

1.2 RELATED WORK IN OTHER SECTIONS
A. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures.

1.3 REFERENCES
A. ELECTRONIC INDUSTRIES ALLIANCE (EIA).
   1. EIA-31 0-D (l992) Cabinets, Racks, Panels, and Associated Equipment (ANSIIEIA/31 0- D).

1.4 SUBMITTALS
A. Conform with the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.5 DELIVERY, STORAGE AND HANDLING
A. Procedures: In accordance with Section 01600 - Product Requirements and Section 17100 - Structured Cabling, Basic Materials and Methods.

1.6 SEQUENCING
A. Not used.

PART 2 PRODUCTS

2.1 EQUIPMENT ENCLOSURE PWER, PROTECTION AND SIGNAL GROUNDING
A. Comply with applicable Codes. Provide UL Listed devices suitable for commercial use. Provide all junction boxes, raceway, fittings, wire, supports and fastenings as required for complete installation. Unless otherwise noted, provide receptacles of NEMA 5-15R configuration.

B. Full Height Receptacle Strip, One (1) Circuit, 15A.
   1. Features/Construction:
      a. Not less than 70" Long.
      b. Not less than eleven (11) 15A receptacles.
      c. Integral circuit breaker.
      d. NEMA 5-15P plug on 6' cord.
      e. UL Listed Assembly.
      f. Provide mounting hardware as necessary to attach to rack interior.
   2. Manufacturers:
      a. Middle Atlantic/Datatel.
      b. Or equal.

C. Full Height Receptacle Strip, One (1) Circuit, 20A.

1. Features/Construction:
    a. Not less than 70" Long.
    b. Not less than eleven (11) 15A receptacles.
    c. Integral circuit breaker.
    d. NEMA 5-20P plug on 6' cord.
    e. UL Listed Assembly.
    f. Provide mounting hardware as necessary to attach to rack interior.
2. Manufacturers:
    a. Midde Atlantic PD-1020C-NS.
    b. Or equal.

PART 3 EXECUTION

3.1 CONFORM WITH THE REQUIREMENTS OF SECTION 17116 AND THE FOLLOWING

A. Mounting:
1. Mechanically fasten strips to the rack/cabinet being served using strip or rack being served.
2. Mount strip so that it does not impede user access to:
    a. Vertical wire management integral to the racks.
    b. Front and rear movement of adjustable EIA mounting rails supplied with the rack or cabinet.
    c. Mounting of Owner furnished EIA rack mountable equipment within the served rack.
3. Unless otherwise noted, the strip to be mounted to derive power from electrical receptacles mounted to the cable tray above the rack or drop box receptacles beneath the floor. Mount strip so that the power cord reaches the provided receptacles without:
    a. Causing tension on the power cord.
    b. Putting it in direct contact with signal cabling.
    c. Putting it in contact with sharp edges.
    d. Lacing it to parts intended to be movable, including, but not limited to:
        i. Slide out drawers and shelving.
        ii. Rack mounted for Owner furnished servers on pullout rails.
        iii. EIA adjustable mounting rails.

END OF SECTION

SECTION 17130
COMMUNICATIONS INDOOR BACKBONE CABLING

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Work of this Section includes:
   1. Indoor Copper Backbone Cabling between Communications Rooms and communications terminal nodes other than station cabling.
   2. Indoor Optical Fiber Backbone Cabling between Communications Rooms and communications terminal nodes other than station cabling.
   3. Terminate fiber on patch panels as specified in Section 17119.
   4. Terminate copper cabling on terminal blocks as specified in Section 17119. Provide terminal block, high pair count copper connector cabling and rack mounted patch panels to permit Owner's telephone contractor to cross connect the entrance and riser cabling to individual station ports using Owner furnished patch cords.
   5. For all cabling:
      a. Test cabling to demonstrate performance to specified standards or better using test equipment and methods as specified in Section 17100.
      b. Label cables, jacks, plates and patch panels as specified in Section 17053.
      c. Document on Record Documents as described in Section 17010.

B. Related work in other Sections.
   1. Section 17026 - Grounding and Bonding for Communications Systems.
   2. Section 17029 - Hangers and Supports for Communications Systems.
   3. Section 17033 - Conduits and Backboxes for Communications Systems.
   4. Section 17036 - Cable Trays for Communications Systems.
   5. Section 17053 - Identification for Communications Systems.
   6. Section 17100 - Structured Cabling, Basic Materials and Methods.
   7. Section 17116 - Communications Cabinets, Racks, Frames and Enclosures.
   8. Section 17119 - Communications Termination Blocks and Patch Panels.
   9. Section 17123 - Communications Cable Management.
   10. Section 17126 - Communications Rack Mounted Power Protection and Power Strips.
   11. Section 17150 - Communications Horizontal Cabling.

1.2 REERENCES

A. Refer to Section 17100 - Structured Cabling, Basic Materials and Methods.

1.3 SUBMITTALS

A. Conform to the requirements of Section 01300 - Administrative Requirements and Section 17010 - Common Work Results for Communications.

1.4 DELIVERY, STORAGE AND HANDLING

A. Procedures: In accordance with Section 01600 - Product Requirements and Section 17100 - Structured Cabling, Basic Materials and Methods.

1.5 SEQUENCING

A. Not used.

PART 2 PRODUCTS

2.1 COPPER BACKBONE CABLING

A. General:
   1. Each conductor shall be a minimum of 22 or 24 AWG.
   2. Complies with:
      a. ICEA S-90-661.
      b. EIA TIA/EIA-568-B.1.
      c. EIA TIA/EIA-568-B.2.
      d. NEMA WC 63.1
      e. UL444.
   3. Solid conductor 100 ohm multipair UTP (Unshielded twisted pair), formed into 25 pair binder groups covered with a gray thermoplastic jacket.
   4. Imprinted with:
      a. Manufacturers name or identifier.
      b. Flammability rating.
      c. Gauge of conductor.
      d. Transmission performance rating (category designation).
      e. At regular intervals not to exceed 2 feet.
   5. The word "FEET" or the abbreviation "FT" shall appear after each length marking.
   6. Provide communications general purpose (CM or CMG), communications plenum (CMP) or communications riser (CMR) rated cabling in accordance with NFPA 70.
      a. Type CMP and CMR may be substituted for type CM or CMG and type CMP may be substituted for type CMR in accordance with NFPA 70.
      b. Meets EIA/TIA Category 3.
      c. USOC color code.
      d. NEC Type CM or CMG.
   7. Color coding shall comply with industry standards for 25 pair cables.

B. Inside Distribution Wire, Horizontal.
   1. Drawing Reference ** pro T-IDW, where ** refers to required pair count.
   2. Construction:
      a. 2 to 600 pair count voice pair cabling in overall jacket.
      b. Meets EIA/TIA Category.
      c. USOC color code.
      d. NEC Type CM or CMG.
      e. Nominal Outside Diameter, not to exceed the following:
      f.

Pair County	Outside Diameter (inches)
6 pr.	0.23
12 pr.	0.25
25 pr.	0.34
50 pr.	0.47
100 pr.	0.64
200 pr.	0.97
300 pr.	1.07
400 pr.	1.30
600 pr.	1.50

3. Manufacturer:
   a. Superior/Essex.
   b. General Cable.
   c. Or equal.

C. Inside Distribution Wire, Riser.
1. Drawing Reference ** pr. T-IDW-R, where ** refers to required pair count.
2. Construction:
   a. 25 to 600 pair count voice pair cabling in overall jacket.
   b. PVC jacket.
   c. USOC color code.
   d. NEC Type CMR.
   e. Meets EIA/TIA Category 3.
   f. Nominal Outside Diameter, not to exceed the following:

Pair Count	**Outside Diameter, not to exceed the following**:
25 pr.	0.54
50 pr.	0.70
100 pr.	0.86
200 pr.	1.20
300 pr.	1.30
400 pr.	1.50
600 pr.	1.90

3. Manufacturer:
   a. Superior/Essex.
   b. General Cable.
   c. Or equal.

D. Inside Distribution Wire, Plenum.
1. Drawing Reference ** pro T-IDW-P, where ** refers to required pair count.
2. Construction:
   a. 25 to 600 pair count voice pair cabling in overall jacket.
   b. Plenum rated jacket.
   c. USOC color code.
   d. NEC Type CMP.
   e. Meets EIA/TIA Category 3.
   f. Nominal Outside Diameter, not to exceed the following:

Pair Count	**Outside Diameter (inches)**

25 pr.	0.54
50 pr.	0.70
100 pr.	0.86
200 pr.	1.20
300 pr.	1.30
400 pr.	1.50
600 pr.	1.90

3. Manufacturer:
   a. Superior/Essex.
   b. General Cable.
   c. Or equal.

2.2 FIBER OPTIC COMMUNICATIONS CABLING AND RELATED

A. General Requirements:

1. Fiber count per cable to comply with minimum counts indicated on the plans. Plans indicate specific cable counts providing quantities of multimode and single mode fiber strands.
2. Quantities are minimum quantities. At Contractor's option, provide a greater number. Where a greater number are provided, terminate, test, label and document all strands on fiber patch panels and/or terminal boxes as indicated as if quantity provided were called out for on the plans.
3. Where contract documents call for individual single mode and multimode cables, Contractor may substitute a hybrid cable with the same or greater strand count of each type.
4. Comply with applicable Code for insulation, jacket, marking and listing for applicable use.
   a. Provide nonconductive optical fiber general purpose cable (OFN or OFNG), nonconductive optical fiber plenum cable (OFNP), and nonconductive optical fiber riser cable (OFNR) rated cable in accordance with NFPA 70 and UL 910.
   b. Type OFNP or OFNR may be substituted for type OFN or OFNG and type OFNP may be substituted for type OFNR in accordance with NFPA 70.
5. Fiber media shall, at minimum, meet the following performance standards:
   a. ANSI/EIA/TIA 568-B.l.
   b. ANSI/EIA/TIA 568-B.3.
6. Fiber media shall, at minimum, meet the following construction standards:
   a. ICEA S-87-640.
   b. ICEA S-83-596.
   c. All dielectric, unless otherwise noted.
7. The cable cordage jacket, fiber, unit, and group color shall be in accordance with EIA TIAIEIA-598-B.
   a. Colors shall be across specified storage/installation temperature range.
   b. Means of providing conforming colors shall not degrade performance of cable.

8. Jacket:
   a. Free of splits, holes or blisters.
   b. Marked and listed in conformance with California Electric Code 770.
   c. Conform with:
      i. UL 1666 and
      ii. NFPA 70.
   d. Heavy duty construction, Fiberglass Epoxy Rod/Kevlar strength member(s).
   e. Each fiber to be 100% attenuation tested by the Manufacturer prior to shipping. Manufacturer's test to be affixed to shipping reel.
   f. Cable shall be imprinted with fiber count, fiber type and aggregate length at regular intervals not to exceed 40 inches. Hybrid fiber optic cable marking shall comply with EIA TIAIEIA-598-B.
9. Performance:
   a. Temperature Sensitivity:
      i. Storage: -40C degrees to +70C degrees.
      ii. Installation: -30C degrees to +70C degrees.
   b. Variance:
      i. Multimode.
   c. Specified attenuation is maximum allowed over entire operating range of cable.
      i. Single mode:
         (1) Average change, not more than 0.05 dB/km at 1550 -40C degrees to +70C degrees.
      ii. Maximum change not more than 0.15 dB/km at 1550 nm.

B. Fiber, Multimode - General.
1. Meeting EIA/TIA 568B.3 and EIA TIAIEIA-492AAAB, multimode, 50/125-urn diameter, 0.275 numerical aperture.
2. Construction:
   a. Multimode fiber strands.
   b. Core Diameter: 50.0 +/- 3.0µm per TIA/EIA -455-176.
   c. Cladding Diameter: 125 +/- 2.0 /µm per TIA/EIA-455-176.
   d. Numerical Aperture:0.200 +/- 0.015 per TIA/EIA-455-177.
   e. Core to Cladding Offset ≤ 3.0 /µm.
   f. Coating Diameter: 245 +/- 10 /µm per TIA/EIA-455-173 or 163.
   g. Core and Cladding Non-Circularity.
   h. Core: ≤ 5.0% per TIA/EIA -455-176.
   i. Cladding: ≤ 2.0% per TIA/EIA-455-176.
   j. Graded Index.
   k. Effective Group Index of refraction:
      i. 1.49 at 850 nm.
      ii. 1.49 at 1300 nm.
   l. Coating to be mechanically strippable, dual layered, UV -cured acrylate applied by the fiber manufacturer.

3. Each fiber to be 100% proof-tested by the manufacturer to sustain 100 kpsi load minimum per TIA/EIA-455-31.
4. Performance:
    a. Bandwidth:
        i. Laser source, per TIA/EIA-492AAAC and draft IEC 60793-210 for type Al a.2, ensured by DMD performance specifications for sources meeting launch conditions specified in 10 Gigabit Ethernet (IEEE 802.3ae), OIF OC-192/STM-64 VSR-4-04, and draft 10 Gigabit Fiber Channel (Tll.2 10GFC).
        (1) 850 nm: > 950 MHz at 1 km.
        (2) 1300 nm: > 500 MHz at 1km.
    b. Overfilled Launch/LED, per TIA/EIA-455-204.
        i. 850 nm: > 700 MHz at 1 km.
        ii. 1300 nm: > 500 MHz at 1km.
    c. Chromatic Dispersion:
        i. Minimum Zero Dispersion Wavelength: 1297 nm per TIA/EIA-455-168 or 175.
        ii. Maximum Zero Dispersion Wavelength: 1320 nm per TIA/EIA-455-168 or 175.
        iii. Maximum Zero Dispersion Slope: 0.101 ps/nm2ᵉkm per TIA/EIA-455-168 or 175.
    d. Differential Mode Delay (DMD), ps/m, per DMD test methods TIA/EIA-455-220 and IEC 60793-1-49.
        i. 850 nm: < .70.
        ii. 1300 nm: < .88.
    e. Attenuation:
        i. 850 nm: ≤ 3.0 dB/km.
        ii. 1300 nm: ≤ 1.0 dB/km.
        iii. Max attenuation point discontinuity: <0.25 dB at any design wavelength.
        iv. Bending Attenuation induced @ 1550 run, with 100 turns on 75mm dia mandrel:< 0.50 dB.
        v. Attenuation Difference at 1380 nm, ≤ attenuation at 1300 nm +3.0 dB/km.
        vi. Water Immersion: Induced attenuation, 23 degrees C water immersion: ≤ 0.1 dB/km.
    f. Manufacturers:
        i. Berk-Tek.
        ii. Or equal.

C. Fiber, Single Mode – General.
1. Meeting EIA/TIA 568B.3 and EIA TIA/EIA-492CAAA, single-mode, 8/125-µm diameter, 0.10 numerical aperture.
2. Construction:
    a. Single mode fiber strands.

b. Mode field diameter: 9.3 +/- 0.5 µm at 1310 nm (measured per Petermann II) 10.5 +/- 1.0µm at 1550 nm.
c. Core Diameter: 8.3µm.
d. Numerical Aperture: 0.11.
e. Cladding Diameter: 125 +/- 1.0 µm.
f. Cloating Diameter: 245 +/- 10 µm.
g. Cladding Non-Circularity: ≤ 1.0%.
h. Core to Cladding Offset: ≤ 0.8 µm.
i. Cabled Cutoff Wavelength (ccf): <1260 nm.
j. Coating to be mechanically strippable, dual layered, UV-cured acrylate applied by the fiber manufacturer.
k. Each fiber to be 100% proof-tested by the manufacturer to sustain 100 kpsi load minimum.

3. Performance:
   a. Chromatic Dispersion:
      i. Minimum Zero Dispersion Wavelength: 1301.5 run.
      ii. Maximum Zero Dispersion Wavelength: 1321.5 nm.
      iii. Maximum Zero Dispersion Slope: 0.092 ps/nm2 per km.
   b. Dispersion:
      i. ≤ 3.2 ps/(nm^{e}km) from 1285 run to 1330 nm.
      ii. < 18 ps/(nm^{e}km) at 1550 nm.
      iii. Polarization Mode Dispersion: ≤ 0.5 ps/ SQRT km.
   c. Attenuation:
      i. Point Discontinuity: ≤ 0.10 dB at 1310 nm or 1550 nm.
      ii. Water peak attenuation at 1383 +/- 3 nm: ≤ 2.1 dB/km.
      iii. Bending Attenuation induced @ 1550 nm, with 100 turns on 75mm dia mandrel < 0.10 dB.
      iv. Water Immersion: Induced attenuation, 23 degrees C water immersion: ≤ 0.05 dB/km.
   d. Manufacturer:
      i. Berk-Tek.
      ii. Or equal.

D. Fiber Optic Cable, Inside Distribution, Breakout Cable:
1. Drawing References:
   a. XX FOM-IDW Multimode, where XX indicates fiber count.
   b. XX FOS-IDW Single Mode, where XX indicates fiber count.
   c. XX FOH-IDW Hybrid, where XX indicates total fiber count. Ratio of Single mode to Multimode within overall count is 1:1, unless otherwise noted.
2. Fiber: Refer to:
   a. FIBER, MUL TIMODE, GENERAL, and
   b. FIBER, SINGLE MODE, GENERAL, as applies.
3. Application: In-building Distribution. Breakout Cable Applications.
4. Approvals: Where used outside conduit, OFN, OFNP, OFNR per NEC 770-51, as applies.

5. Construction:
   a. Refer additionally to Fiber Cable Construction, General, and elsewhere herein.
   b. Suitable and approved for indoor use.
   c. Tight buffer.
   d. At least one ripcord to facilitate sheath removal.
   e. Breakout style construction, with individual jacket per fiber with overall outside jacket.
   f. Maximum Cable Diameter:
      i. 2 Fibers: .236”
      ii. 4 Fibers: .285”
      iii. 6 Fibers: .363”
      iv. 8 Fibers: .437”
      v. 10 Fibers: .473”
      vi. 12 Fibers: .506”
   g. Performance:
      i. Maximum attenuation per EIA/TIA-455-61.
      ii. Multimode.
         (1) 850 nm: ≤ 3.5 dB/km.
         (2) 1300 nm: ≤ 1.5 dB/km.
      iii. Single mode.
         (1) 1300 nm: ≤ 1.0 dB/km.
         (2) 1550 nm: ≤ 1.0 dB/km.
   h. Minimum bend radius:
      i. During installation: 20 times cable outside diameter.
      ii. After installation: 10 times cable outside diameter.
   i. Maximum Safe Longitudinal Load:
      i. At installation:
         (1) 2 Fibers: 150lbs.
         (2) 4 Fibers: 290 lbs.
         (3) 6 Fibers: 380lbs.
         (4) 8 Fibers: 480lbs.
         (5) 10-12 Fibers: 575 lbs.
      ii. Long term application:
         (1) 2 Fibers: 25 lbs.
         (2) 4 Fibers: 90lbs.
         (3) 6 Fibers: 115 lbs.
         (4) 8 Fibers: 145lbs.
         (5) 10-12 Fibers: 75lbs.
      iii. Crush resistance: 250lb/inch.
      iv. Impact Resistance: 3.6 ft-lbs., 10 impacts.
      v. Flex, Twist/Bend 1000 cycles, 22 lbs., 10 x O.D. radius.
   j. Manufacturer, subject to above:
      i. Berk-Tek.
      ii. Or equal.

E. Fiber Optic Cable, Riser:
   1. Drawing References:
      a. XX FOM-R Multimode, where XX indicates fiber count.
      b. XX FOS-R Single mode, where XX indicates fiber count.
      c. XX FOH-R Hybrid, where XX indicates total fiber count. Ratio of Single mode to Multimode within overall count is 1:1, unless otherwise noted.
   2. Fiber: Refer to:
      a. FIBER, MUL TIMODE, GENERAL, and
      b. FIBER, SINGLE MODE, GENERAL, as applies.
   3. Application: Intra-building distribution in building risers and below building crawl space.
   4. Listing: Meeting NEC/CEC OFNR, Listing by nationally recognized testing agency.
      a. Construction:
         i. Refer additionally to Fiber Cable Construction, General, and elsewhere herein.
         ii. Jacket: Subject to listing and rating for vertical riser cable.
         iii. Tight Buffer construction only, "Core Lock" not required.
         iv. Otherwise as for FO*-OP, except for construction affecting listing.
      b. Dimensions, not to exceed the following:
         i. 1 to 4 Fibers: 0.20".
         ii. 5 to 12 Fibers: 0.28”.
         iii. 12 to 24 Fibers: 0.50”.
         iv. 25 to 60 Fibers: 0.80”.
         v. 61 to 108 Fibers: 0.90”.
         vi. 109 to 144 Fibers: 1.10”.
      c. Performance:
         i. As for FO*-OP.
      d. Manufacturer:
         i. Berk-Tek.
         ii. Or equal.

F. Fiber Optic Cable, Plenum:
   1. Drawing References:
      a. XX FOM-P Multimode, where XX indicates fiber count.
      b. XX FOS-P Single mode, where XX indicates fiber count.
      c. XX FOH-P Hybrid, where XX indicates total fiber count. Ratio of Single mode to Multimode within overall count is 1:1, unless otherwise noted.
   2. Fiber: Refer to
      a. FIBER, MULTIMODE, GENERAL, and
      b. FIBER, SINGLE MODE, GENERAL, as applies.
      c. Application: Intra-building distribution in building plenum and duct space.

3. Listing: Meeting NEC OFNP, Listing by nationally recognized testing agency.
4. Construction:
   a. Refer additionally to Fiber Cable Construction, General, and elsewhere herein.
   b. Jacket: Subject to listing and rating for plenum cable.
   c. Tight Buffer construction only, "Core Lock" not required.
   d. Otherwise as for FO*-OP, except for construction affecting listing.
5. Dimensions, not to exceed the following:
   a. 1 to 4 Fibers: 0.20".
   b. 5 to 12 Fibers: 0.28".
   c. 12 to 24 Fibers: 0.50".
   d. 25 to 60 Fibers: 0.80".
   e. 61 to 108 Fibers: 0.90".
   f. 109 to 144 Fibers: 1.10".
6. Performance:
   a. As for FO*-OP.
7. Manufacturer:
   a. Berk-Tek
   b. Or equal.

G. Fiber Optic Cable, Outside Plant, Riser and Inside, Constrained Diameter:
1. Drawing References:
   a. XX FOM-OPR Multimode, where XX indicates fiber count.
   b. XX FOS-OPR Single mode, where XX indicates fiber count.
   c. XX FOH-OPR Hybrid, where XX indicates total fiber. Ratio of Single mode to Multimode within overall count is 1:1, unless otherwise noted.
2. Fiber and Application:
   a. Inter-building and intra-building distribution in building risers, below building crawl space, manholes and site conduit.
   b. Specifically suitable for continuous splice free entry into building from OSP interior past without distance limits due to construction and/or cable diameter.
3. Listing: UL OFNR. Meeting NEC OFNR.
4. Construction:
   a. Refer additionally to Fiber able Construction, General, and elsewhere herein.
   b. Suitable and approved for wet location. Meets requirements for FO*-OP where installed in those locations.
   c. As for FO*-R with not to exceed dimensional constraint, as follows:

Fiber Count	**Overall Cable Diameter (in.)**
2	0.18
4	0.20
6	0.22
8	0.24

10	0.26
12	0.28
14	0.28
16	0.28
18	0.28
24	0.31
30	0.35
36	0.35
48	0.41
60	0.43
72	0.47
84	0.51
96	0.55
108	0.55
120	0.59
132	0.61
144	0.63
156	0.71

5. Performance:
   a. As for FO*-R.
6. Manufacturer:
   a. Berk-Tek.
   b. Or equal.

PART 3 EXECUTION

3.1 FIBER OPTIC CABLING PRACTICE

A. Service Loop.
   1. At IDF's and BDF's, at both ends of cables, provide at least 30 feet of fiber in excess of that required to reach the patch panel by a dressed route. Form into a storage loop and fix in place as directed by the Owner's Representative.
   2. At the Telecomm Building, provide at least 30 feet of fiber in excess of that required to reach the patch panel by a dressed route. Form into a storage loop and fix in place in the cable vault (outside of the machine room) as directed by the Owner's Representative.

B. Splicing.
   1. Interior: Provide fusion splices.
   2. Exterior: Do not splice at exterior unless splicing is indicated on Plans. In such circumstances, provide fusion splices.

C. Termination Methods.
   1. Review proposed breakout procedure with the Owner's Representative before beginning this work.
   2. Use full cable breakout method. Display both connectorized and non-connectorized fibers entering a patch panel.

3. Remove sheath so that no more than 4 inches of unstripped cable enters the panel.
4. Strip back a sufficient amount of cable so that fiber strands wrap at least one full wrap, circle or figure eight, inside the panel with the connectorized ends attached to the most distant bulkhead connectors.
5. Group together the fibers from each binder group with 0.125 inch nylon spiral wrap. (Commscope/Systimax, Panduit, Corning Cable Systems SAN-DT25-06, or equal.)

D. Outside Plant.
1. Obtain allowable pulling tension for underground fiber cable from the manufacturer. Use pulling equipment with tension gauges to verify that cable pulls do not exceed allowable pulling tension.
2. Loose Tube, Gel Filled Cabling - No flow of filling when tested in accordance with FOTP-81.

E. Loose Tube Breakout.
1. Install breakout tubing over the full exposed length of the fiber strands.
2. Install buffer tubing on all strands, including those not being connectorized as part of this Contract.
3. Reinforce and protect the junction of the cable sheath and buffer tubing using a method approved by the Owner's Representative before beginning this work.

3.2 COPPER BACKBONE TIE CABLE INSTALLATION AND TERMINATION

A. General:
1. Backbone cable(s) shall be installed in conduit system unless otherwise noted.

B. Sequencing:
1. If the installation of a tie cable requires the disconnection and removal of any existing cable(s) carrying active service prior to installation.
   a. Notify the Owner's Representative no less than 5 working days in advance of when this work is to be performed.
2. When this work is performed, the newly installed cables must be installed, tested and passed in one 24 hour period beginning when the active service on the existing cable is interrupted.

C. Installation of Tie Cable:
1. All tie cable between terminal blocks at IDF rooms shall be continuous, unspliced runs.
2. Termination of Voice or Shared Use Tie Cable:
   a. Cable shall be terminated on 66 Type punch blocks system in the following order:
      i. Terminate pairs and groups in order top to bottom and then left to right according to insulation or binder color as listed below.
      ii. “Mate” is the first wire of the pair to be terminated, “Wire” is the second.
   b. Comply with the following table:

Group or Pair Number	Mate	Binder or Wire
1	White	Blue
2	White	Orange
3	White	Green
4	White	Brown
5	White	Slate
6	Red	Blue
7	Red	Orange
8	Red	Green
9	Red	Brown
10	Red	Slate
11	Black	Blue
12	Black	Orange
13	Black	Green
14	Black	Brown
15	Black	Slate
16	Yellow	Blue
17	Yellow	Orange
18	Yellow	Green
19	Yellow	Brown
20	Yellow	Slate
21	Violet	Blue
22	Violet	Orange
23	Violet	Green
24	Violet	Brown
25	Violet	Slate

3. Cables containing pair counts of 50 or greater shall be terminated as follows:
   a. Columns of punch blocks stacked 2 high shall be mounted on the backboard.
   b. Beginning at the top right of the 1st column, first the blue binder will be punched down, followed by the orange binder directly beneath it.
   c. Binder punch will continue top to bottom, and then left to right until the entire cable has been terminated.
   d. Thus a 50-pair cable requires two punch blocks.
4. Upon completing the termination of all cables within an IDF, install a clear plastic cover at each punch block.

3.3 DATA/TELEPHONE IDF ROOM LAYOUT

A. General:
1. Final backboard design layout within an IDF room shall be approved by the Owner's Representative prior to work beginning on the backboard.
2. Reference the design basis layout in the plans and bring to the Owner's Representative's attention any field conditions that would prevent installation as shown on the plans. Submit for resolution in a timely manner.
3. Layout of cable around backboard:

a. All backbone cable shall be formed around the backboard before either rising or dropping vertically to the punch blocks on which they are to be terminated.
b. All backbone cable shall be organized in Wire Management Rings, Split D, Type WMRO. No tywraps or similar bindings are permitted.

4. Termination:
a. Terminate voice pairs and BDF tie cable on 66 blocks.

3.4 DATA/TELEPHONE NODE AND BDF ROOM LAYOUT

A. General:
1. Final backboard and cable runway design layout within the Telecomm Building or within a BDF room shall be approved by the Owner's Representative prior to work beginning.
2. Reference the design basis layout in the plans and bring to the Owner's Representative's attention any field conditions that would prevent installation as shown on the plans. Submit for resolution in a timely manner.

B. Layout of cable around backboard:
1. All cables shall be formed around the backboard before either rising or dropping vertically to the punch blocks on which they are to be terminated.
2. All cables shall be organized in Wire Management Rings, Split D, and Type WMRO. No tywraps or similar bindings are permitted.

C. For outside plant, flooded cables entering the Telecomm Building, a BDF or an IDF functioning as a building entrance facility:
1. Transition in a splice case to non-flooded cable prior to termination on protector blocks for voice pairs, or on an unprotected 66 block for systems pairs, where such are indicated. Where systems pairs are not indicated, assume all pairs are for voice use.
2. Position the splice case on the backboard where accessible for future service. Orient parallel to floor to prevent continuous gel flow from OSP cabling. Place on cable tray only where such placement is indicated on the plans.

END OF SECTION

SECTION 17150
COMMUNICATIONS HORIZONTAL CABLING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes, but is not necessarily limited to provision of:
   1. Horizontal Station Cabling
      a. Horizontal copper station cabling, meeting TIA/EIA Category 6 standards, homerun from receptacles to indicated BDF. Terminate on rack mounted patch panels, as indicated.
   2. For all cabling:
      a. Terminate on patch panels as specified in Section 17119 – Communications Termination Blocks and Patch Panels.
      b. Test cabling to demonstrate performance meets or exceeds specified standards using test equipment and methods as specified in Section 17100 – Structured Cabling, Basic Materials and Methods.
      c. Label cables, jacks, plates and patch panels as specified in Section 17053 – Identification for Communications Systems.
      d. Document on Record Documents as described in Section 17010 – Common Work Results for Communications.

B. Related Documents:
   1. Specification Section 17010 – Common Work Results for Communications applies to this Section.

C. Related Work in Other Sections:
   1. Section 17029 – Hangers and Supports for Communications Systems
      a. J-hooks and hangers for the work of this Section.
   2. Section 17033 – Conduits and Backboxes for Communications Systems
      a. Empty raceway for the work of this Section.
   3. Section 17036 – Cable Trays for Communications Sytstems
      a. Empty tray for the work of this Section.
   4. Section 17039 – Surface Raceways for Communications Systems
      a. Empty raceway for the work of this Section.
   5. Section 17053 – Identification for Communications Systems
      a. Labeling systems and execution for the work of this Section.
   6. Section 17119 – Communications Termination Blocks and Patch Panels
      a. Specification for patch panels and blocks used by work of this Section
   7. Section 17123 – Communications Cable Management
      a. Specification for innerduct, backboard and patch cord management used by the work of this Section.

1.2 REFERENCES

A. As listed in Section 17100 – Structured Cabling, Basic Materials and Methods.

1.3 SUBMITTALS

A. Conform with the requirements of Section 01300 – Administrative Requirements and Section 17010 – Common Work Results for Communications.

1.4 DELIVERY, STORAGE AND HANDLING

A. Procedures: In accordance with Section 01600 – Product Requirements and Section 17100 – Structured Cabling, Basic Materials and Methods.

1.5 SEQUENCING

A. Not Used.

PART 2 PRODUCTS

2.1 GENERAL

A. All products shall be NEW.

B. All devices shall comply with all parts of ANSI/TIA/EIA 568-B.1, B.2, B.3 Commercial Building Telecommunications Standard.

C. The wiring configuration for all telecommunications devices shall be T568-B.

D. All UTP cabling shall meet or exceed all requirements in this specification, ANSI/TIA/EIA S-80-576 that are applicable to four-pair inside wiring cable for non-plenum spaces within a building.

E. All Copper data cabling and data connectivity products shall be manufacturer-recommended end-to-end combinations (patch cords, station connectors, horizontal cabling, and patch panels). The selected combination must meet the following criteria:

1. ETL Verified Components to ANSI/TIA-568-B.2-1 (Category 6)
2. ETL Verified Patch Cords to ANSI/TIA-568-B.2-1 (Category 6)
3. ETL Verified Communications Cables to ANSI/TIA 568-B.2-1 (Category 6).

F. Products are specified throughout this specification either by reference standard or by manufacturer and part number in order to establish quality and performance characteristics of individual products. Contractor's options for selecting each product are as follows:

1. Product specified only by reference standards: Select any product meeting standards.
2. Product specified by naming several products and/or manufacturers: Select any product and/or manufacturer named.
3. Product specified by naming several products and/or manufacturers and reference standards: Select any product meeting standards. Product and/or manufacturer names indicate products and/or manufacturers, which meet standards.
4. Product specified by naming only product: Select product specified.
5. Product specified by naming one or more products and stating "or equal" with the specified product: Select any product named or submit request for substitution for any product not specifically named. Product substitutions submitted prior to bid shall be handled according to procedures outlined in section 00430 – Supplements to Bid Form. Product substitutions submitted after contract award shall be handled according to procedures outlined in sections 00700 – General Requirements and 01600 – Product Requirements.

2.2 DATA AND VOICE HORIZONTAL CABLE

A. Drawing Reference:
   1. Plenum rated (CMP) cables: ** UTP6-4P, where:
      ** = cable count
   2. Riser rated (CMR) cables: ** UTP6-4, where:
      ** = cable count

B. The horizontal cable, running to/from each data or voice port, shall be BLUE in color.

C. Manufacturer:
   1. In plenum spaces, Berk-Tek 4 pair, 24 AWG, Category 6, CMP, LanMark 1000 P/N 10032094 or equal.
   2. In spaces not noted as plenum space, Berk-Tek 4 pair, 24 AWG, Category 6, CMR, LanMark 1000 P/N 10032455 or equal.

2.3 MODULAR JACKS AND BLANK INSERTS

A. Modular Jacks
   1. Single modular inserts for data and voice ports shall be 8-position, 8-conductor, 180°, T568A/B.
   2. Manufacturer:
      a. The modular insert for data port #1 shall be DARK ORANGE, Ortronics P/N OR-TJ600-43 or equal.
      b. The modular insert for data port #2 shall be DARK ORANGE, Ortronics P/N OR-TJ600-43 or equal.
      c. The modular insert for data port #3 shall be DARK ORANGE, Ortronics P/N OR-TJ600-43 or equal.
      d. The modular insert for data/voice port #4 shall be DARK BLUE, Ortronics P/N OR-TJ600-36 or equal.

B. Blank Inserts
   1. All empty positions within a faceplates and surface mount boxes shall be filled with blank inserts.
   2. Manufacturer:
      a. Ortronics TracJack, FOG WHITE P/N OR-42100002-88 or equal.

2.4 WORK AREA FACEPLATES AND DEVICE BOXES

A. Drawing Reference:
   1. MMP4 = Wall mount, single gang, 4-port faceplate
   2. MMP6 = Wall mount, single gang, 6-port faceplate
   3. IRR4 = Inline surface raceway, single gang, 4-port faceplate
   4. IRR6 = Inline surface raceway, single gang, 6-port faceplate
   5. OMP4 = System furniture, 4-port faceplate
   6. OMP6 = System furniture, 6-port faceplate

B. All faceplates shall be UL listed and CSA certified.

C. All faceplates shall be constructed of high-impact, ABS plastic UL 94V-0 construction (unless otherwise specified).

D. All faceplates shall have a minimum of four (4) modular inserts.

E. Manufacturer:

1. Wall mount, single gang 4 port faceplate Ortronics TracJack Series, FOG WHITE, P/N OR-40300546 or equal.
2. Wall mount, single gang, 6 port faceplate Ortronics TracJack Series, FOG WHITE, P/N OR-40300545 or equal.
3. Inline surface raceway faceplates shall be from the same manufacturer and product series as the raceway itself. Faceplates shall be specifically designed by the manufacturer to accept the data and voice modular inserts specified in this section.
4. System furniture, 4-port faceplate Ortronics TracJack Series, BLACK, P/N OR-40300633-00 or equal.

2.5 WALL TELEPHONE FACEPLATES

A. Drawing References:
   1. Wall Mounted Telephone, Flush
   2. 630A

B. Construction, where not otherwise specified, scheduled, or indicated:
   1. Mechanically fastened to building or similar. Adhesive fastening is not acceptable.
   2. Stainless steel or high strength 94VO plastic.
   3. Mounts to single gang ring, single gang box, or surface mount box. Refer to schedule on drawings.
   4. Shall accept one (1) modular jack specified in paragraph 2.3.
   5. Face of jack is flush with surface of faceplate when mounted into faceplate.

C. Manufacturer:
   1. Ortronics OR-40300637
   2. Or equal.

2.6 DATA PATCH CORDS

A. All UTP patch cords shall be factory terminated.

B. Lengths at the workstation shall not be less than 5 ft nor more than 9 ft.

C. Lengths at the patch panel shall not be less than 3 ft nor more than 15 ft.

D. Coordinate lengths in with the owner through the construction chain of command prior to purchasing.

E. Manufacturer:
   1. 3 ft patch cords Ortronics Clarity Category 6, BLUE, P/N OR-MC603-06 or equal.
   2. 5 ft patch cords Ortronics Clarity Category 6, BLUE, P/N OR-MC605-06 or equal.
   3. 7 ft patch cords Ortronics Clarity Category 6, BLUE, P/N OR-MC607-06 or equal.
   4. 9 ft patch cords Ortronics Clarity Category 6, BLUE, P/N OR-MC609-06 or equal.
   5. 15 ft patch cords Ortronics Clarity Category 6, BLUE, P/N OR-MC615-06 or equal.

2.7 VOICE PATCH CORDS

A. This section applies to patch cords used to distribute dial tone from voice backbone termination blocks to patch panels in the telecommunications Entrance Facility (EF)

and each Telecommunications Room (TR) ONLY. See paragraph 2.5 for specifications for patch cords used to distribute data connections in Telecommunications Equipment Rooms (ER), Telecommunications Rooms (TR), and work areas.

B. Voice patch cords shall be single-ended, 4-pair solid cable assembly, T568B, gray jacket, 20 ft, CMR, no boot

C. Manufacturer:
   1. Siemon P/N IC5-8A-20
   2. Or equal.

2.8 UNSPECIFIED PRODUCTS

A. Any product not specifically addressed in this specification or on the drawings but required in order to provide a complete and functional structured cabling system shall be provided by the telecommunications contractor in a quantity and level of quality consistent with the specified items. Unspecified products shall be approved by the owner through the construction chain of command prior to installation. Product submittal requirements for specified products shall also apply to unspecified products.

PART 3 EXECUTION

3.1 GENERAL

A. All devices shall comply with ANSI/TIA/EIA 568-B., B.2, B.3 Commercial Buildings Telecommunications Standard.

B. All telecommunication outlets shall be T568B wiring configuration.

C. All products shall meet or exceed all requirements of this specification.

D. The telecommunications contractor's work shall comply with all contract documents including, but not limited to:
   1. Architectural floor plans
   2. Furniture plans
   3. Equipment layouts
   4. Electrical contract documents
   5. Telecommunications contract documents

E. The telecommunications contractor shall coordinate all work with all other trades and:
   1. Project manager
   2. General contractor
   3. Electrical contractor
   4. Owner

F. The telecommunications contractor shall refer to drawings for pathways including sleeves, conduits, cable trays and runways, and J-hook supports to be utilized for the structured cabling system.

G. The telecommunications contractor shall perform work so that progress of entire project including work of other sections is not interfered with or delayed.

H. The telecommunications contractor shall obtain detailed installation information from all manufacturers under other specification sections that affect the installation of the

structured cabling system and provide information on products furnished under this section that affect work specified in other sections.

I. The telecommunications contractor shall not disrupt existing services. Existing services shall remain operational at all times unless there is a compelling need to disrupt them. If such a compelling need is determined to exist, then the telecommunications contractor shall coordinate an outage through the construction chain of command at least 48 hours in advance.

3.2 WORKMANSHIP

A. All work shall adhere to the reference standards in Part 1 of this specification.

B. Work shall be executed in workmanlike manner and shall be neat, plumb, parallel to the building structure, perpendicular to all electronics and associated cabling and neat in appearance when completed.

C. The telecommunications contractor shall maintain maximum headroom at all times and shall not run work exposed unless noted as such on the drawings.

D. Material and equipment shall be new and installed according to manufacturer's recommended best practices so that the completed installation operates safely and efficiently.

E. The telecommunications contractor is responsible for the greater quantity and better quality where conflicts exist.

F. Any reference to telecommunications outlet shall indicate faceplate, modular insert, termination, cabling, labeling, etc.

G. All cabling shall be terminated at both ends unless otherwise noted on the drawings.

3.3 DATA AND VOICE HORIZONTAL CABLE

A. Install one (1) horizontal Category 6 cable from each data and voice modular insert within faceplate to its corresponding patch panel.

B. All cables shall be labeled at both ends with the cable ID using equipment and permanent labels approved by the owner. See Section 17053 – Identification for Communications Systems for cable identification specifications.

C. All four pairs of each horizontal cable shall be terminated at both ends.

1. One end of the horizontal cable shall be terminated in an 8-position, 8-conductor modular jack at the telecommunications outlet.
2. One end of the horizontal cable shall be terminated in an 8-position, 8-conductor 110 data patch panel within the Telecommunications Room (TR).

D. Install cable in specified raceways and cable trays.

E. Cable pulling: Pulling tension: Maximum pulling tensions for 4-pair horizontal UTP cable shall not exceed 110N (25 lbf).

F. Maintain cable twist to within ¼ inch of the main point of Insulation Displacement Contact (IDC).

G. When stripping cable for termination remove only a minimum amount (i.e., as little as possible) of cable jacket insulation (not to exceed ½ inch).

H. Additional cable slack (Service Loop) shall be provided at both ends for maintenance or future cabling system changes:

1. Telecommunications Entrance Facility (EF)/Telecommunications Rooms (TRs)/Service Loop: 10 feet (arranged in figure 8 or serpentine fashion wherever possible to avoid inductance).

2. Work Area or Wall Telephone outlet: 3 feet

I. Splices are not permitted in any horizontal cabling.

J. No horizontal cable run from modular connector to patch panel shall exceed 90 m (295 ft) including slack.

K. Horizontal cable shall run loose throughout all conduits. At no time shall any horizontal cable within a conduit be secured by zip ties, electrical, tape, hook and loop closure straps or similar bindings.

L. Cables for corresponding data and voice ports shall be terminated on separate patch panels. See Section 17053 – Identification for Communications Systems for cable identification specifications.

1. Patch panel A shall be used to terminate data port #1 for all stations.
2. Patch panel B shall be used to terminate data port #2 for all stations.
3. Patch panel C shall be used to terminate data port #3 for all stations.
4. Patch panel D shall be used to terminate data/voice port #4 for all stations.
5. Patch panel P shall be used to terminate all wall telephones.

3.4 MODULAR JACKS AND BLANK INSERTS

A. Install all data and voice modular inserts.

B. Refer to the drawings for configuration and orientation of modular inserts within each data and voice faceplate.

C. Refer to the drawings for configuration and orientation of icons.

3.5 WORK AREA AND WALL TELEPHONE FACEPLATES AND DEVICE BOXES

A. Install all faceplates and device boxes.

B. Refer to the drawings for location of work area and wall telephone faceplates and device boxes.

C. Refer to the drawings for configuration and orientation of work area and wall telephone faceplates and device boxes.

D. Coordinate exact location, configuration, and orientation of all work area and wall telephone faceplates and device boxes through the construction chain of command prior to installation.

3.6 DATA PATCH CORDS

A. The telecommunications contractor shall provide a quantity of patch cords to match 100 percent of the total quantity of data and voice ports terminated within each installed patch panel.

B. The telecommunications contractor shall provide a quantity of patch cords to match 100 percent of the total quantity of installed data modular inserts within the data/voice faceplates at the work areas.

C. The telecommunications contractor shall deliver all patch cords to Owner's Representative.

3.7 TESTING AND CERTIFICATION

A. 100 percent of horizontal data and voice cabling shall be tested and certified in accordance with Section 17160 – Communications Structured Cable Testing and Certification.

END OF SECTION

APPENDIX D – MURRAY ADOBE RECOMMENDATIONS

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February 16, 2023

Brian Nelson
City of San Luis Obispo
919 Palm Street
San Luis Obispo, CA 93401

RE: Murray Adobe Recommendations for Phase 1 of the Mission Plaza Concept Plan

Dear Mr. Nelson:

At the request of RRM Design Group, Applied EarthWorks, Inc. (Æ) is pleased to present the following recommendations for appropriate treatment of the Murray Adobe during implementation of Phase 1 of the Mission Plaza Concept Plan (Plan). Phase 1 of the Plan includes removal of the trellis adjacent to the adobe, removal and replacement of landscaping and hardscaping, and extending the existing patio along the southwest wall to the southeast. Other actions include removal of existing public restrooms, planters, mature trees, and hardscape near Murray Adobe within Mission Plaza; construction of new public restrooms; and installation of new hardscape, planters, and trees. Murray Adobe is on the City of San Luis Obispo Master List of Historic Resources and is considered a historical resource under the California Environmental Quality Act (CEQA). Projects that are consistent with the Secretary of the Interior's (SOI) Standards will not result in a significant impact under CEQA.

On December 20, 2022, Æ Senior Architectural Historian Amber Long met with Mark Sauer, owner of Mark Sauer Construction, Debbie Rudd, Principal at RRM Design Group, and representatives from the City of San Luis Obispo (City) in Mission Plaza to tour Murray Adobe. During the site visit Mr. Sauer visually inspected the interior and exterior of the adobe, while discussing the project with the team. Mr. Sauer has worked extensively with historic adobe buildings around California and has successfully implemented protection measures that have been successful over decades of monitoring.

The following information is summarized from Mr. Sauer's report and subsequent email (see attached). All recommendations are consistent with the SOI Standards for the Treatment of Historic Places (Grimmer 2017).

Existing Condition

The adobe is in fairly good condition except for the exposed adobe wall. The existing cement-based plaster is not the correct application for the adobe. Adobe bricks expand and contract, while the cement-based plaster is rigid, which can create structural issues. Sections of the plaster are delaminating from the interior and exterior of the adobe.

Phase 1 Recommendations. The following recommendations should be followed during Phase 1 of the Plan.

- Demolition of the pavement adjacent to the adobe should start with a cut 3 to 4 feet away from the exposed adobe. The pavement will then be removed by hand, limiting the potential for damage to the adobe. Where new paving will abut the adobe, some form of masonry protection

board should be installed. This process should also be followed where the patio will be extended along the adobe, to the southeast.

- The existing flashing, trellis, and patio cover can be removed. A new ledger should be installed directly to the adobe wall using epoxy anchors and should support a small patio cover over the exposed adobe wall. A structural engineer should be consulted regarding the size, depth, and frequency of the anchors.

- Existing plaster should be cut away to allow direct anchoring of the ledger to the adobe wall. Enough plaster should be removed so the top of the new flashing is covered. Copper flashing is preferable. Expanded metal lath with 3-inch exterior grade screws and fender washers are recommended. Plaster around the ledger and new flashing will need to be repaired. New lime plaster should not contain cement.

- The exposed area of the adobe wall should be reduced to a 3 by 3 foot area. The area will be used as a view panel with a wood frame and laminate glass. The remaining exposed adobe should be covered in lime plaster. New lime plaster should not contain cement.

Recommendations for Additional Work. After completion of Phase 1, the following recommendations should be followed to address ongoing condition issues.

- All cement-based plaster should be removed from the interior and exterior adobe walls and a new lime-based plaster applied. Additional information can be found at www.limes.us.

- Proper site drainage is critical to preserving Murray Adobe. All mulch should be removed within 12 to 18 inches of the adobe walls. Irrigation must be altered so that no water hits the walls or pools at the base of the walls. Based on the direction of the slope, water will continue to flow from Mission San Luis Obispo de Tolosa towards the adobe to San Luis Creek. French drains could be installed to route the flow of water around the adobe.

- All existing wood windows need repairs. Windows can be salvaged by repairing the glass and glazing. Wood repairs should include “dutchman” repairs and the addition of wood consolidating products. Additional information can be found at www.abatron.com.

- The roof needs to be replaced; however, it is currently holding out water. A new roof will require new ply sheathing.

- A seismic retrofit should be considered for the adobe as part of a structural upgrade.

Secretary of the Interior’s Standards

Until a new use is proposed for Murray Adobe, the SOI Standard for Preservation should be followed to preserve the adobe in its current configuration. The recommendations above, including proper lime plaster coatings, reducing the exposed area of the adobe, improving drainage and window repairs, are consistent with the Standard for Preservation, which is:

> "… the act or process of applying measures necessary to sustain existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacements and new construction." (Grimmer 2017:2)

The following National Park Service Preservation Briefs and Preservation Tech Notes provide further guidance on the recommendations above. They can be found at www.nps.gov.

- *Preservation Brief 4: Roofing for Historic Buildings ((Sweetser 1978)*
- *Preservation Brief 5: The Preservation of Historic Adobe Buildings ((Tiller and Look 1978)*
- *Preservation Brief 9: The Repair of Historic Wooden Windows (Myers 1981)*
- *Preservation Brief 10: Exterior Paint Problems on Historic Woodwork (Weeks and Look 1982)*
- *Preservation Brief 41: The Seismic Rehabilitation of Historic Buildings (Aguilar 2016)*
- *Temporary Protection 3: Protecting a Historic Structure During Adjacent Construction (Randl 2001)*
- *Windows 1: Planning Approaches to Window Preservation (Fisher 1984)*
- *Windows 4: Replacement Wooden Frames and Sashes (Feist 1984)*
- *Windows 14: Reinforcing Deteriorated Wooden Windows (Stumes 1986)*

The preceding recommendations are intended to limit or eliminate any unintended damage to Murray Adobe from implementation of Phase 1 of the Plan. In the event of unintended damage, including but not limited to new cracking or chipping plaster, or crumbling adobe bricks, work in the area around Murray Adobe should stop and a structural engineer and/or adobe specialist consulted.

Æ appreciates the opportunity to provide this guidance. If you have further questions, please contact Managing Principal Erin Enright at (805) 594-1590, extension 316, or eenright@appliedearthworks.com.

Sincerely,

Amber Long, M.A.
Senior Architectural Historian
Applied EarthWorks, Inc.

Attachments: Site Visit Report 1.12.23; Email from Mark Sauer 2.7.2023; and C. Ledger With Flashing Simple Sketch

REFERENCES CITED

Aguilar, Antonio
2016 *The Seismic Rehabilitation of Historic Buildings*. Preservation Briefs No. 41. U.S. Department of the Interior, National Park Service, Technical Preservation Services, Washington, D.C.

Feist, William C.
1984 *Replacement Wooden Frames and Sash, Protecting Woodwork against Decay.* Windows, No. 4. Preservation Tech Notes. U.S. Department of the Interior, National Park Service, Preservation Assistance Division, Washington, D.C.

Fisher, Charles E.
1984 *Planning Approaches to Window Preservation.* Windows, No. 1. Preservation Tech Notes. U.S. Department of the Interior, National Park Service, Preservation Assistance Division, Washington, D.C.

Grimmer, Anne E.
2017 *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, & Reconstructing Historic Buildings*. Rev. ed. U.S. Department of the Interior, National Park Service, Technical Preservation Services, Washington, D.C.

Myers, John H.
1981 *The Repair of Historic Wooden Windows*. Preservation Brief No. 9. U.S. Department of the Interior, National Park Service, Preservation Assistance Division, Washington, D.C.

Randl, Chad
2001 *Protecting a Historic Structure During Adjacent Construction.* Temporary Protection, No. 3. Preservation Tech Notes. U.S. Department of the Interior, National Park Service, Heritage Preservation Services, Washington, D.C.

Stumes, Paul
1986 *Reinforcing Deteriorated Wooden Windows.* Windows, No. 14. Preservation Tech Notes. U.S. Department of the Interior, National Park Service, Preservation Assistance Division, Washington, D.C.

Sweetser, Sara M.
1978 *Roofing for Historic Buildings*. Preservation Brief No. 4. U.S. Department of the Interior, National Park Service, Preservation Assistance Division, Washington, D.C.

Tiller, de Teel Patterson, and David W. Look
1978 *Preservation of Historic Adobe Buildings*. Preservation Briefs No. 5. U.S. Department of the Interior, National Park Service, Heritage Preservation Services, Washington, D.C.

Weeks, Kay D., and David W. Look
1982 *Exterior Paint Problems on Historic Woodwork*. Preservation Brief No. 10. U.S. Department of the Interior, National Park Service, Preservation Assistance Division, Washington, D.C.

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Corona, CA 92881

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Fax: (951) 279-5917
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Email: contact@msauer.com
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Submitted to:
Amber Long, M.A.
Applied EarthWorks, Inc.
Senior Architectural Historian / Project Manager

01/12/23
Sent Electronically

Site Visit Report for:
Murray Adobe
747 Monterey St.
San Luis Obispo, Ca.

On December 20th, 2022 Mark Sauer, President & CEO of Mark Sauer Construction, Inc. (MSC) visited the Murray Adobe. We were asked by Amber Long, Applied EarthWorks, Inc. to visit the site, provide general assessments and author a site visit report.

The adobe is situated in a downtown City park with high public use. The Murray Adobe has a rich history and what remains of the original adobe is an excellent example early California living.

The observation of MSC is the Adobe is in reasonably good condition. Except for a large exterior area of exposed adobe block the building is covered with a cement-based plaster. This is not a good application for adobe structures. Adobe expands and contracts with the changes in the atmospheric conditions. Cement-based plaster is ridged. This leads to undetected damage to the adobe under the cement-based plaster. By sounding the walls, sections of the plaster are found to be delaminating from the adobe. MSC recommends that all cement-based plaster (inside + out) be removed and a new application of a lime-based plaster be applied. Further reference for lime plaster can be found at: http://www.limes.us/

MSC understands that the existing Trellis and the paving will be removed. MSC recommends that demolition of the paving start with a 3' - 4' section off the adobe wall be demolished first. This section should be done by hand to limit collateral damage to the adobe. At any point where new paving is to be in contact with the adobe, some form of masonry protection board should be installed. Any alteration to the Trellis that would have a small section to serve as a protective feature for the adobe is acceptable. A new treated wood ledger can be fastened to the adobe with epoxy anchors. See a similar example epoxy anchoring: https://youtu.be/ZiokvnKg7TY

Site drainage will be a critical part of the general preservation of the Murray Adobe. MSC understands there is an up-coming development of the surrounding park. Drainage and surface water flow will be important considerations. Attached find a simple sketch of drainage at a historic adobe

It is unknown to MSC if the adobe has received a seismic retrofit. If not, we highly recommend a structural up-grade be part of the master plan. The roof has long exceeded its life expectancy. It seems to be holding the water out as of now. Structural up-grade and/or roofing will call for new ply sheathing. This will be part of the stabilization and weather proofing of the Adobe.

All windows need restoration. All can be salvaged and repaired. It should be expected that the repairs will require glass and glazing, "dutchman" repairs and application of wood consolidation. See additional information at: https://www.abatron.com/

It is important that all work on the Murray Adobe is done under the Secretary of the Interior Standards for Historic Preservation.

Please see the attached photos

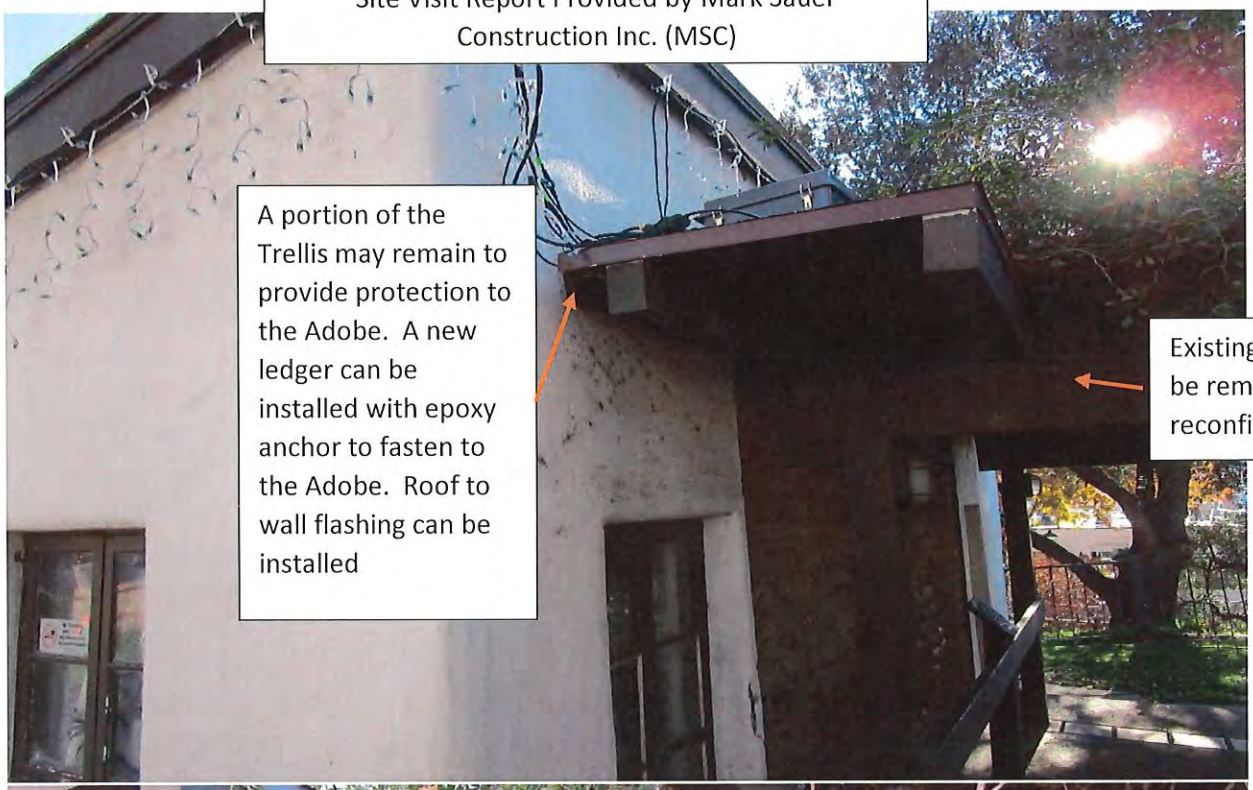
Submitted by:

Mark Sauer
President & CEO MSC Inc.

Murray Adobe

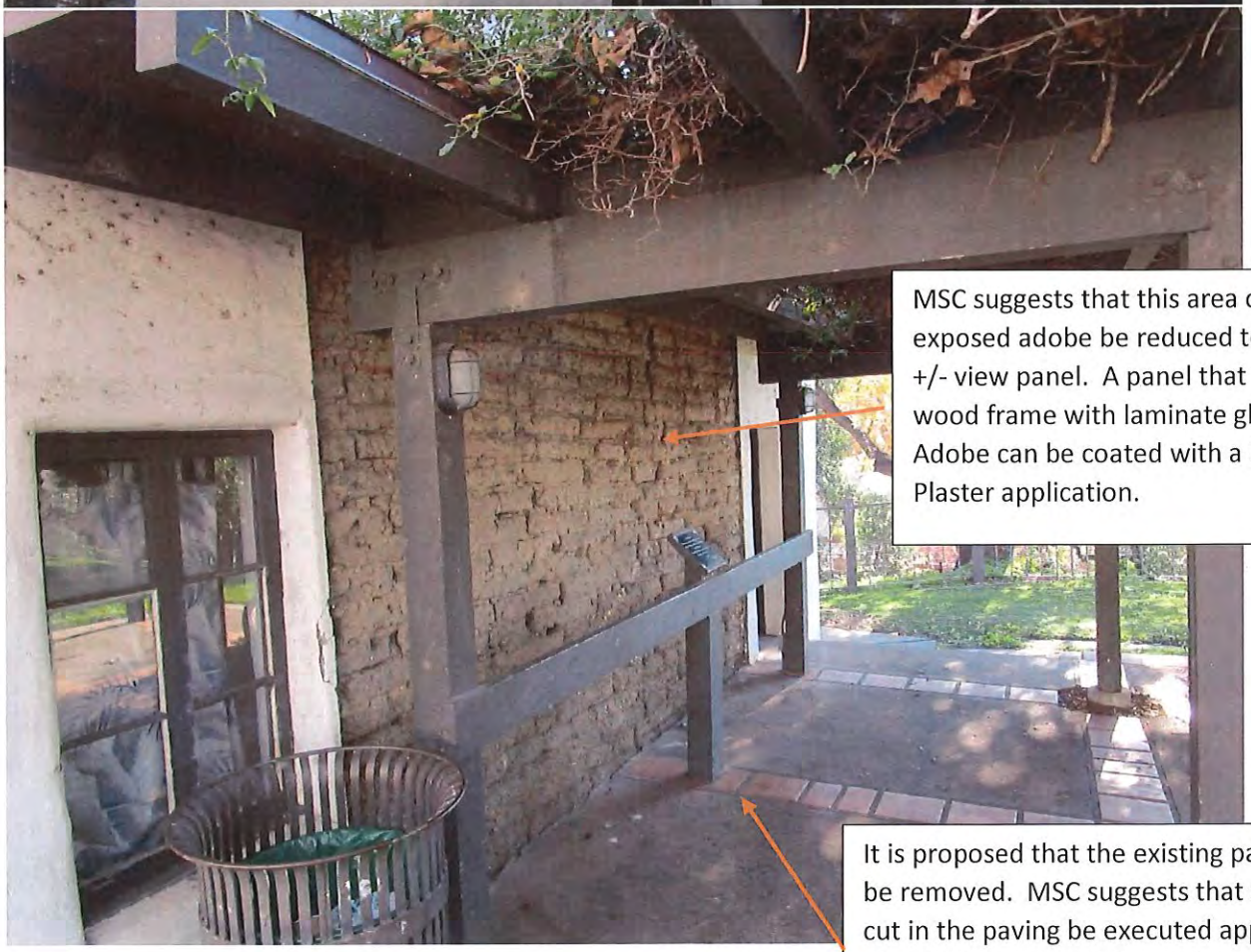
San Luis Obispo

Site Visit Report Provided by Mark Sauer Construction Inc. (MSC)



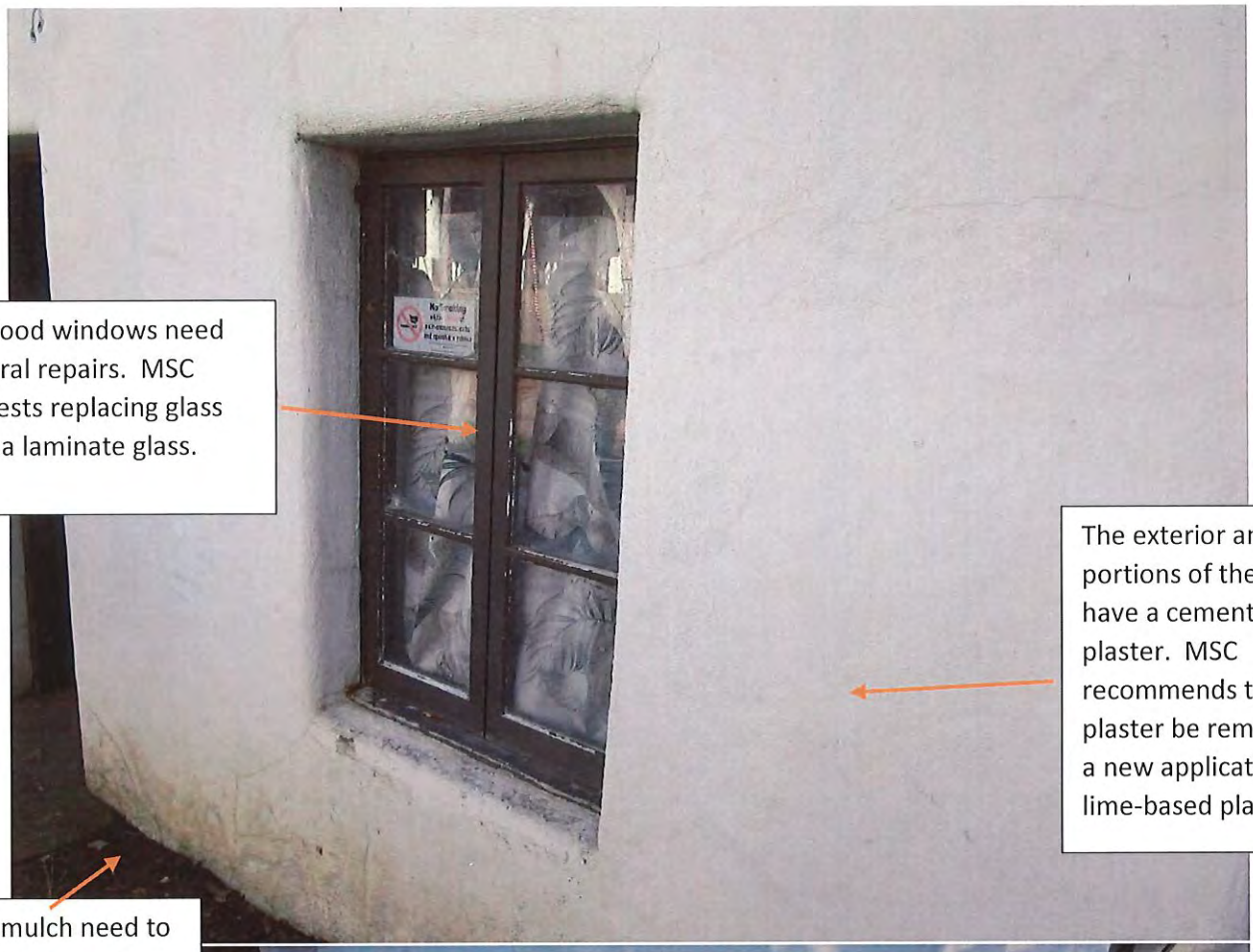
A portion of the Trellis may remain to provide protection to the Adobe. A new ledger can be installed with epoxy anchor to fasten to the Adobe. Roof to wall flashing can be installed

Existing Trellis to be removed or reconfigured.



MSC suggests that this area of exposed adobe be reduced to a 3'x3' +/- view panel. A panel that is a wood frame with laminate glass. The Adobe can be coated with a Lime Plaster application.

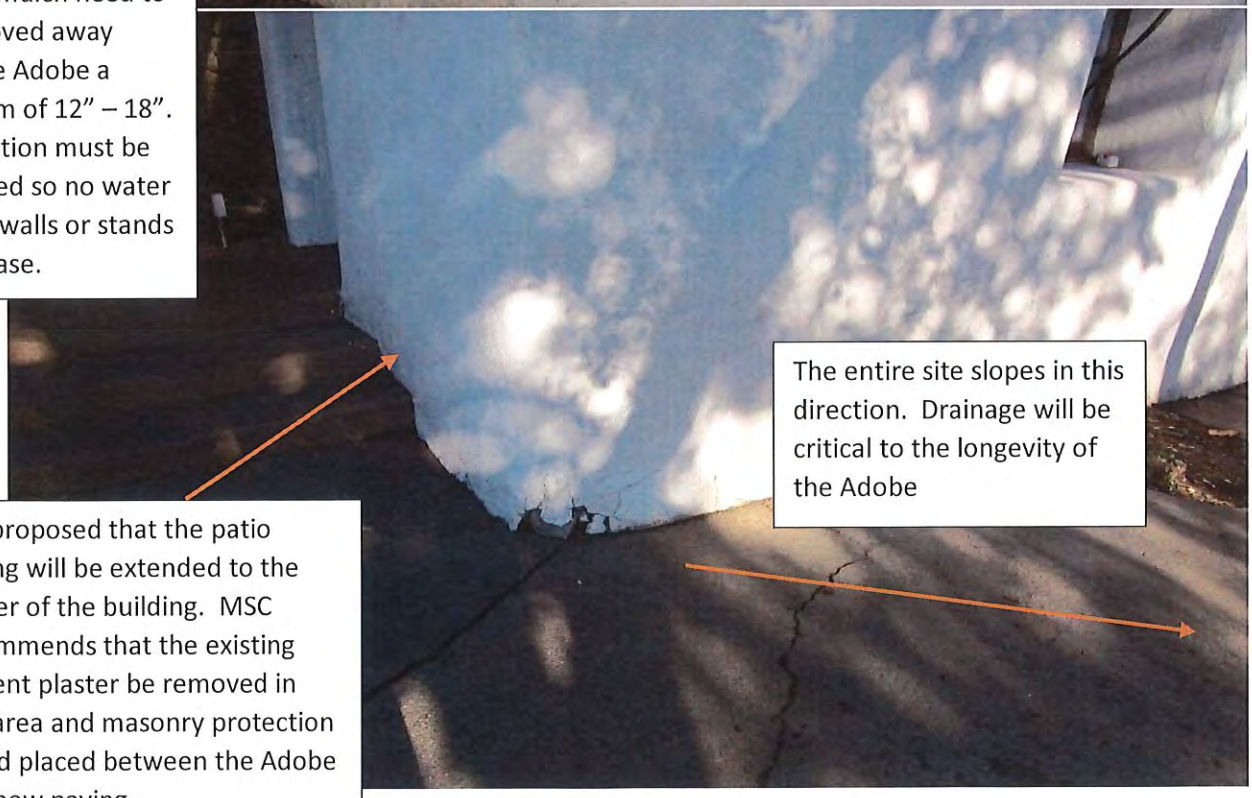
It is proposed that the existing paving will be removed. MSC suggests that a control cut in the paving be executed approx. 3'-4' away from the Adobe and removal be done by hand to limit collateral damage to the Adobe



All wood windows need general repairs. MSC suggests replacing glass with a laminate glass.

The exterior and large portions of the interior have a cement-based plaster. MSC recommends this plaster be removed and a new application of a lime-based plaster.

Any/All mulch need to be removed away from the Adobe a minimum of 12" – 18". All irrigation must be controlled so no water hits the walls or stands at the base.

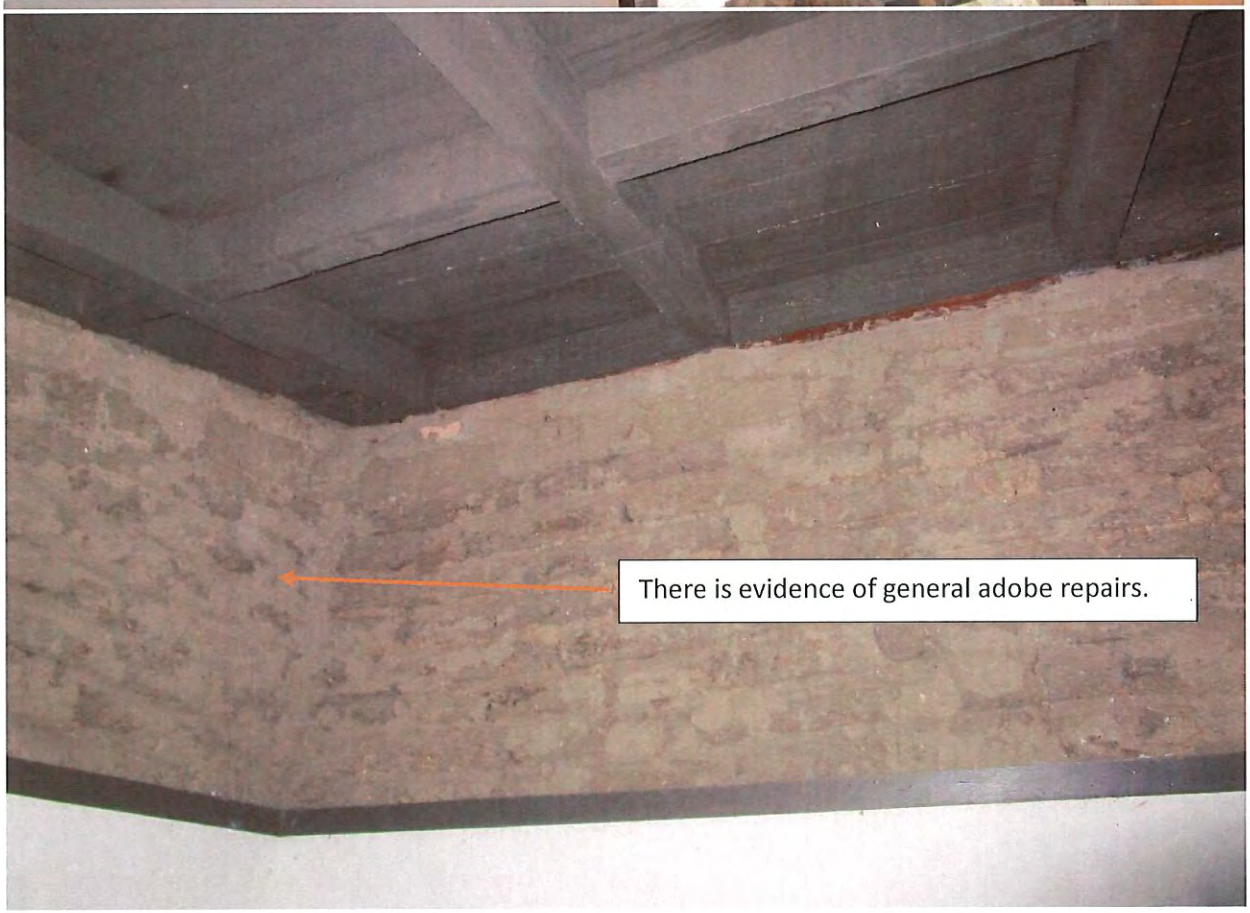


The entire site slopes in this direction. Drainage will be critical to the longevity of the Adobe

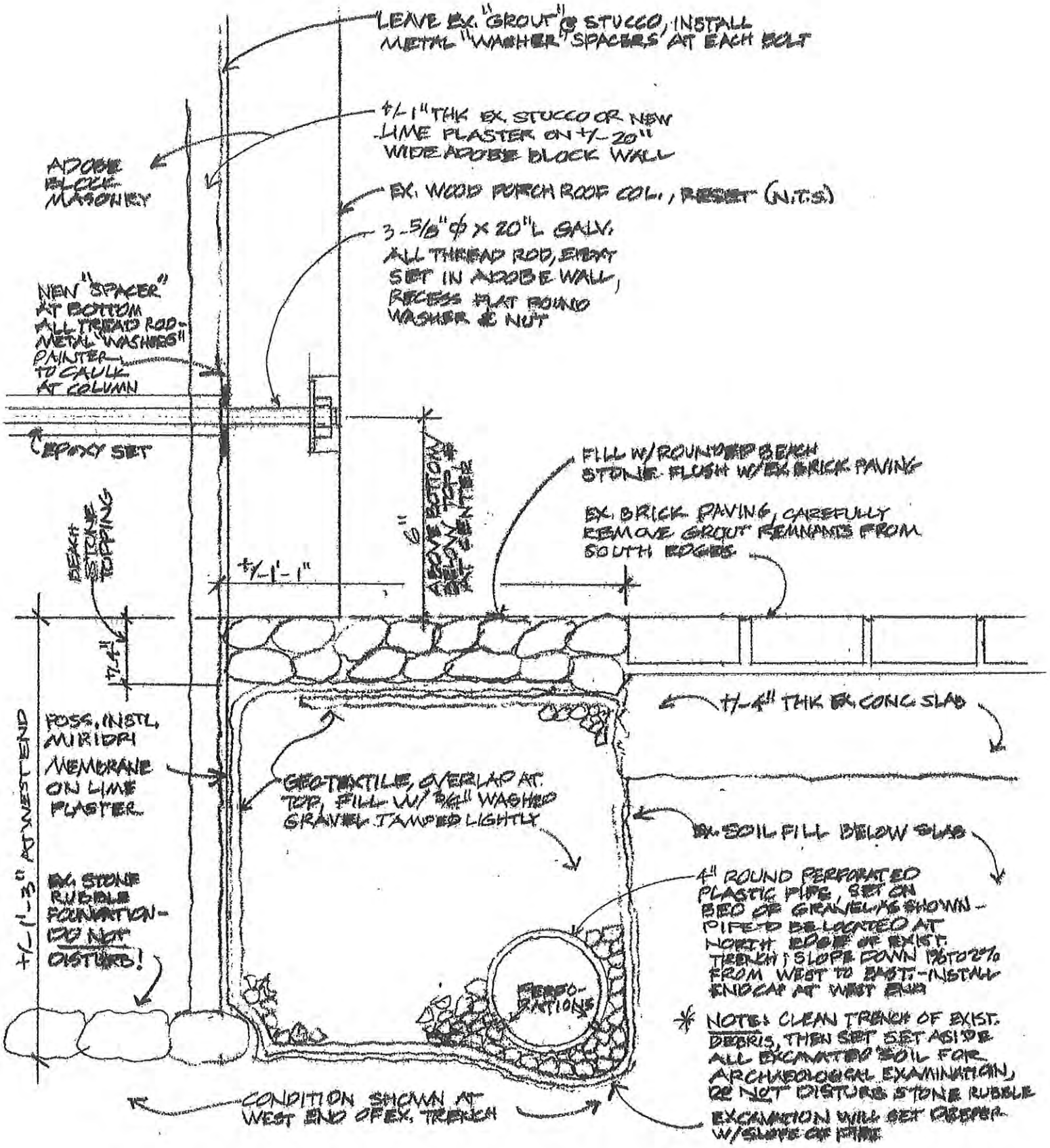
It is proposed that the patio paving will be extended to the corner of the building. MSC recommends that the existing cement plaster be removed in this area and masonry protection board placed between the Adobe and new paving.

It is unknown to MSC if this adobe has had a seismic retrofit. If no structural up-grade has been executed it is highly recommended

Interior plaster should be removed leaving the adobe walls raw. Typical.



There is evidence of general adobe repairs.



MICHAEL WHITE ADOBE – FILLING AT TRENCH AT NORTH WALL OF SOUTH WING

From:	Mark Sauer
To:	Amber Long
Subject:	RE: Murray Adobe
Date:	Tuesday, February 7, 2023 10:40:00 AM
Attachments:	Ledger with Flashing simple sketch 2.07.23.pdf

Hi Amber

Sorry I overlooked that part. I envision something like this.

Incorporated into the new or reworked wood patio cover/trellis a new or added 4x (or greater) ledger can be installed. This ledger should be treated lumber. The ledger can be anchored to the adobe wall using epoxy anchors. A structural engineer should be consulted to recommend the size, depth and frequency of these anchors. The anchors will be placed either horizontally or at a 22-degree angle. This will also be per the engineer's recommendations.

Were the new ledger is installed the existing plaster needs to be cut away and the ledger installed directly to the adobe wall. Enough plaster needs to be removed so the top vertical leg of the new flashing (preferably copper) gets covered. Expanded metal lath should be used in the repair area. Install lath with 3" exterior grade screws with fender washers. Please see my simple sketch.

Plaster will need to be repaired all around the new ledger.

If the exiting patio cover/trellis is to remain and new "ledger" can be installed above the existing following the same procedure.

Sincerely
Mark Sauer
President & CEO, MSC, Inc.

MSC EXCELLENCE SINCE 1986! INTEGRITY ♦ CRAFTSMANSHIP VALUE ♦ SAFETY

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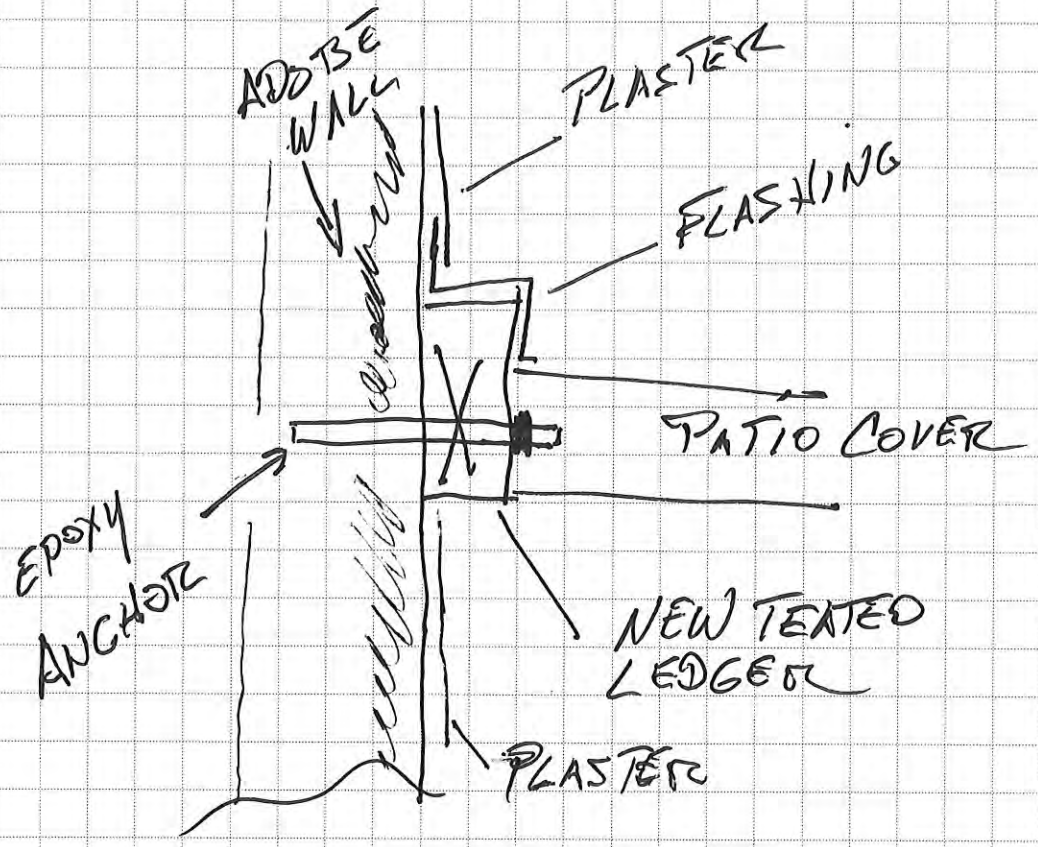
JOB MURRAY ADOBE
SHEET NO. _____ OF _____
CALCULATED BY _____ DATE 2/7/23
CHECKED BY _____ DATE _____
SCALE Ø



* IF PATIO IS TO BE REBUILT

PRODUCT 204-1 (Single Sheets) 205-1 (Padded)

APPENDIX E – ARCHEOLOGICAL MONITORING PLAN

Mission Plaza Restroom and Kiosk Project

Archaeological Monitoring Plan

prepared for

City of San Luis Obispo
Public Works Department
919 Palm Street
San Luis Obispo, California 93401

prepared by

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
San Luis Obispo, California 93401

February 2023

RINCON CONSULTANTS, INC. SINCE 1994

Please cite this report as follows:

Bilchak, Rachel, Dustin Merrick, Ken Victorino, Shannon Carmack, Christopher W. Purtell

2023 *Mission Plaza Restroom and Kiosk Project Archaeological Monitoring Plan, San Luis Obispo County, California*. Rincon Consultants Project No. 23-14824. Report on file at Rincon Consultants, Inc. 180 North Ashwood Avenue Ventura, California 93001.

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1 Introduction

Rincon Consultants, Inc. (Rincon) was retained by the City of San Luis Obispo (City) to provide an Archaeological Monitoring Plan (AMP) in support of the Mission Plaza Restroom and Kiosk Project (project) in San Luis Obispo, California. The AMP will address the details, timing, and responsibility of the required Conditions of Approval (CoA) for archaeological monitoring activities.

The City proposes to construct a 504 square foot restroom and a 165 square foot kiosk within Mission Plaza in San Luis Obispo, California. The proposed project would include demolition of the existing site structures, utilities, and select trees and landscaping within the project site. Proposed construction activities include the addition of plaza and patio space, a bar seating area, a reconstructed restroom, and a digital art kiosk. The project will also include new site utilities and landscaping.

This Archaeological Monitoring Plan (AMP) was prepared by Rincon Consultants, Inc. (Rincon) in accordance with the Conditions of Approval: ARCH-0052-2022 (989 Chorro) established by the City of San Luis Obispo Public Works Department on June 1, 2022. The purpose of this AMP is to outline the procedures and protocols for archaeological monitoring.

1.1 Archaeological Monitoring

CoA ARCH-0052-2022 states that the applicant shall provide an archaeological monitoring plan prepared by a City -qualified archaeologist to be implemented during construction. The plan shall identify the qualified professional who will conduct the monitoring and circumstances where a Native American tribal representative or qualified site monitor is required. The plan shall recommend specific procedures for responding to the discovery of archaeological resources during the construction of the project consistent with Section 4.60 of the Archaeological Resources Preservation Program Guidelines (ARPPG). The plan shall be submitted as a part of the building permit (CoA-3 2022).

This document outlines the steps to be taken during unanticipated discoveries to mitigate potential significant impacts, determining when Native American monitoring would become necessary, if it all, and provides methods for determining if and when monitoring may be reduced or eliminated during the course of project execution.

1.2 Project Location and Description

Situated between Mission San Luis Obispo de Tolosa (mission) San Luis Obispo Creek (creek), Mission Plaza is located centrally in downtown San Luis Obispo. It encompasses two bridges, a public restroom building, and the historic Murray Adobe (P-40-040036/contributing resource to the San Luis Obispo Downtown Historic District). The Mission Plaza project site is located within Township 30 South, Range 12 East, Sections 26 and 35 as depicted on the *San Luis Obispo, California* United States Geological Survey (USGS) 7.5-minute topographic map (Figure 1). The project site is south of Mission San Luis Obispo de Tolosa, north of San Luis Obispo Creek, east of Broad Street, and west of Chorro Street (Figure 2).

The City proposes to construct a 504 square foot restroom and a 165 square foot kiosk within Mission Plaza (Plaza). The proposed project would involve the demolition of the existing facilities,

excluding the Murray Adobe. This would include the removal of the restroom building, trellis structure, stone walls, curbs, gutters, sidewalks, existing utilities, and select trees and landscaping within the project site.

The new restroom building will be located southwest of the current restroom building and the kiosk will be located between the Murray Adobe and the new restroom building. A new patio area will be developed in a location consistent with the current patio west of Murray Adobe. The new patio area will be connected to the new restroom building via a set of steps and Americans with Disabilities Act (ADA)- compliant ramp. Following construction of the new restroom building, kiosk, and bar, new hardscaping consisting of pavers laid in a star pattern, landscaping and features to support public use, such as benches, lighting, and drinking fountains, will be installed throughout the project site.

1.3 Archaeological Resource Preservation Program Guidelines

Mission Plaza Concept (Phase I) Restroom and Café: Conditions of Approval No. 3

Archaeological Monitoring: The applicant shall provide an archeological monitoring plan prepared by a City -qualified archeologist to be implemented during construction. The plan shall identify the qualified professional who will conduct the monitoring and circumstances where a Native American tribal representative or qualified site monitor is required. The plan shall recommend specific procedures for responding to the discovery of archeological resources during the construction of the project consistent with 4.60 of the Archaeological Resource Preservation Program Guidelines (ARPPG). The plan shall be submitted as a part of the building permit (Conditions of Approval: ARCH-0052-2022 (989 Chorro).

City of San Louis Obispo Archaeological Resources Preservation Program Guidelines: Monitoring of Construction Activities

Section 4.40.3.2: Archaeological Discoveries During Construction

Site security: Site security shall be maintained by fencing and a resident caretaker or private professional security personnel, or other appropriate method to protect the resources from unauthorized collection to the Director's approval. Site security measures shall be provided at the project applicant's expense (City of San Luis Obispo 2009).

4.60.1. Notification

If during the course of a project, archaeological materials are identified by the project archaeologist, archaeological monitor, tribal representative, City staff member, the project applicant or his/her representative or employee, all construction activities that may disrupt those materials shall cease. The Director shall be notified immediately of the discovery of archaeological materials. Refer to Section 4.40.3.2 on Discovery of Human Remains (City of San Luis Obispo 2009).

4.60.2. Field Study

Under most circumstances, the project applicant will be directed to retain a qualified professional archaeologist to immediately visit the site, evaluate the materials recovered and provide a written report to the Director recommending the appropriate course of action.

4.60.3. Mitigation

If significant archaeological resources are present, the archaeologist shall propose specific mitigation measures in writing. The Community Development Director (Director) may approve, approve with changes or reject the mitigation proposal. The project applicant shall implement the proposal, to the satisfaction of the Director. A copy of the archaeologist's recommendations and the Director's decision will be forwarded to the Cultural Heritage Committed (CHC), (City of San Luis Obispo 2009).

1.4 Cultural Resource Sensitivity

Cultural Background

The project site is within a known archaeological site (CA-SLO-2341H), as well as the City's Downtown Historic District, and adjacent to Mission San Luis Obispo de Tolosa (CA-SLO-64/H). The City's Archaeological Resource Preservation Program Guidelines (ARPPG) define archaeologically sensitive areas as those locations inside or within 200 feet of the boundaries of a known archaeological site; properties within 200 feet of the top of banks of major creeks; and areas inside a designated Historical District as shown on archaeological sensitivity maps on file at the Community Development Department (City of San Luis Obispo 2009).

Rincon understands a categorical exemption was conducted for the project and there were Conditions of Approval for the building permit. The current project is located in the City of San Luis Obispo in close proximity to the Mission San Luis Obispo de Tolosa and approximately 11 meters north of the San Luis Obispo Creek. The presence of recorded archaeological resources and proximity of historical buildings increases the likelihood of encountering historic-period archaeological deposits within the project site. The presence of subsurface deposits is also suspected according to recent studies performed by Applied Earthworks (2020). Given the project is within areas determined to be sensitive for archaeological resources the CoAs is requiring archaeological monitoring during construction.

CA-SLO-2341H

Sie CA-SLO-2341H represents the Mission Plaza and the Historic Downtown District. Both of these historic built environments are located in and/or near a sensitive archaeological (prehistoric and historic) resources area. The area consists of multiple subsurface Mission and historic-period refuse/trash pits. Examinations of these pits have identified various types and kinds of colored and uncolored glass objects (intact and fragments), cooking utensils, porcelain (fragments), ceramic roofing titles (intact and fragments), and wire nails. The Mission Plaza and the Historic Downtown District are on the City of San Luis Obispo Master List of Historic Resources and is considered a historical resource under the California Environmental Quality Act (CEQA). Given the sensitivity of the area, past work in proximity to CA-SLO-2341H has required monitoring. Most recently, Applied Earthworks, Inc. completed an Archaeological Monitoring Plan for the project in April 2020 (Wathen and Long 2020). The plan identified one historic-period archaeological resource (CA-SLO-2341H) mapped within the project site.

San Luis Obispo Downtown Historic District

In addition to CA-SLO-2341H, the Applied Earthworks plan further identified that the project site lies within the locally designated San Luis Obispo Downtown Historic District, which includes many of

the City's most important historic buildings with a variety of architectural styles (Wathen and Long 2020). Within the Historic District are Mission San Luis Obispo and Murray Adobe. The Murry Adobe, erected by Walter Murray in 1850, was used to store the Tribune newspaper's printing press. The Murray Adobe is situated roughly 30 meters north of the planned new restrooms. Despite undergoing multiple alterations since its construction, the adobe now represents only a fraction of its original structure. Nevertheless, it has undergone restoration efforts to return it to its initial design (Wathen and Long 2020). The Murray Adobe is on the City of San Luis Obispo Master List of Historic Resources and is considered a historical resource under the California Environmental Quality Act (CEQA).

CA-SLO-64/H

Resource CA-SLO-64/H encompasses a significant historical area, including the Mission San Luis Obispo de Tolosa and associated archaeological deposits. This historic resource encapsulates remnants and features linked to the mission itself, as well as historical traces of Native American and Chinese occupations. Additionally, it includes deposits from the Victorian era that are spread across a considerable area along Higuera, Monterey, and Palm streets. This designation highlights the rich and diverse historical layers present in the vicinity (Wathen and Long 2020).

2 Monitoring Procedures

2.1 Archaeological Construction Monitoring Requirements

In accordance with CoA-3, archaeological monitoring is required for all project-related ground disturbance. Archaeological monitoring efforts shall be conducted under the direction of a City-qualified archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology (National Park Service [NPS] 1983; hereafter, Qualified Archaeologist). The monitoring methods provided in this plan are designed to comply not only with CoA-3, but also remain consistent with the City's ARPPG-4.60-1, 4.60-2, and 4.60-3 (City of San Luis Obispo 2009).

Archeological Monitoring Duties

An archaeological monitor shall be onsite during project-related earthmoving activities. Earthmoving activities include, but are not limited to, vegetation removal, grading, boring, excavation, trenching, and all other excavation activities. During monitoring, the monitor(s) shall examine the work areas for the presence of prehistoric artifacts (e.g., chipped stone tools and production debris, stone milling tools, ceramics), historic-period debris (e.g., metal, glass, housewares, ceramics, construction materials), and/or soil discoloration that might indicate an archaeological deposit or feature, as specified in ARPPG-4.60-1, 4.60-2, and 4.60-3 (City of San Luis Obispo 2009).

Daily Archaeological Monitoring Log

The archaeological monitor shall maintain a daily log documenting ground disturbing activity, work locations, description and provenience of any archaeological discoveries (if any), and any necessary action items for monitoring. The monitoring forms shall be submitted to the City as an attachment to the archaeological construction monitoring report

Archaeological Construction Monitoring Report

The qualified archaeologist will prepare an Archaeological Construction Monitoring Report (ACMR) that will outline the methods and results of the archaeological construction monitoring effort. The report will include maps, photographs and will include the daily monitoring logs completed by the construction archaeological monitor (City of San Luis Obispo 2009).

Unanticipated Discovery of Cultural Resources

In the event of anticipated discovery of cultural (prehistoric or historic) resources the archaeological monitor retains the authority to temporarily halt and redirect work until the resource(s) have been evaluated and the area cleared for construction activities to recommence**.** If the archaeological resource is prehistoric in nature, a local Native American group will be contacted and given the opportunity consult with the City regarding the find and provide recommendations. A Native American monitor will be retained for the remainder of earth disturbing activities should a

prehistoric resource be found during construction (City of San Luis Obispo 2009). Recovery protocols in the case of a find are discussed in greater detail in Section 3 below.

2.1.5 Duration of Archaeological Monitoring

Monitoring shall continue until the Qualified Archaeologist, in coordination with the City (and Native American monitor if present), has determined that the monitoring may be reduced or eliminated. In accordance with CoA-3 and ARPPG-3, when/if culturally sterile soils are encountered during monitoring, the Qualified Archaeologist will provide a written recommendation (via email or other method acceptable to the City) to reduce or eliminate the monitoring effort. Should the City accept the recommendation, the reduction or elimination will commence immediately upon approval (City of San Luis Obispo 2009).

3 Archaeological Resources Discovery Plan

The following outlines the procedures to be followed in the inadvertent discovery of cultural resources, including human remains.

3.1 Discovery of Archaeological Resources

In accordance of CoA-3 and ARPPG, the procedure for appropriately evaluating unanticipated resources encountered during construction will include, but not be limited to, the following:

For the discovery of previously unknown archaeological (prehistoric or historic) resources: The archaeological monitor will divert construction activity in the immediate vicinity of the find by signaling to construction staff and notifying the designated construction foreman. The archaeological monitor will report the discovery to the qualified archaeologist and the City's construction inspector. The "immediate vicinity" will vary depending upon specific circumstances. If the archaeological resource is prehistoric in nature, a local Native American group will be contacted to consult about the find, and a Native American monitor will be retained for the remainder of earth disturbing activities (City of San Luis Obispo 2009).

Upon completion of the above notification, the archaeological monitor will determine the nature and extent of the archaeological remains and make a preliminary assessment of their integrity and potential importance. If the archaeological monitor determines that the discovery is not cultural, or is a single isolated artifact, the monitor will immediately notify the qualified archaeologist, the City, and construction superintendent that activities may resume as soon as the archaeological item(s) has been properly photographed and recorded (City of San Luis Obispo 2009).

If potentially significant cultural features, artifact concentrations, or intact deposits are discovered, the archaeological monitor will divert construction activities away from the find and report the discovery to the qualified archaeologist, the City, and the construction superintendent, so that appropriate notifications to the City can be issued (City of San Luis Obispo 2009).

A temporary Construction Exclusion Zone (CEZ), consisting of lath and flagging tape, will be erected around the discovery. A radius of 50 feet may be established so that the resource may be evaluated. However, the size of the CEZ may be reduced or enlarged as the significance and extent of the find is determined and treatment measures are implemented, and for safety (City of San Luis Obispo 2009).

A minimum 50-foot radius shall also be established for any remains that are suspected of being human (see Section 3.2 for further direction related to the discovery of human remains). Isolated artifacts shall be marked by an orange cone or flagging with no additional radius. The CEZ will not be removed until the potentially significant cultural resource has been evaluated to assess whether it is considered a "historical resource," pursuant to the California Environmental Quality Act (CCR, § 15064.5[a]). To minimize construction delays, if a potentially significant cultural resource is discovered during monitoring, the qualified archaeologist will immediately contact the City to formulate a plan for further treatment. If necessary, the evaluation may require archaeological testing for California Register of Historical Resources (CRHR) eligibility. If the discovery proves to be eligible for the CRHR and cannot be avoided by the modified project, additional work, such as data

recovery excavation, may be warranted to mitigate any significant impacts to historical resources (City of San Luis Obispo 2009).

Archaeological (prehistoric or historic) resources identified within the site shall be recorded according to current archaeological standards (California Office of Historic Preservation 1990) and in compliance with City Guidelines (City of San Luis Obispo 2009). This shall include the preparation of California Department of Parks and Recreation (DPR) Series 523 forms.

Pertinent information concerning the resource(s) shall be recorded, including the site type, components, size, and provenience. Upon completion, the Series 523 forms shall be submitted to the California Historical Resources Information System's Central Coast Information Center, located at the Santa Barbra Museum of Natural History for primary number and trinomial designation. Final copies of the Series 523 forms shall be included in the final monitoring report. In addition to the Series 523 forms, a final compliance report shall be prepared as presented in Section 4.1 below. If the report discusses archaeological resources, it will be considered confidential (City of San Luis Obispo 2009).

3.2 Discovery of Human Remains

There is a possibility that the project's construction-related activities may encounter human remains. Therefore, in accordance with CoA-3 and 4.40.3.2, if the project's construction-related activities find potential human bone or remains, ground-disturbing activities in the area of the discovery shall ***immediately*** be halted and redirected while a temporary CEZ surrounding the site of discovery is established to allow for further examination and treatment of the find (City of San Luis Obispo 2009). The qualified archaeologist shall also ***immediately*** notify the City and the San Luis Obispo County Coroner's Office by telephone, pursuant to Health and Safety Code 7050.5. By law, the Coroner will determine within 48 hours of being notified if the remains are subject to his or her authority. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of being granted access and provide recommendations for the treatment of any human remains and artifacts associated with Native American burials.

4 Reporting of Monitoring Results and Curation Finds

4.1 Reporting of Archaeological Monitoring Results

At the conclusion of the monitoring effort, the Archaeological Monitoring Plan (AMP) will be prepared under the direction of the qualified archaeologist. The monitoring report will outline the monitoring methods employed, describe the construction activity and duration, and present the results of the monitoring. The level of effort to complete a monitoring report is dependent on the number of resources recovered during monitoring activities. Should the monitoring effort be negative for the identification of cultural resources, a negative letter report shall be prepared. The letter report shall include, at a minimum, the dates of monitoring, activities conducted, personnel, and field logs (City of San Luis Obispo 2009).

If archaeological materials are identified, a comprehensive technical report will be required to describe and interpret findings and data. The technical report shall be prepared in accordance with the Archaeological Resources Management Reports (ARMR): Recommended Contents and Format and City Guidelines (California Office of Historic Preservation 1990 and City of San Luis Obispo 2009). If required, the ARMR-format report shall include a complete description of resources identified during monitoring, treatment of those resources, California Register for Historic Resources (CHHR) eligibility recommendations, site records, and site maps. If the report discusses archaeological resources, it will be considered confidential (City of San Luis Obispo 2009).

The final version of the monitoring report shall be submitted to the City and the Central Coast Information Center of the California Historical Resources Information Center.

4.2 Curation of Archaeological Finds

Recovered archaeological finds not associated with burials will be temporarily stored by the qualified archaeologist at a secured off-site laboratory, until either an appropriate on-site reburial location not subject to future ground disturbance or repository is agreed upon by the City, other interested Native American groups, and/or MLD.

If the qualified archaeologist, in consultation with the Native American representative (if applicable), and the City, is unable to bury newly discovered isolated artifacts within the project boundaries, the qualified archaeologist will secure a written agreement with a recognized museum repository or comparable institution that meets the State of California Guidelines for the Curation of Archaeological Collections (National Park Service 1993) such as the Repository for Archaeological and Ethnographic Collections at the University of California, Santa Barbara, or San Luis Obispo County Archaeological Society (SLOCAS) Collections regarding the final disposition, permanent storage, and maintenance of any archaeological resources discovered during archaeological monitoring and determined not to be ceremonial and/or cultural artifacts.

Permanent treatment of human remains and associated funerary items shall be determined by the City in consultation with the MLD (City of San Luis Obispo 2009).

5 References

California Office of Historic Preservation

1990 Archaeological Resource Management Reports (ARMR) Recommended Contents and Format. https://ohp.parks.ca.gov/pages/1069/files/armr-remediated.pdf , accessed July 6, 2023.

City of San Luis Obispo

2022 City of San Luis Obispo Public Works Department Community Development: Conditions of Approval ARCH-0052-2022 (989 Chorro) for the Mission Plaza Concept Plan (Phase I) - Restroom and Café. On file at City Hall. On file at City Hall.

City of San Luis Obispo

2009 Archaeological Resource Preservation Program Guidelines. https://www.slocity.org/home/showpublisheddocument/4140/635497649652000000, accessed July 6, 2023.

National Park Service

1983 Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. Washington, DC. https://www.nps.gov/history/local-law/arch_stnds_0.htm, accessed April 1, 2022.

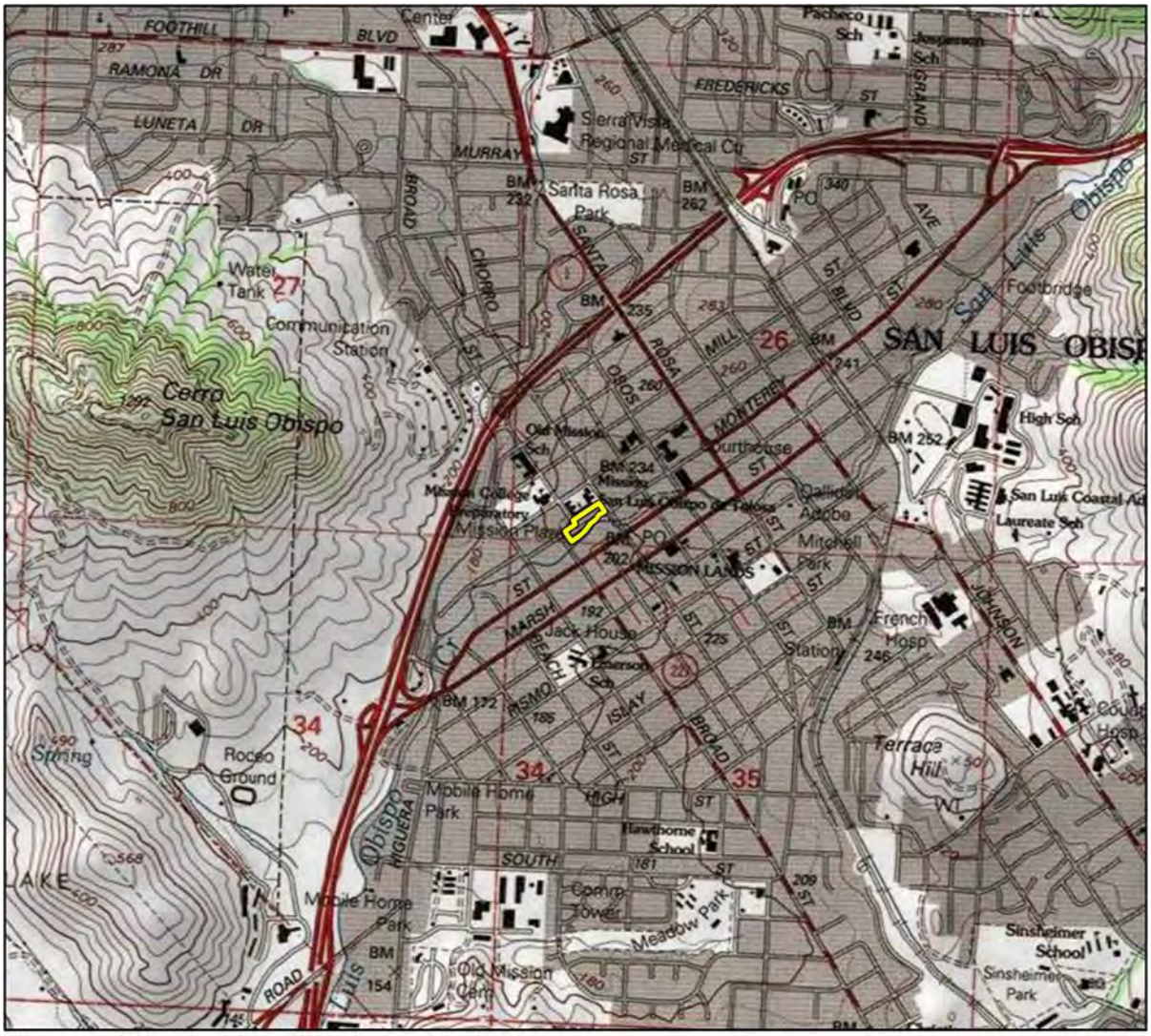
Wathen and Long

2020 Applied Earth Works, Inc.: Mission Plaza Archaeological Monitoring Plan City of San Luis Obispo, California.

Attachment 1

Figures

Figure 1 Project Topographic and Vicinity Map



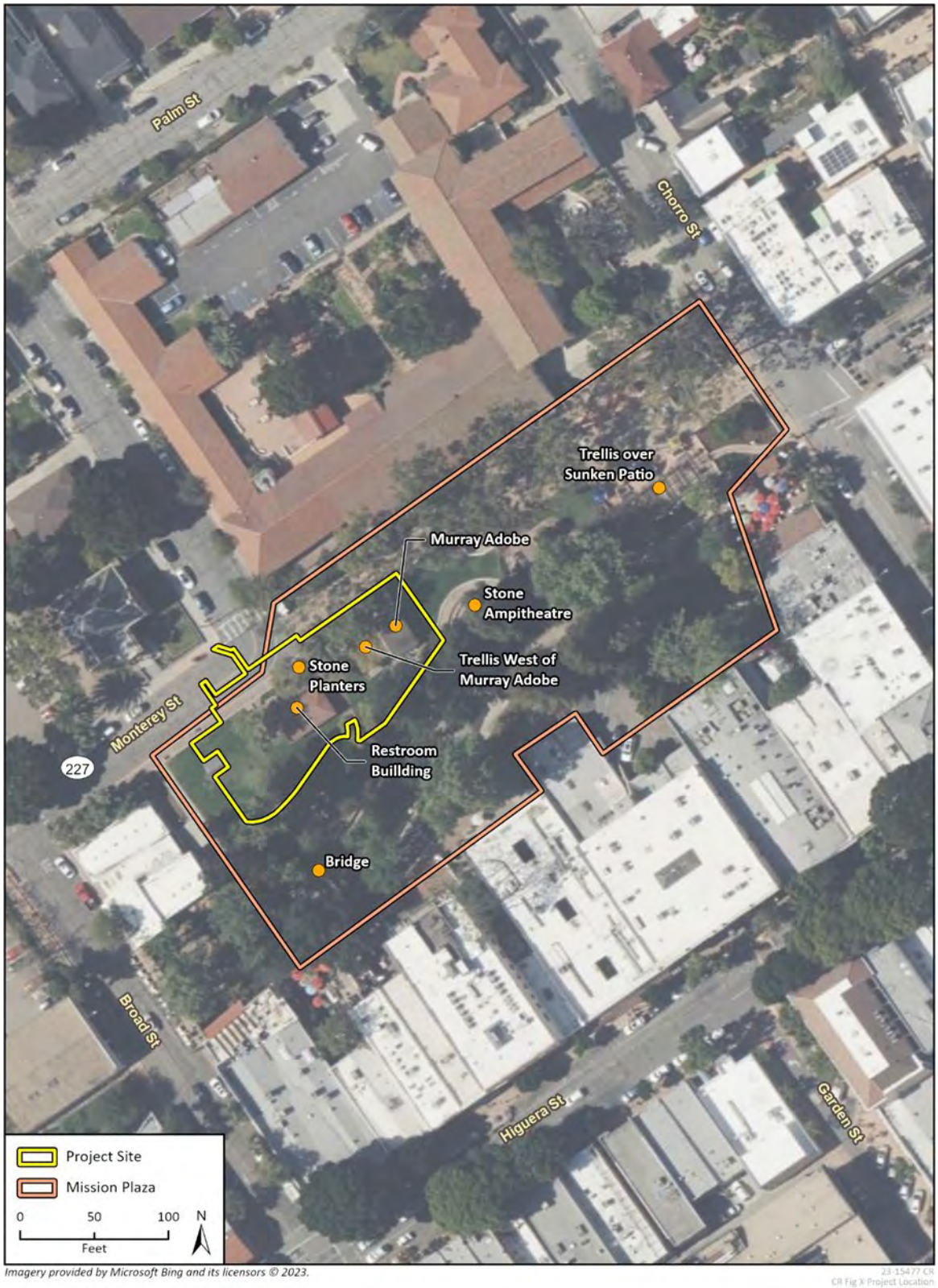
Basemap provided by National Geographic Society, Esri and their licensors © 2023. San Luis Obispo Quadrangle. T30S R12E S26, 35. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

Project Location

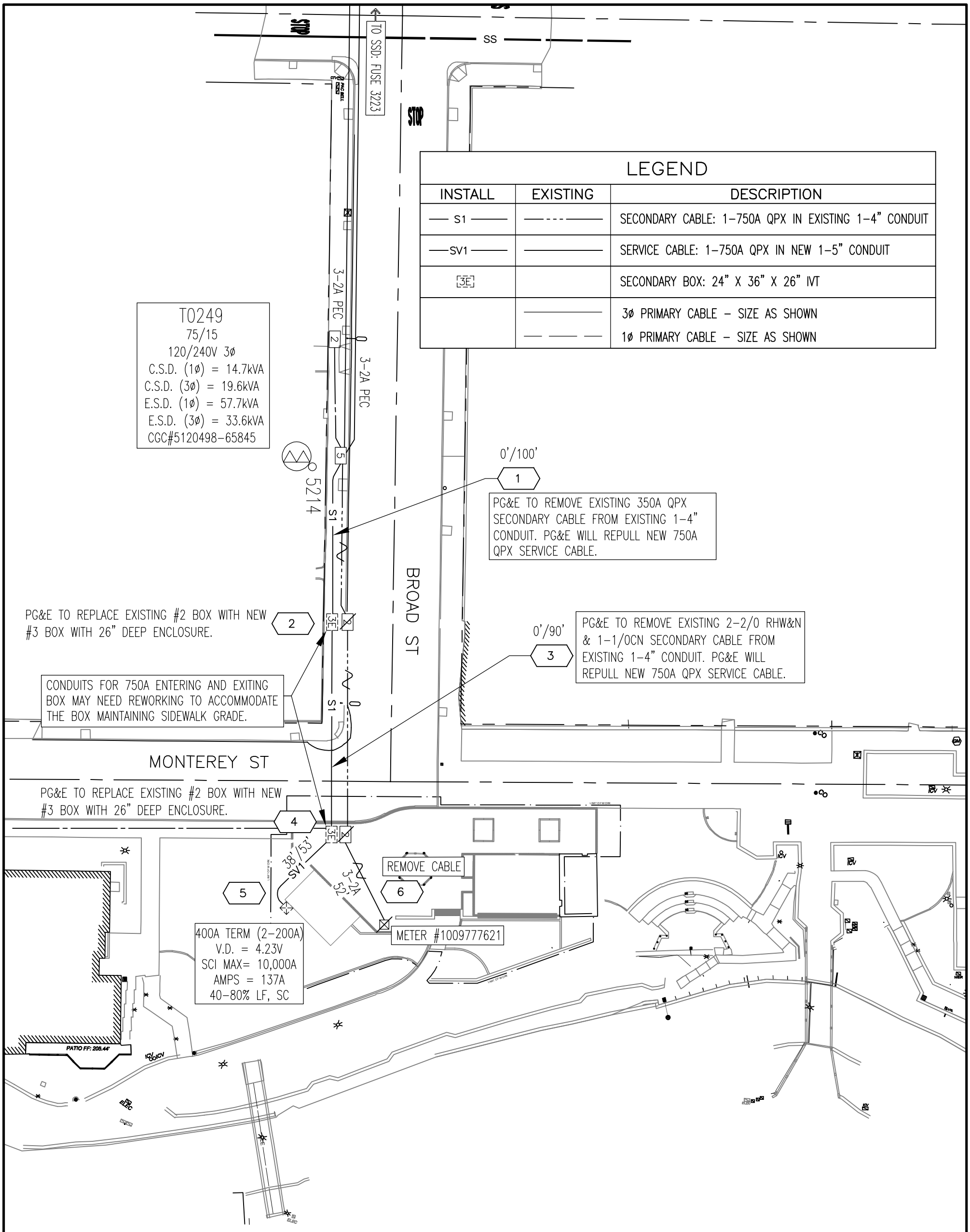
0 1,000 2,000 Feet

N

Figure 2 Project Site Within the Mission Plaza



APPENDIX F – PG&E HANDOUT PACKAGE



---WORK AGENT RESPONSIBILITIES---

PG&E TO INSTALL ALL ELECTRIC FACILITIES
APPLICANT TO TRENCH & INSTALL ALL CONDUIT & SUBSTRUCTURES

PRIMARY VOLTAGE: 12 kV	VOLTAGE AREA: 2	CONSTRUCTION SKETCH 989 CHORRO STREET SAN LUIS OBISPO	EST: MARCUS OWEN 559-254-3043
LATITUDE: 35.280144	LONGITUDE: -120.66486		ADE: MICHAEL STEWART 559-207-4837
SOURCE SIDE DEVICE: FUSE 3223			SUPV: HENRY DIAZ
SUB & CIRCUIT: GOLDTREE 1108			REP: JUSTIN MCDONALD 805-546-1271
DSGN SAG: N/A	RAPTOR ZONE: YES		PLNR: N/A -
LOADING AREA: LIGHT	ARRESTER DIST: 2	811 Know what's below. Call before you dig. / ENVIRONMENTAL ISSUES	NOTIF: 124816031 JPA#: N/A
CORROSION AREA: MODERATE	INSULATION DIST: A		SCALE: 1"=40' DATE: 5/19/2023
EXEMPT EQUIP.INST.: NO	FIRE AREA: LRA-TIER 1	GAS CONFLICT: IN PROXIMITY NEAR LOC:	PM: 35415945 REV. 0

APPENDIX G – ASBESTOS TESTING REPORT

WEST COAST SAFETY CONSULTANTS

June 29, 2023

Nathan Garcia Nava
City of San Luis Obispo
919 Palm Street
San Luis Obispo, CA

RE: Asbestos Building Inspection – 751 Palm Street, San Luis Obispo, California

INTRODUCTION

This report presents the findings of West Coast Safety Consultants inspection for asbestos containing building materials at the Mission Plaza Restroom located at 751 Palm Street, San Luis Obispo, California on June 23, 2023. The 400 square foot building is constructed of concrete block and rests on a concrete slab foundation. All accessible areas were visibly inspected and samples of suspect material were obtained and analyzed.

Our survey involved sampling and analyzing suspect materials to test for the presence of asbestos. A detailed description of the work is outlined below.

1. Inspected all accessible areas of the building for Category I Non-friable, Category II Non-friable, and other Regulated Asbestos Containing Materials. Samples were collected recording:

    a. Sample location
    b. Sample description
    c. Friability
    d. Condition of the material
    e. Potential for disturbance

2. Submitted samples to an EPA accredited laboratory which will provide a report containing the following:

    a. West Coast Safety Consultants sample identification number
    b. Laboratory sample identification number
    c. Analytical technique
    d. Quality control procedures
    e. Type and percentage of asbestos in each material

3. Analyzed the sample results and generated this report which includes:

   a. Definitions
   b. Executive Summary
   c. Findings
   d. Conclusions and Recommendations
   e. Sample Result Summary (Appendix A)
   f. Sample Location Diagram (Appendix B)
   g. Laboratory Report (Appendix C)
   h. Inspectors Credentials (Appendix D)

DEFINITIONS

Asbestos
Types of asbestos include chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite and any of these minerals that have been chemically treated and/or altered.

Asbestos Containing Material (ACM)
Any material containing more than one percent asbestos.

Category I Non-friable ACM
Asbestos containing packings, gaskets, resilient floor coverings, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM).

Category II Non-friable ACM
Any non-friable material, excluding Category I Non-friable ACM, containing more than 1% asbestos as determined using PLM.

Friable ACM
Any material containing more than 1% asbestos as determined using PLM that when dry can be crumbled, pulverized, or reduced to powder by hand pressure.

NESHAPS
The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

Regulated Asbestos Containing Material (RACM)
Any material containing more than 1% asbestos which is:

   a. Friable or;

   b. Category I Non-friable ACM that has become friable or;

   c. Category I Non-friable ACM that will be or has been subjected to sanding, grinding, cutting, abrading or;

   d. Category II ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to a powder by the forces expected to act on the material in the course of demolition.

EXECUTIVE SUMMARY

MATERIALS WHICH CONTAIN ASBESTOS:

No asbestos containing materials were identified.

SUSPECT MATERIALS WHICH NO ASBESTOS WAS DETECTED:

Plaster located on the interior walls was sampled and no asbestos was detected in any of the samples.

Cementitious Coating located on the exterior walls was sampled and no asbestos was detected in any of the samples.

Concrete Slab was sampled and no asbestos was detected.

Tar/Felt located on the roof (under tile) was sampled and no asbestos was detected.

FINDINGS

West Coast Safety Consultants collected samples of each suspect asbestos containing building material (ACBM) encountered at the specific site location. The Environmental Protection Agency (EPA) sampling protocol was utilized which requires multiple samples of suspect asbestos containing materials which are applied by spraying or troweling. A total of six samples were submitted to SGS Forensic Laboratories, an EPA accredited laboratory for analytical testing. Laboratory results are found in appendix C of this report. The samples were analyzed for the presence of asbestos by Polarized Light Microscopy (PLM) with dispersion staining in accordance with the EPA Method 600/R-93-116, Visual Area Estimation.

Of the six samples that were analyzed for asbestos, none were found to contain asbestos. No other asbestos containing materials were identified.

CONCLUSIONS AND RECOMMENDATIONS

No asbestos containing materials were identified on the inspection. If additional suspect materials are discovered during demolition or renovation activities, the material should be assumed to contain asbestos until sampling proves otherwise.

The San Luis Obispo County Air Pollution Control District is delegated authority to implement the asbestos NESHAP regulation in San Luis Obispo County. This regulation requires specific actions by the Owner or Operator of applicable projects. Before you begin your project and for further information, please visit their web site at: https://www.slocleanair.org/rules-regulations/asbestos.php or call the Engineering and Compliance Division at (805) 781-5912.

These conclusions and recommendations are based on the requirements set forth in 40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAP), and Title 8, Chapter 4, Paragraph 1529, the Asbestos Standard of the California Occupational Safety and Health Administration.

CLOSURE

The findings and conclusions rendered in this report are opinions based on the scope of work authorized by the client and laboratory analysis of building material samples collected during this inspection. This report does not reflect variations which may exist between sampling points. These variations cannot be anticipated, nor could they be entirely accounted for, in spite of exhaustive additional testing. Our work has been performed in accordance with generally accepted practices in the field of asbestos consultation. No other warranty, either expressed or implied is made.

Although every effort is made to identify all the asbestos containing materials in a building, it is possible for asbestos containing materials which are located under sub-floors, behind walls or otherwise hidden from view to go undetected until demolition or renovation activities uncover the material. If additional suspect materials are discovered, West Coast Safety Consultants will collect samples and provide a report for no additional cost other than the laboratory fee for sample analysis.

Enclosed with this report is a sample result summary, sample location diagram, a laboratory report from SGS Forensic Laboratories and a copy of my asbestos certificate. I appreciate this opportunity to be of service. Should you have any questions or comments regarding this report, please contact this office at your convenience.

West Coast Safety Consultants,

Michael Mc Guire
Certified Asbestos Consultant (#92-0534)

APPENDIX A

ASBESTOS SAMPLE RESULT SUMMARY

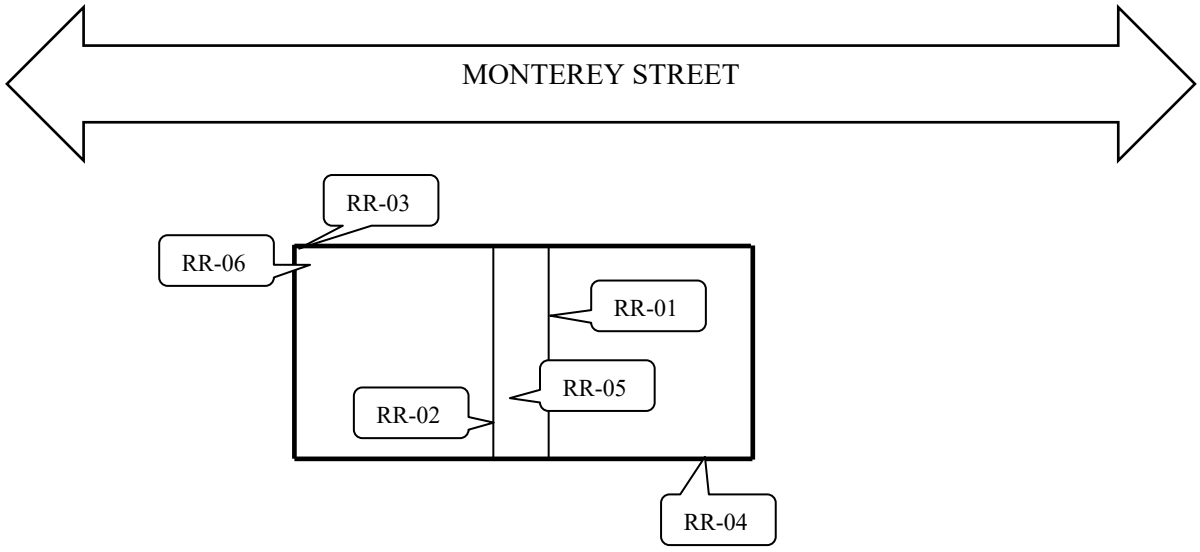
Sample #	Material	Location	Asbestos Content
RR-01	Plaster	Woman's Restroom Wall	None Detected
RR-02	Plaster	Men's Restroom Wall	None Detected
RR-03	Cementitious Coating	Exterior Wall	None Detected
RR-04	Cementitious Coating	Exterior Wall	None Detected
RR-05	Concrete Slab	Utility Room	None Detected
RR-06	Tar/Felt	Roof (under tile)	None Detected

APPENDIX B

SAMPLE LOCATION DIAGRAM

751 Palm Street

San Luis Obispo, California



APPENDIX C

LABORATORY REPORTS

Forensic Analytical Laboratories, Inc.

Analysis Request Form (COC)

Client Name & Address:
WEST COAST SAFETY CONSULTANTS
(ACCT # 5318)
4581 WAVERTREE
SAN LUIS OBISPO, CA 93405

PO / Job#:

Date: 6/23/23

Turn Around Time: Same Day / (1Day) / 2Day / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

☒ PLM: ☒ Standard / ☐ Point Count 400 - 1000 / ☐ CARB 435

Contact: MICHAEL MCGUIRE

Phone: (805) 748-8832 Fax:

E-mail: SLOSAFETYMAN@YAHOO.COM

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual(+/-) / ☐ D5755(str/area) / ☐ D5756(str/mass)

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

Site: MISSION PLAZA RESTROOM

Site Location: 751 PALM ST, SAN LUIS OBISPO

☐ Metals Analysis: Method:
Matrix:
Analytes:

Comments: NATHAN GARCIA NAVA

Report Via: ☐ Fax ☒ E-Mail ☐ Verbal

Sample ID	Date / Time	Sample Location / Description		FOR AIR SAMPLES ONLY Type	Time On/Off	Avg. LPM	Total Time	Sample Area / Air Volume
RR-01	6/23/23	INTERIOR WALL	PLASTER	A P C				
RR-02		"	"	A P C				
RR-03		EXTERIOR WALL	COATING	A P C				
RR-04		"	"	A P C				
RR-05		UTILITY ROOM	CONCRETE SLAB	A P C				
RR-06		ROOF	FELT	A P C				
				A P C				
				A P C				
				A P C				
				A P C				

Sampled By: MICHAEL MCGUIRE M.M.M. Date: 6/23/23 Time: 10:00 AM

Shipped Via: ☒ Fed Ex ☐ DHL ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished By: MICHAEL MCGUIRE	Relinquished By:	Relinquished By:
Date / Time: 6/23/23 @ 1:50 PM	Date / Time:	Date / Time:
Received By: FW5633	Received By:	Received By:
Date / Time: 1130	Date / Time:	Date / Time:
Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

RECEIVED JUN 26 2023

San Francisco Office: 3777 Depot Road, Suite 409, Hayward, California 94545-2761 / Ph: (510)887-8828 * (800)827-3274 / Fax: (510)887-4218
Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, California 90221 / Ph: (310)763-2374 * (888)813-9417 / Fax: (310)763-4450
Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, Nevada 89119 / Ph: (702)784-0040 / Fax: (702)784-0030

SGS FORENSIC LABORATORIES

Final Report

Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)
NVLAP Lab Code: 101459-0

West Coast Safety Consultants
Michael McGuire

4581 Wavertree
San Luis Obispo, CA 93401

Client ID: 5318
Report Number: B348986
Date Received: 06/26/23
Date Analyzed: 06/26/23
Date Printed: 06/27/23
First Reported: 06/27/23

Job ID/Site: Mission Plaza Restroom - 751 Palm St San Luis Obispo

Date(s) Collected:

SGSFL Job ID: 5318
Total Samples Submitted: 6
Total Samples Analyzed: 6

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
RR-01	12674116						
Layer: Grey Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
RR-02	12674117						
Layer: Grey Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
RR-03	12674118						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
RR-04	12674119						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
RR-05	12674120						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
RR-06	12674121						
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (65 %)		**Asbestos (ND)**					

3777 Depot Road, Suite 409, Hayward, CA 94545 | Phone: 510.887.8828 / 800.827.3274 Fax: 510.887.4218 | https://falaboratories.sgs.com

Report Number: B348986

Client Name: West Coast Safety Consultants **Date Printed:** 06/27/23

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer

Maria Cosper, Laboratory Supervisor, Hayward Laboratory

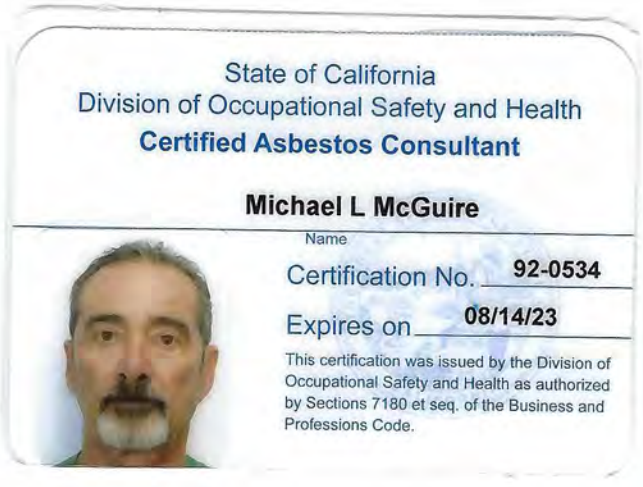
Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

Analytical results and reports are generated by SGS Forensic Laboratories (SGSFL) at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by SGSFL to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by SGSFL. The client is solely responsible for the use and interpretation of test results and reports requested from SGSFL. This report must not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government. SGSFL is not able to assess the degree of hazard resulting from materials analyzed. SGS Forensic Laboratories reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified. All samples were received in acceptable condition unless otherwise noted.

3777 Depot Road, Suite 409, Hayward, CA 94545 | Phone: 510.887.8828 / 800.827.3274 Fax: 510.887.4218 | https://falaboratories.sgs.com

APPENDIX D

ASBESTOS CERTIFICATION



State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant

Michael L McGuire
Name

Certification No. **92-0534**

Expires on **08/14/23**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

APPENDIX H – LEAD TESTING REPORT

WEST COAST
SAFETY
CONSULTANTS

June 29, 2023

Nathan Garcia Nava
City of San Luis Obispo
919 Palm Street
San Luis Obispo, CA

RE: Lead Building Inspection – 751 Palm Street, San Luis Obispo, California

INTRODUCTION

This report presents the findings of West Coast Safety Consultants inspection for lead containing materials at the Mission Plaza Restroom located at 751 Palm Street, San Luis Obispo, California on June 23, 2023. The inspection was conducted for CAL-OSHA and EPA compliance in conjunction with the renovation/demolition of the building. All accessible areas were visibly inspected and representative samples of suspect materials were obtained and analyzed. Samples were not collected from every painted surface, however samples were obtained which represent the majority of the painted surfaces at the specific site location.

LEAD SAMPLE ANALYSIS

The survey involved a visual inspection of the building and sample collection from painted surfaces and ceramic tile. The samples were analyzed by SGS Forensic Laboratories using Flame Atomic Absorption in accordance with the Environmental Protection Agency (EPA) Method (3050B/7420) to identify lead content. SGS Forensic Laboratories is a laboratory which is certified to analyze for lead. They are accredited by the American Industrial Hygiene Association, the National Institute of Standards and Technology, and the California Department of Public Health (CDPH). Please note the attached laboratory report.

LEAD FINDINGS

West Coast Safety Consultants visual inspection identified that the painted surfaces were intact and in good condition. A total of seven samples were collected and analyzed for lead content. The results in parts per million (ppm) are as follows:

Sample#	Location	Description	Lead Content
RR-101	Interior Block Wall	Beige Paint	None Detected
RR-102	Exterior Block Wall	Beige Paint	None Detected
RR-103	Exterior Block Wall	Beige Paint	None Detected
RR-104	Exterior/Interior Window Frame	Brown Paint	None Detected
RR-105	Exterior/Interior Door/Door Frame	Brown Paint	None Detected
RR-106	Exterior Beam/Eave/Fascia	Brown Paint	480 ppm
RR-107	Interior Wall	Ceramic Tile	None Detected

As a comparison, the EPA and CDPH consider a material to be lead based paint when it exceeds .5% or 5,000 ppm. In addition, the Consumer Product Safety Commission (CPSC) set a limit of .009% or 90 ppm of lead in paint for children's toys and CAL-OSHA regulates workers who disturb lead coated surfaces at any detectable lead level.

SUMMARY

No lead was detected in the samples collected from the following building components:

1. Interior/Exterior Painted Walls
2. Interior Ceramic Tiled Walls
3. Interior/Exterior Painted Window Frames
4. Interior/Exterior Painted Door/Door Frame

A low level of lead (480 ppm) was detected in the sample collected from the painted exterior beams/eaves/fascia.

West Coast Safety Consultants recommends any contractor conducting work which will disturb painted surfaces or ceramic tile receive notification of the lead content and the condition of the lead containing surfaces prior to demolition, renovation, or any activity which would disturb the material. All work should be conducted in compliance with the CAL-OSHA and EPA regulations.

CLOSURE

The findings and conclusions rendered in this report are based on the scope of work authorized by the client and laboratory analysis of building material samples collected during this inspection. This report does not reflect variations which may exist between sampling points. These variations cannot be anticipated, nor could they be entirely accounted for even with exhaustive testing. All work has been performed in accordance with generally accepted practices in the field of lead consultation.

The conclusions and recommendations listed in this report are based on the Department of Housing and Urban Development *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*, 40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAP), and Section 1532.1 the Lead Standard of the California Occupational Safety and Health Administration.

I have enclosed the required CDPH Notification of a Lead Inspection, a laboratory report from SGS Forensic Laboratories, a sample location diagram and a copy of my lead credentials. If you have any questions, please contact me at 805-748-8832. Thank you for choosing West Coast Safety Consultants.

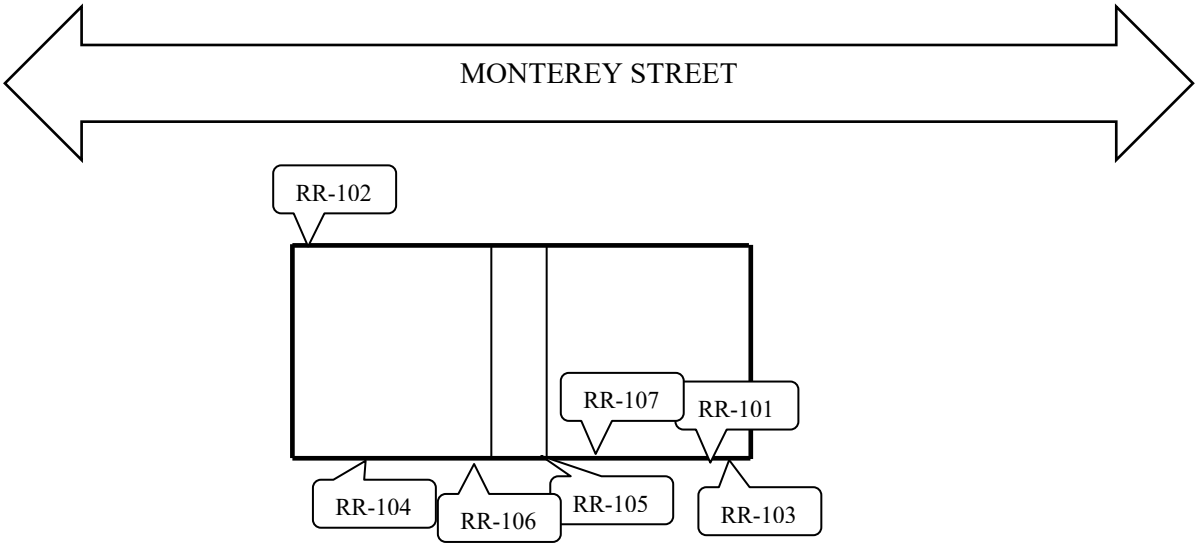
Sincerely,

Michael Mc Guire
CDPH Lead Certification LRC-00002166

SAMPLE LOCATION DIAGRAM

751 Palm Street

San Luis Obispo, California



Forensic Analytical Laboratories, Inc.

Analysis Request Form (COC)

Client Name & Address:
WEST COAST SAFETY CONSULTANTS
(ACCT # 5318)
4581 WAVERTREE
SAN LUIS OBISPO, CA 93405

PO / Job#:

Date: 6/23/23

Turn Around Time: Same Day / 1Day / (2Day) / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

☐ PLM: ☐ Standard / ☐ Point Count 400 - 1000 / ☐ CARB 435

Contact: MICHAEL MCGUIRE

Phone: (805) 748-8832 Fax:

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual(+/-) / ☐ D5755(str/area) / ☐ D5756(str/mass)

E-mail: SLOSAFETYMAN@YAHOO.COM

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

Site:

☒ Metals Analysis: Method:

Matrix: PAINT & CERAMIC TILE

Site Location: 751 PALM ST., SAN LUIS OBISPO

Analytes: LEAD

Comments: NATHAN GARCIA NAVA

Report Via: ☐ Fax ☒ E-Mail ☐ Verbal

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY Type	Time On/Off	Avg. LPM	Total Time	Sample Area / Air Volume
RR-101	6/23/23	INTERIOR WALL / BEIGE PAINT	A P C				
RR-102		EXTERIOR WALL / "	A P C				
RR-103		" / "	A P C				
RR-104		EXTERIOR WINDOW FRAME / BROWN PAINT	A P C				
RR-105		DOOR FRAME / "	A P C				
RR-106		EXTERIOR FASCIA / "	A P C				
RR-107		INTERIOR WALL / CERAMIC TILE	A P C				
			A P C				
			A P C				
			A P C				

Sampled By: MICHAEL MCGUIRE MM Date: 6/23/23 Time: 10:30 AM

Shipped Via: ☒ Fed Ex ☐ DHL ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished By: MICHAEL MCGUIRE	Relinquished By:	Relinquished By:
Date / Time: 6/23/23 @ 2:00PM	Date / Time:	Date / Time:
Received By: RECEIVED JUN 26 2023 FAC-5633	Received By:	Received By:
Date / Time: 1130	Date / Time:	Date / Time:
Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

San Francisco Office: 3777 Depot Road, Suite 409, Hayward, California 94545-2761 / Ph: (510)887-8828 * (800)827-3274 / Fax: (510)887-4218
Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, California 90221 / Ph: (310)763-2374 * (888)813-9417 / Fax: (310)763-4450
Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, Nevada 89119 / Ph: (702)784-0040 / Fax: (702)784-0030

SGS FORENSIC LABORATORIES

Metals Analysis of Paints

(AIHA-LAP, LLC Accreditation, Lab ID #101762)

West Coast Safety Consultants
Michael McGuire

4581 Wavertree
San Luis Obispo, CA 93401

Client ID: 5318
Report Number: M251771
Date Received: 06/26/23
Date Analyzed: 06/28/23
Date Printed: 06/28/23
First Reported: 06/28/23

Job ID / Site: 751 Palm St San Luis Obispo
Date(s) Collected:

SGSFL Job ID: 5318
Total Samples Submitted: 6
Total Samples Analyzed: 6

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
RR-101	30923949	Pb	< 0.007	wt%	0.007	EPA 3050B/7000B
RR-102	30923950	Pb	< 0.006	wt%	0.006	EPA 3050B/7000B
RR-103	30923951	Pb	< 0.006	wt%	0.006	EPA 3050B/7000B
RR-104	30923952	Pb	< 0.007	wt%	0.007	EPA 3050B/7000B
RR-105	30923953	Pb	< 0.006	wt%	0.006	EPA 3050B/7000B
RR-106	30923954	Pb	0.048	wt%	0.006	EPA 3050B/7000B

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Kevin Poon

Kevin Poon, Laboratory Supervisor, Hayward Laboratory

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SGS FORENSIC LABORATORIES

Metals Analysis of Bulks - TTLC

(AIHA-LAP, LLC Accreditation, Lab ID #101762)

West Coast Safety Consultants
Michael McGuire

4581 Wavertree
San Luis Obispo, CA 93401

Client ID: 5318
Report Number: M251787
Date Received: 06/26/23
Date Analyzed: 06/28/23
Date Printed: 06/28/23
First Reported: 06/28/23

Job ID / Site: 751 Palm St San Luis Obispo
Date(s) Collected:

SGSFL Job ID: 5318
Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
RR-107	30923955	Pb	< 6	mg/kg	6	EPA 3050B/7000B

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Kevin Poon

Kevin Poon, Laboratory Supervisor, Hayward Laboratory

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Note* Sampling data used in this report was provided by the client as noted on the associated chain of custody form.

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State of California—Health and Human Services Agency

California Department of Public Health

LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead Hazard Evaluation 6/23/23

Section 2 — Type of Lead Hazard Evaluation (Check one box only)

☒ Lead Inspection ☐ Risk assessment ☐ Clearance Inspection ☐ Other (specify) _____

Section 3 — Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)]	City	County	Zip Code
751 PALM ST	SAN LUIS OBISPO	SAN LUIS OBISPO	93401

Construction date (year) of structure	Type of structure		Children living in structure?
UNKNOWN	☐ Multi-unit building	☐ School or daycare	☐ Yes ☒ No
	☐ Single family dwelling	☒ Other RESTROOM	☐ Don't Know

Section 4 — Owner of Structure (if business/agency, list contact person)

Name	Telephone number
CITY OF SAN LUIS OBISPO - NATHAN GARCIA NAVA	805-783-7865

Address [number, street, apartment (if applicable)]	City	State	Zip Code
919 PALM ST	SAN LUIS OBISPO	CA	93401

Section 5 — Results of Lead Hazard Evaluation (check all that apply)

☒ No lead-based paint detected ☐ Intact lead-based paint detected ☐ Deteriorated lead-based paint detected

☐ No lead hazards detected ☐ Lead-contaminated dust found ☐ Lead-contaminated soil found ☐ Other_____

Section 6 — Individual Conducting Lead Hazard Evaluation

Name	Telephone number
MIKE McGUIRE	805-748-8832

Address [number, street, apartment (if applicable)]	City	State	Zip Code
4581 WAVERTREE ST	SAN LUIS OBISPO	CA	93401

CDPH certification number	Signature	Date
LRC-0000216 6	M.M'G	6/29/23

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)

Section 7 — Attachments

A. A foundation diagram or sketch of the structure indicating the specifc locations of each lead hazard or presence of lead-based paint;
B. Each testing method, device, and sampling procedure used;
C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector

Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:

California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804-6403
Fax: (510) 620-5656

CDPH 8552 (6/07)

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
	Lead Inspector/Assessor	LRC-00002166	10/7/2023
	Lead Project Designer	LRC-00002167	10/7/2023
	Lead Project Monitor	LRC-00002165	10/7/2023

Michael McGuire

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD

APPENDIX I – GEOTECHNICAL ENGINEERING REPORT

GEOTECHNICAL ENGINEERING REPORT
MISSION PLAZA RESTROOM AND CAFE
SAN LUIS OBISPO MISSION PLAZA
SAN LUIS OBISPO, CALIFORNIA

October 21, 2022

Prepared for

Mr. Brian Nelson
City of San Luis Obispo Public Works Department

Prepared by

Earth Systems Pacific
4378 Old Santa Fe Road
San Luis Obispo, CA 93401

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4378 Old Santa Fe Road | San Luis Obispo, CA 93401 | Ph: 805.544.3276 | www.earthsystems.com

October 21, 2022

FILE NO.: 305341-001

Mr. Brian Nelson
City of San Luis Obispo Public Works Department
919 Palm Street
San Luis Obispo CA 93401

PROJECT: MISSION PLAZA – RESTROOM AND CAFE
SAN LUIS OBISPO MISSION PLAZA
SAN LUIS OBISPO, CALIFORNIA

SUBJECT: Geotechnical Engineering Report

Dear Mr. Nelson:

This geotechnical engineering report has been prepared for use in the development of plans and specifications for the proposed restroom and café buildings to be located in the San Luis Obispo Mission Plaza (south of the intersection of Monterey Street and Broad Street) in San Luis Obispo, California.

Preliminary geotechnical engineering recommendations for site preparation, grading, utility trenches, foundations, interior slabs-on-grade and exterior pedestrian flatwork, drainage and maintenance, and observation and testing are presented to guide the development of project plans and specifications. One electronic copy and one bound copy have been provided to you. Additional electronic copies have also been distributed to those mentioned below.

We appreciate the opportunity to have provided services for this project and look forward to working with you again in the future. If there are any questions concerning this report, please do not hesitate to contact the undersigned.

Sincerely,

Earth Systems Pacific

REGISTERED PROFESSIONAL ENGINEER
ROBERT W. DOWN
No. 70206
CIVIL
STATE OF CALIFORNIA

Robert Down, PE
Principal Engineer

Aileen Flynn, EIT
Staff Engineer

Doc. No.: 2210-071.SER/pm

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APPENDICES

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APPENDIX B	Laboratory Test Results
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1.0 INTRODUCTION AND SITE SETTING

Based on preliminary project plans provided by RRM design group, the proposed improvement project will consist of the removal of the existing restroom and the construction of a new restroom and café in the San Luis Obispo Mission Plaza. We understand that the café will be approximately 165 square feet and be of wood or steel framed construction. The restroom structure will be approximately 470 square feet and will be of masonry construction. Additional improvements will consist of pedestrian flatwork, underground utilities, and landscaping. There will be no retaining walls, subterranean structures, or infiltration facilities.

We understand the restroom structure will be supported on conventional continuous and spread footings, and the café will be supported on pole foundations. We have estimated dead plus live loads, to be on the order of 2 kips per linear foot and 25 kips for wall and column loads, respectively. Further, the structures will have a relatively short period; and therefore, seismic design criteria using the general ground motion procedure outlined in ASCE 7-16 Sections 11.4.2 through 11.4.5 is provided. Other site improvements will include addition and relocation of underground utilities, exterior pedestrian flatwork, and vehicular pavement.

The site is located in the west portion of the San Luis Obispo Mission Plaza, as shown in Figure 1 – Exploration Location Map in Appendix A. A restroom structure, pedestrian flatwork and several trees currently occupy the project site. The undeveloped portion of the site is covered in grasses. The location of the café structure is relatively flat. The location of the new restroom is relatively flat toward the north then slopes drastically downward toward San Luis Obispo Creek to the south. Grading for the project is expected to include cuts and fills up to 2 feet. The approximate site coordinates from the Google Earth website (Google 2022) are latitude 35.2800 degrees north and longitude 120.66.45 degrees west.

2.0 SCOPE OF SERVICES

The scope of work for this geotechnical engineering investigation included the following: a general site reconnaissance, subsurface exploration, laboratory testing of selected samples, geotechnical evaluation of the data collected, and the preparation of this report.

This report and recommendations are intended to comply with the considerations of Sections 1803.1 through 1803.6, J104.3 and J104.4, as applicable, of the 2019 California Building Code

(CBC) and common geotechnical engineering practice in this area under similar conditions at this time. The test procedures were accomplished in general conformance with the standards noted, as modified by common geotechnical engineering practice in this area under similar conditions at this time.

Preliminary geotechnical engineering recommendations for site preparation, grading, utility trenches, foundations, interior slabs-on-grade and exterior pedestrian flatwork, drainage and maintenance, and observation and testing are presented to guide the development of project plans and specifications. As there may be geotechnical issues yet to be resolved, the geotechnical engineer should be retained to provide consultation as the design progresses, and to review project plans as they near completion to assist in verifying that pertinent geotechnical issues have been addressed and to aid in conformance with the intent of this report.

It is our intent that this report be used exclusively by the client to form the geotechnical basis of the design of the project and in the preparation of plans and specifications. Application beyond this intent is strictly at the user's risk.

This report does not address issues in the domain of contractors such as, but not limited to, site safety, loss of volume due to stripping of the site, shrinkage of soils during compaction, excavatability, dewatering, temporary slope angles, construction means and methods, etc. Analyses of aerial or site geology, or of the soil for corrosivity, radioisotopes, asbestos (either naturally occurring or in man-made products), lead or mold potential, hydrocarbons, or chemical properties is beyond the scope of this report. Any ancillary features such as flag or light poles, temporary access roads, and non-structural fills, or other improvements not addressed herein are not within our scope and are also not addressed.

In the event that there are any changes in the nature, design, or location of improvements, or if any assumptions used in the preparation of this report prove to be incorrect, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed, and the conclusions of this report modified or verified by the geotechnical engineer in writing. The criteria presented in this report are considered preliminary until such time as any peer review or review by any jurisdiction has been completed, conditions have been observed by the geotechnical engineer in the field during construction, and the recommendations have been verified as appropriate, or modified by the geotechnical engineer in writing.

3.0 FIELD INVESTIGATION

Our geotechnical field investigation consisted of two exploratory borings drilled at the site on August 17, 2022 to depths ranging from approximately 11.0 to 11.5 feet below the existing ground surface (bgs). Borings were drilled with a truck-mounted Simco EP 200 drill rig that utilized a four-inch outside diameter solid stem auger with an automatic trip hammer for sampling. The approximate locations of the borings are shown on the Figure 2 - Exploration Location Map in Appendix A.

Soil samples were obtained from the exploratory borings using a 3-inch outside diameter ring-lined barrel sampler D 3550 - 17 (with shoe similar to D 2937 - 17) and Standard Penetration Tests (SPT) were conducted at selected depths within the borings (ASTM D1586 -18). Bulk soil samples were also obtained from the auger cuttings. After sampling was complete, the borings were backfilled with the auger cuttings.

Soils encountered in the current borings were categorized and logged in general accordance with the Unified Soil Classification System and ASTM D 2488-17. Copies of the current boring logs and a boring log legend are included in Appendix A. In reviewing the boring logs and legend, the reader should recognize that the legend is intended as a guideline only, and there are a number of conditions that may influence the soil characteristics as observed during drilling. These include, but are not limited to, the presence of cobbles or boulders, cementation, variations in soil moisture, presence of groundwater, and other factors. Consequently, the logger must exercise judgment in interpreting the subsurface characteristics, possibly resulting in soil and bedrock descriptions that vary somewhat from the legend.

4.0 LABORATORY ANALYSIS

Selected samples from the current borings were tested in our laboratory for bulk density (ASTM D 2937-17, modified for ring liners) and moisture content (ASTM D 2216-16), maximum density and optimum moisture content (ASTM D 1557-12), grain size distribution by sieve analysis (ASTM D 1140-17), and cohesion and angle of shearing resistance (ASTM D 3080-11).

The geotechnical laboratory test results for our investigation are presented in Appendix B.

5.0 GENERAL SUBSURFACE PROFILE

Based upon our investigation, the site is underlain by alluvium. The alluvium consisted of layers of medium dense clayey sands and stiff to very stiff sandy lean clays to maximum depths explored of 14.0 to 16.5 feet bgs. Boring 2 was terminated at 14.0 feet due to refusal on cobbles. There was no subsurface water encountered during the exploration.

Please refer to the Boring Logs in Appendix A for a more detailed description of the subsurface conditions encountered in the subsurface investigations performed by this firm at the site.

6.0 CONCLUSIONS

In our opinion, the site is suitable, from a geotechnical engineering standpoint, for the restroom and café buildings discussed in the "Introduction and Site Setting" section of the report, provided the recommendations contained herein are implemented in the design and construction. In our opinion, the primary geotechnical engineering concerns at the site are the potential for strong seismic shaking and soil expansion potential. Total and differential settlement, soil erosion potential and liquefaction potential are also discussed below.

Strong Seismic Shaking

The site is in a region of high seismic activity with the potential for large seismic events that could generate strong ground shaking. The CBC requires that seismic loads be considered in structural design. A seismic analysis was undertaken to provide seismic acceleration design parameters; the results are presented in the "Foundations" section of this report for use by others in the structural design process.

The 2010 ASCE 7 method with 2013 updates available on the Structural Engineers Associate of California (SEAOC) Seismic Design Map Tool website (SEAOC, 2021) was used for the seismic analysis. The risk category for buildings and structures is assigned by others in accordance with CBC Table 1604.5; however, based on our current understanding of the project, we selected Risk Category II for our analysis. Based upon the subsurface conditions encountered during our subsurface investigation, Site Class "D", "Stiff Soil," was used. A general ground motion seismic analysis was performed, assuming that Exception 2 listed in Section 11.4.8 (ASCE, 2017) will apply to the project. We also provided seismic parameters if the Simplified Lateral Force Analysis Procedure from Section 12.14.8 (ASCE, 2017) will be used in structural design.

Soil Expansion Potential

An expansion index test of the near-surface soils yielded a result of 33. Per Section 1803.5.3 of the 2019 CBC, soils are considered to be non-expansive for expansion index values of 20 or less and expansive for values higher than 20. Using the terminology typically associated with the ASTM test method for expansion, the soils are considered to have "low" expansion potential. Expansive soils tend to swell with increases in soil moisture and shrink as soil moisture decreases; the upper 3 to 5 feet of soil is the zone most affected by these seasonal soil moisture fluctuations. The volume changes that these materials undergo in this cyclical pattern can damage slabs and foundations if precautionary measures are not incorporated into the design and construction procedures. Recommendations for reducing the potential for damage to the proposed improvements, including moisture conditioning the soil, placement of non-expansive fill, and deepening foundations, are provided in the "Preliminary Geotechnical Recommendations" Section of this report.

Potential for Total and Differential Settlement

Settlement (total and differential) can occur when foundations and surface improvements span materials having variable consolidation, moisture, and density characteristics. Such a situation can stress and possibly damage foundations and surface improvements, often resulting in severe cracks and displacement. To reduce this settlement potential, it is necessary for all foundations and surface improvements to bear on material that is as uniform as practicable. A program of overexcavation, moisture conditioning, and compaction of the upper soils in the building and surface improvement areas is recommended to provide more uniform soil moisture and density and appropriate support.

Erosion Potential

The site soils are considered to be erodible. Caution should be exercised to protect the soil from erosion during and following construction.

Liquefaction Settlement

The site is mapped by the City of San Luis Obispo (2014) as being in an area of moderate liquefaction potential. However, due to the lack of subsurface water encountered in our borings and the clay content in the soils encountered, it is our opinion the potential for damage due to liquefaction at the site is very low.

7.0 PRELIMINARY GEOTECHNICAL RECOMMENDATIONS

These recommendations are applicable for the proposed project as described in the "Introduction and Site Setting" section of this report. If other improvements not previously mentioned are included, the geotechnical engineer should be contacted for revised recommendations.

Unless otherwise noted, the following definitions are used in the recommendations presented below. Where terms are not defined, definitions commonly used in the construction industry are intended.

- **Building Slab Area:** The building slab area is defined as the area within and not including the perimeter of the proposed foundations.
- **Flatwork Areas:** The area within the limits of exterior pedestrian flatwork and extending a minimum of 1 foot beyond the perimeter of the proposed improvements.
- **Grading Area –** The entire area to be graded, including building slab, foundation, and flatwork areas.
- **Subgrade:** The elevation of the surface upon which a sand cushion/non-expansive imported material or aggregate base will be placed for flatwork improvements.
- **Existing Grade:** Elevations of the site that existed as of the date of this report.
- **Finish Pad Grade:** The elevation in the building area where earthwork operations are typically considered to be complete. It does not include any sand or gravel that might be placed below slabs in association with vapor protection for the slabs.
- **Scarified:** Thoroughly plowed or ripped in two orthogonal directions to a depth of not less than 8 inches.
- **Moisture Conditioned:** Soil moisture content adjusted to just above optimum moisture content prior to application of compactive effort.
- **Compacted / Recompacted:** Soils placed in level lifts not exceeding 8 inches in loose thickness and compacted to a minimum of 90 percent of maximum dry density, unless specified otherwise. The standard tests used to establish maximum dry density and field density should be ASTM D 1557-12 and ASTM D 6938-17, respectively, or other methods acceptable to the geotechnical engineer and jurisdiction.

Site Preparation

1. The ground surface in the grading area should be prepared for construction by removing existing improvements, vegetation, debris, and other deleterious materials. Any existing utility lines that will not remain in service should be either removed or abandoned. The appropriate method of utility abandonment will depend upon the type and depth of the utility. Recommendations for abandonment during construction can be made by the geotechnical engineer, as necessary.

2. Voids created by the removal of materials or utilities described above and extending below the recommended depth of overexcavation should be called to the attention of the geotechnical engineer. No fill should be placed unless the underlying soil has been observed by the geotechnical engineer.

Grading

1. Following site preparation, soils within the building slab area should be removed to a level plane at a minimum depth of 1 foot below planned bottom-of-slab elevation. The exposed surfaces should then be scarified, moisture conditioned and recompacted.

2. Exterior pedestrian flatwork areas should be excavated to 1 foot below planned subgrade elevation or existing grade, whichever is deeper. The soi surface exposed by overexcavation should be scarified, moisture conditioned and recompacted.

3. Voids created by dislodging cobbles and/or debris during scarification should be backfilled and recompacted, and the dislodged materials should be removed from the work area.

4. Within the building slab area, all soils used as fill should be nonexpansive.

5. Nonexpansive soils are defined as falling into the GP, GW, GM, GC, SM, SC, SP, or SW categories (ASTM D 2487-17) and having an expansion index of 10 or less (ASTM D 4829-21). Imported nonexpansive soils used in the building area should have strength qualities equal to or better than the site soils. All proposed imported fill should be approved by the geotechnical engineer before being transported to the site and periodically during construction. The clean sand layer described in the “Interior Slabs-on-Grade and Exterior Pedestrian Flatwork” Section of this report (if utilized) is considered to be part of the minimum recommended depth of nonexpansive material, not in addition to it.

6. Previously removed site soils may be used as fill beyond the building slab area.

7. All materials used as fill should be cleaned of all debris and any rocks larger than 6 inches in maximum dimension. When fill material includes rocks, the rocks should be placed in a sufficient soil matrix to ensure that voids caused by nesting of the rocks will not occur and that the fill can be properly compacted.

8. If the soils become unstable, or if the recommended compaction cannot be readily achieved, drying the soil to just above optimum moisture content may be necessary. Placement of gravel layers or geotextiles may also be necessary to help stabilize unstable soils. Soils that are disturbed in any manner should be removed, moisture conditioned, and recompacted.

Utility Trenches

1. Unless otherwise recommended, utility trenches adjacent to foundations should not be excavated within the zone of foundation influence, as shown in Typical Detail A in Appendix D.

2. Utilities that must pass beneath a foundation should be placed with properly compacted utility trench backfill and the foundation should be designed to span the trench.

3. A select, noncorrosive, easily compacted sand should be used as bedding and shading immediately around utilities. All trench backfill, within the upper 12 inches of the building areas should be nonexpansive. Site soils or select import may be used as trench backfill within the remaining trench depths.

4. Utility trench backfill should be moisture conditioned and compacted to a minimum of 90 percent of maximum dry density. Trenches located within areas subject to vehicle loading should be compacted to a minimum of 95 percent of maximum dry density within the upper foot of subgrade and all aggregate base.

5. Trench backfill should be placed in level lifts not exceeding 6 inches in loose thickness, moisture conditioned, and compacted to the minimums noted above.

6. Compaction of trench backfill by jetting or flooding is not recommended except under extraordinary circumstances. However, to aid in *encasing* utility conduits, particularly corrugated drain pipes, and multiple, closely spaced conduits in a single trench, jetting or flooding may be useful. Flooding or jetting should only be attempted with extreme caution, and any jetting operation should be subject to review by the geotechnical engineer.

7. The recommendations of this section are minimums only, and may be superseded by the requirements of the architect/engineer, the recommendations of the pipe manufacturers or utility companies, or the requirements of the governing jurisdiction based upon soil corrosivity or other factors.

Foundations

Shallow Foundations

1. Conventional continuous and spread footings bearing in firm, native soils should be utilized to support the restroom structure. The footings should be constructed at a minimum overall depth of 30 inches below finished grade. The full perimeter of the structure should be supported by footings or grade beams. Footing reinforcement should be in accordance with the requirements of the architect/engineer.

2. Footings bearing into firm, native soils may be designed using maximum allowable bearing capacities of 1,500 psf dead load and 2,000 psf dead plus live load. Using these values, settlement is expected to be less than 3/4 inch.

3. Continuous footings and grade beams should be reinforced, at a minimum, by two No. 5 rebar, one at the top and one at the bottom, or as required by the architect/engineer. Spread footings should be reinforced in accordance with the requirements of the architect/engineer.

Pole Foundations

1. Pole foundations may be utilized for the café structure. The pole foundations should have a minimum diameter of 24 inches and extend a minimum depth of 7 feet into native soils.

2. The pole foundations should not be constructed closer than two diameters (clear span) to each other without approval from this firm.

3. When the foundation acts in compression, an allowable shaft resistance value 300 psf for native soils. No end bearing capacity should be used in the calculations. For resistance to lateral loads, pole foundations may be designed using an ultimate passive equivalent fluid pressure of 250 pcf. Passive and friction components may be combined in the analysis without reduction to either value.

4. The pole foundations should be connected on at least two sides with grade beams a minimum of 18 inches deep. The foundations should be designed to act as an integral unit.

5. The soils may not stand vertically during the caisson construction. Casing, drill fluid, or other means of keeping the hole open may be necessary.

6. As the pole foundations will utilize side resistance for support, it is not necessary to remove all loose debris and slough material from the bottoms of the excavations, although the majority of loose debris and slough material should be removed by means of a clean-out bucket or other suitable means. As stated earlier, use of end-bearing capacity is not recommended.

7. Concrete used in pole foundations should be placed at a slump between 4 and 6 inches in dry excavations.

8. The pole foundations should not deviate from a plumb line taken from the center of the foundation by more than 2 percent of the foundation length, from the top to the point of interest.

9. All pole foundations should be concreted the same day as they are drilled. If this is not practicable, the pole foundations should be secured in a safe manner in conformance with CalOSHA or other applicable safety standards until they are concreted. Any pole foundation excavation that has not been concreted the same day as it was drilled should have the soil and rock surfaces “freshened” by extending the rotating auger into and out of the hole several times, and the additional slough and debris removed, immediately prior to placement of the rebar and concrete.

10. Special inspection of the drilling of the pole foundations as well as placement of the reinforcing and concrete should be provided.

Foundations – General

1. Allowable bearing capacities may be increased by one-third when transient loads such as wind or seismicity are included.

2. The seismic acceleration site parameters included in the table below have been provided to the design team for use in its analyses. The 2010 ASCE 7 method with 2013 updates, available on the Structural Engineers Association of California website (SEAOC 2021), was used to obtain the parameters. The project was considered to be a "nonessential" facility from the perspective of risk category as described by the CBC. The site coordinates stated in the "Introduction and Site Setting" section were used in the analysis. Based upon the subsurface conditions encountered during our investigation, the site should be classified as Site Class D (Stiff Soil). Foundations may be designed using the following 2019 CBC seismic parameters.

SEISMIC ACCELERATION SITE PARAMETERS

Mapped Spectral Response Accelerations		**Site Coefficients for Site Class D**		**Adjusted MCE Spectral Response Accelerations for Site Class D**		**Design Spectral Response Accelerations for Site Class D**	
Seismic Parameter	Value (g)	Site Coefficient	Value	Seismic Parameter	Value (g)	Seismic Parameter	Value (g)
S_S	1.059	F_a	1.080	S_{MS}	1.140	S_{DS}	0.760
S_1	0.391	F_v	1.910	S_{M1}	0.746	S_{D1}	0.498
Peak Mean Ground Acceleration (PGA_m): 0.531 g							
Seismic Design Category: D							

3. For resistance to lateral loads, shallow foundations may be designed using an ultimate passive equivalent fluid pressure of 350 pcf and a friction factor of 0.35. Passive and friction components may be combined in the analysis without reduction to either value. Lateral capacity is based on the assumption that any backfill adjacent to foundations has been properly compacted.

4. Foundation excavations should be observed by the geotechnical engineer during excavation and prior to placement of formwork, reinforcing steel or concrete. Soil in foundation excavations should be moistened to optimum moisture content, or just above, prior to application of compactive effort, and no desiccation cracks should be present prior to concrete placement.

Interior Slabs-on-Grade and Exterior Pedestrian Flatwork

Interior Slabs-On-Grade

1. Interior pedestrian slabs-on-grade should have a minimum thickness of 4 inches. They should be reinforced and doweled to foundations per the specifications of the architect/engineer. At a minimum, interior slabs should be reinforced with No. 3 rebar at 24 inches on center each way. All structural slabs should contain minimum rebar meeting the criteria of ACI 318 (ACI 2014). At a minimum, foundation dowels should be lap spliced to the slab rebar. The size and spacing of the dowels should match the size and spacing of the slab rebar.

Exterior Pedestrian Flatwork

1. Exterior pedestrian flatwork should have a minimum thickness of 4 inches. Minimum reinforcement for exterior pedestrian flatwork should consist of No. 3 rebar placed at 24 inches on-center each way.

2. Exterior pedestrian flatwork should have thickened edges a minimum of 6 inches below the bottom of the slab.

3. Flatwork should be constructed with frequent joints to allow articulation as the flatwork moves in response to seasonal soil temperature and moisture variations. The soil below flatwork should be moisture conditioned prior to casting the flatwork.

4. Flatwork at doorways, and at other areas where maintaining the elevation of the flatwork is desired, should be doweled to the perimeter foundations or other adjacent improvements. The dowel spacing and diameter should match that of the reinforcement. In other areas, the flatwork may be doweled to the foundation, or the flatwork may be allowed to “float free,” at the discretion of the architect/engineer. Flatwork that is intended to float free should be separated from foundations by a felt joint or other means.

Moisture Vapor Transmission

1. Due to the current use of impermeable floor coverings, water-soluble flooring adhesives, and the speed at which buildings are now constructed, moisture vapor transmission through slabs is more common than in past years. *Where moisture vapor transmitted from the underlying soil would be undesirable*, the slabs should be protected from subsurface moisture vapor. A number of options for vapor protection are discussed below; however, the means of vapor protection, including the type and thickness of the vapor retarder, if specified, are left to the discretion of the architect/engineer.

2. *Where specified*, vapor retarders should conform to ASTM Standard E1745-17. This standard specifies properties for three performance classes, Class "A", "B" and "C". The appropriate class should be selected based on the potential for damage to the vapor retarder during its installation and placement of slab reinforcement and concrete.

3. It should be noted that ASTM E 1745-17 has the same permeance threshold for Class A through Class C (0.1 perms). The class chosen will make a difference in how resistant the vapor retarder is to punctures and tears, but it will not insure any better permeance values to protect floor coverings.

4. Several recent studies, including those of ACI Committee 302 (ACI 2015), have concluded that excess water above the vapor retarder increases the potential for moisture damage to floor coverings and could increase the potential for mold growth or other microbial contamination. The studies also concluded that it is preferable to eliminate the typical sand layer beneath the slab and place the slab PCC in direct contact with a vapor retarder, particularly during wet weather construction. However, placing the PCC directly on the vapor retarder requires special attention to specifying the proper vapor retarder, a very low water-cement ratio in the PCC mix, and special finishing and curing techniques.

5. Another option for vapor protection would be the use of vapor-inhibiting admixtures in the slab PCC mix and/or application of a sealer to the surface of the slab. This would also require special PCC mixes and placement procedures, depending upon the recommendations of the admixture or sealer manufacturer.

6. A third option that may be a reasonable compromise between effectiveness and cost considerations would be the use of a subslab vapor retarder protected by a layer of granular material or of clean sand, with the granular material being the preferred choice. The granular material should be easily compactible and have a relatively low fines content and a low wicking potential. Clean sand is defined as a well or poorly graded sand (ASTM D2487-17) of which less than 3 percent passes the No. 200 sieve. The retarder should be covered with a minimum 4 inches of granular material or clean sand. If a Class "A" vapor retarder is specified, the retarder can be placed directly on the compacted soil material. If a less durable vapor retarder is specified (Class "B" or "C"), a minimum of 1-inch of clean sand should be placed over the compacted soil material to reduce the chance of puncturing the vapor retarder.

7. If sand is used between the vapor retarder and the slab, it should be moistened only as necessary to promote concrete curing; *saturation of the sand should be avoided*, as the excess moisture would be on top of the vapor retarder, potentially resulting in vapor transmission through the slab for months or years.

8. Regardless of the underslab vapor retarder selected, proper installation of the retarder is critical for optimum performance. Where utilized, the vapor retarded should be placed a minimum of 1-inch above the flow line of the drainage path surrounding the structures, or 1-inch above the area drain grates if area drains are used to collect runoff around the structures. All seams must be properly lapped, and all seams and utility penetrations properly sealed in accordance with the vapor retarder manufacturer's recommendations and ASTM E1643-18a. At the terminating edges of the vapor retarder, the vapor retarder should be effectively sealed with accessories specifically designed to seal the material to new or existing concrete; details for edge sealing of the vapor retarder should be provided by the architect/engineer.

Slabs-on-Grade - General

1. To reduce shrinkage cracks in all interior and exterior slabs-on-grade, the concrete aggregates should be of appropriate size and proportion, the water/cement ratio should be low, the concrete should be properly placed and finished, contraction joints should be installed, and the concrete should be properly cured. This is particularly applicable to slabs that will be cast directly upon a vapor retarder and those that will be protected from transmission of vapor by use of admixtures or surface sealers. Concrete materials, placement, and curing specifications should be at the direction of the architect/engineer; AC 302.1R-15 (ACI 2015) is suggested as a resource for the architect/engineer in preparing such specification.

Drainage and Maintenance

1. Unpaved ground surfaces should be graded during construction, and per Section 1804.4 of the 2019 CBC, finish graded to direct surface runoff away from foundations, slopes, and other improvements at a minimum 5 percent grade for a minimum distance of 10 feet. If this is not feasible due to the terrain, property lines, or other factors, swales with improved surfaces, area drains, or other drainage features should be provided to divert drainage away from these areas.

2. Finished surfaces should be sloped to freely drain toward appropriate drainage facilities. Water should not be allowed to stand or pond on or adjacent to slopes or other improvements.

3. Where infiltration stormwater control measure areas will lie within 8 feet of foundations, flatwork, pavement, or other similar surface improvement, moisture protection should be provided between the infiltration feature and the improvement. Moisture protection should consist of curbs or impermeable liners, deepened to a minimum of 2 feet below foundations, or the bottom of the infiltration facility, whichever is deeper. It is not anticipated that this protection needs to extend greater than 8 feet.

4. The eaves of the proposed building should be provided with roof gutters. Runoff from roof gutters, downspouts, area drains, weep holes, etc., should discharge to an appropriate outlet in a nonerosive manner away from foundations and other

improvements in accordance with the requirements of the governing agencies. Erosion protection should be placed at all discharge points unless the discharge is to a pavement surface.

5. Stabilization of surface soils, particularly those disturbed during construction, by vegetation or other means *during and following construction,* should be implemented to protect the site from erosion damage. Care should be taken to establish and maintain vegetation.

6. To reduce the potential for damage due to erosion it is essential that the surface soils, particularly those disturbed during construction, be stabilized by vegetation or other means during and following construction. Care should be taken to establish and maintain vegetation. The landscaping and exterior flatwork should be installed to maintain the surface drainage recommended above.

7. To reduce the potential for disruption of drainage patterns and undermining of foundations and other improvements, rodent activity should be aggressively controlled.

Observation and Testing

1. It must be recognized that the recommendations contained in this report are based on a limited number of borings and rely on continuity of the subsurface conditions encountered. Therefore, the geotechnical engineer should be retained to provide consultation during the design phase, to review plans as they near completion, to interpret this report during construction, and to provide construction monitoring in the form of testing and observation.

2. At a minimum, the geotechnical engineer should be retained to provide:

    - Review of the project plans as they near completion
    - Professional observation during grading and backfill
    - Oversight of soil special inspection during grading and foundation construction

3. Special inspection of grading and backfill should be provided as per Section 1705.6 and Table 1705.6 of the 2019 CBC. The special inspector should be under the direction of the geotechnical engineer. It is our opinion that none of the grading construction is of a nature that should warrant continuous special inspection; periodic special inspection should

suffice. Subject to approval by the Building Official, the exception to continuous special inspection is described in Section 1704.2 of the 2019 CBC and should be specified by the architect/engineer and periodic special inspection of the following items should be provided by the special inspector.

- Stripping and clearing of all existing improvements, vegetation and unsuitable materials
- Overexcavation to the recommended depths
- Scarification, moisture conditioning, and compaction of the soil
- Fill quality, placement, moisture conditioning and compaction
- Utility trench backfill
- Foundation excavations
- Subgrade and AB/nonexpansive fill compaction and proof-rolling

4. A program of quality control should be developed prior to beginning grading. The contractor or project manager should determine any additional inspection items required by the architect/engineer or the governing jurisdiction.

5. Locations and frequency of compaction tests should be per the recommendation of the geotechnical engineer at the time of construction. The recommended test location and frequency may be subject to modification by the geotechnical engineer, based upon soil ad moisture conditions encountered, size and type of equipment used by the contractor, the general trend of the results of compaction tests, or other factors.

6. A preconstruction conference among the owner, the geotechnical engineer, the governing agency, the special inspector, the project inspector, the architect/engineer, and contractors is recommended to discuss planned construction procedures and quality control requirements.

7. The geotechnical engineer should be notified at least 48 hours prior to beginning construction operations. If Earth Systems Pacific is not retained to provide construction observation and testing services, it shall not be responsible for the interpretation of the information by others or any consequences arising therefrom.

8.0 CLOSURE

Our intent was to perform the investigation in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the locality of this project and under similar conditions. No representation, warranty, or guarantee is either expressed or implied. This report is intended for the exclusive use by the client as discussed in the "Scope of Services" Section. Application beyond the stated intent is strictly at the user's risk.

This report is valid for conditions as they exist at this time for the type of project described herein. The conclusions and recommendations contained in this report could be rendered invalid, either in whole or in part, due to changes in building codes, regulations, standards of geotechnical or construction practice, changes in physical conditions, or the broadening of knowledge. If Earth Systems Pacific is not retained to provide construction observation and testing services, it shall not be responsible for the interpretation of the information by others or any consequences arising therefrom.

If changes with respect to project type or location become necessary, if items not addressed in this report are incorporated into plans, or if any of the assumptions used in the preparation of this report are not correct, this firm shall be notified for modifications to this report. Any items not specifically addressed in this report should comply with the CBC and the requirements of the governing jurisdiction.

The preliminary recommendations of this geotechnical report are based upon the geotechnical conditions encountered at the site and may be augmented by additional requirements of the architect/engineer, or by additional recommendations provided by the geotechnical engineer based on conditions exposed at the time of construction.

This document, the data, conclusions, and recommendations contained herein are the property of Earth Systems Pacific. This report shall be used in its entirety, with no individual sections reproduced or used out of context. Copies may be made only by Earth Systems Pacific, the client, and the client's authorized agents for use exclusively on the subject project. Any other use is subject to federal copyright laws and the written approval of Earth Systems Pacific.

Thank you for this opportunity to have been of service. If you have any questions, please feel free to contact this office at your convenience.

End of Text.

TECHNICAL REFERENCE LIST

ACI (American Concrete Institute). 2014. "Building Code Requirements for Structural Concrete." *Document 318-14*.

ACI (American Concrete Institute). 2015. "Guide for Concrete Floor and Slab Construction." Documents 302.1R.15.

ASCE (American Society of Civil Engineers). 2013. *Minimum Design Loads for Buildings and other Structures (7-10, third printing), Standards ASCE/SEI 7-10*.

California Building Code. 2019. *California Code of Regulations, Title 24, Part 2.*

Google Earth. 2022. Google Earth [website], retrieved from: http://www.google.com/earth/index.html

USGU (United States Geological Survey). 2021. Earthquake Hazards Program, retrieved from: http://earthquake.usgs.gov/hazards/designmaps/

SEAOC (Structural Engineers Association of California). 2021. “Seismic Design Map Tool.” Retrieved from: https://seismicmaps.org/

APPENDIX A

Figure 1 – Site Vicinity Map

Figure 2 – Exploration Location Map

Boring Log Legend

Boring Logs

NOT TO SCALE

BASE MAP PROVIDED BY: Google Earth (2022)

Earth Systems Pacific
4378 Old Santa Fe Road, San Luis Obispo, CA 93401
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(805) 544-3276 ● Fax (805) 544-1786

SITE VICINITY MAP

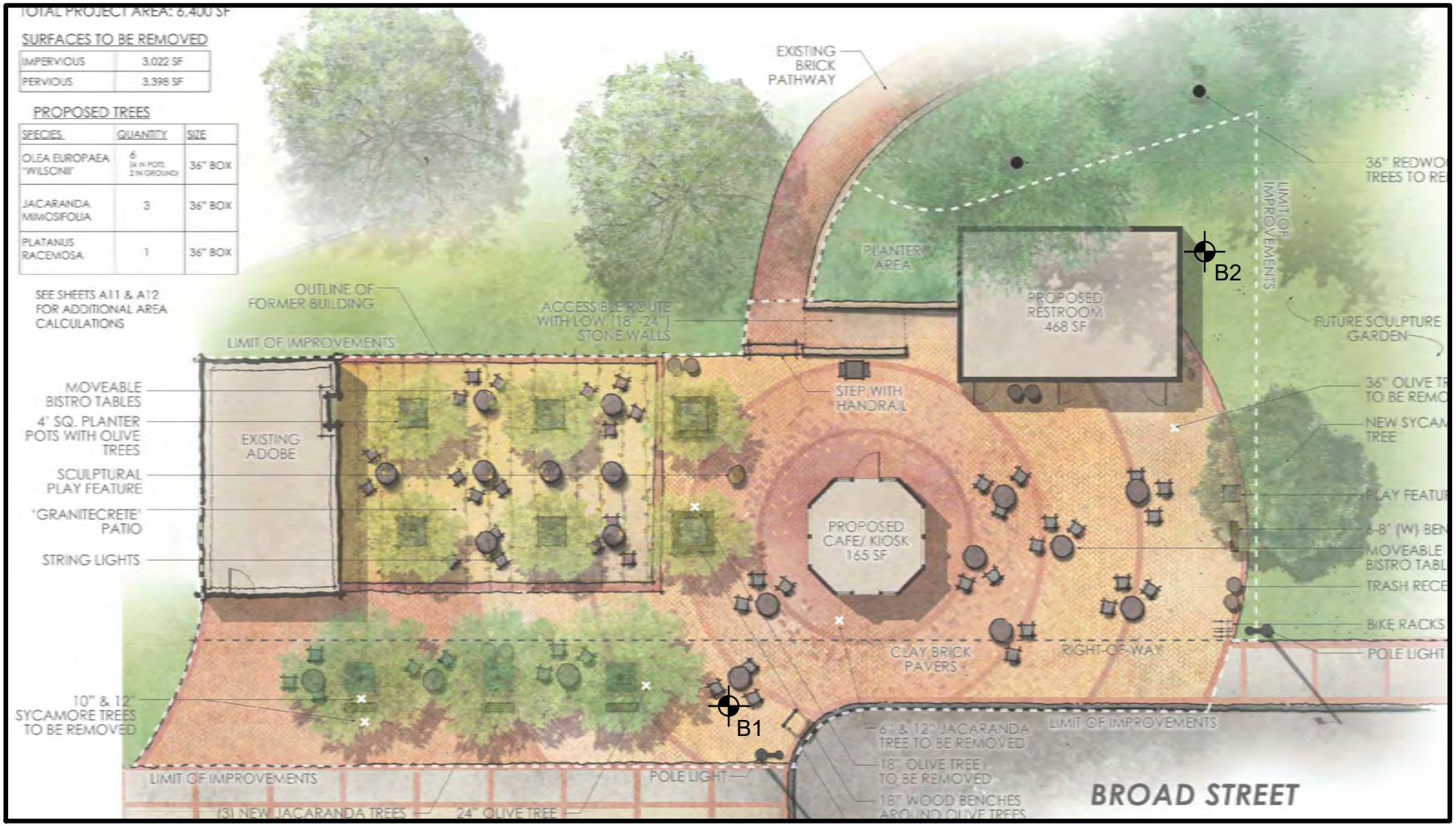
Mission Plaza - Restroom and Cafe
San Luis Obispo Mission Plaza
San Luis Obispo, California

Date
October 2022

Project No.
305341-001

Figure 1

305341--001MISSIONPLAZA--RESTROOMANDCAFE082222maps.dwg



LEGEND

B1 Boring Location (Approx.)

NOT TO SCALE

BASE MAP PROVIDED BY: RRM Design Group

Earth Systems Pacific
4378 Old Santa Fe Road, San Luis Obispo, CA 93401
www.earthsystems.com
(805) 544-3276 • Fax (805) 544-1786

EXPLORATION LOCATION MAP

Mission Plaza - Restroom and Cafe
San Luis Obispo Mission Plaza
San Luis Obispo, California

Date
October 2022

Project No.
305341-001

Figure 2

305341--001MISSIONPLAZA--RESTROOMANDCAFE082222maps.dwg

Earth Systems Pacific

BORING LOG LEGEND

SAMPLE / SUBSURFACE WATER SYMBOLS	GRAPH. SYMBOL
CALIFORNIA MODIFIED	
STANDARD PENETRATION TEST (SPT)	
SHELBY TUBE	
BULK	
SUBSURFACE WATER DURING DRILLING	
SUBSURFACE WATER AFTER DRILLING	

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

MAJOR DIVISIONS	GROUP SYMBOL	TYPICAL DESCRIPTIONS	GRAPH. SYMBOL
COARSE GRAINED SOILS (MORE THAN HALF OF MATERIAL IS LARGER THAN #200 SIEVE SIZE)	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
	GP	POORLY GRADED GRAVELS, OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES, NON-PLASTIC FINES	
	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, PLASTIC FINES	
	SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
	SP	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES	
	SM	SILTY SANDS, SAND-SILT MIXTURES, NON-PLASTIC FINES	
	SC	CLAYEY SANDS, SAND-CLAY MIXTURES, PLASTIC FINES	
FINE GRAINED SOILS (HALF OR MORE OF MATERIAL IS SMALLER THAN #200 SIEVE SIZE)	ML	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
	OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS	
	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
	OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
	PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	

OBSERVED MOISTURE CONDITION

DRY	SLIGHTLY MOIST	MOIST	VERY MOIST	WET (SATURATED)

CONSISTENCY

COARSE GRAINED SOILS			FINE GRAINED SOILS		
BLOWS/FOOT		DESCRIPTIVE TERM	BLOWS/FOOT		DESCRIPTIVE TERM
SPT	CA SAMPLER		SPT	CA SAMPLER	
0-10	0-16	LOOSE	0-2	0-3	VERY SOFT
11-30	17-50	MEDIUM DENSE	3-4	4-7	SOFT
31-50	51-83	DENSE	5-8	8-13	MEDIUM STIFF
OVER 50	OVER 83	VERY DENSE	9-15	14-25	STIFF
			16-30	26-50	VERY STIFF
			OVER 30	OVER 50	HARD

GRAIN SIZES

U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENING		
# 200	# 40	# 10	# 4	3/4"	3"	12"

SILT & CLAY	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

TYPICAL BEDROCK HARDNESS

MAJOR DIVISIONS	TYPICAL DESCRIPTIONS
EXTREMELY HARD	CORE, FRAGMENT, OR EXPOSURE CANNOT BE SCRATCHED WITH KNIFE OR SHARP PICK; CAN ONLY BE CHIPPED WITH REPEATED HEAVY HAMMER BLOWS
VERY HARD	CANNOT BE SCRATCHED WITH KNIFE OR SHARP PICK; CORE OR FRAGMENT BREAKS WITH REPEATED HEAVY HAMMER BLOWS
HARD	CAN BE SCRATCHED WITH KNIFE OR SHARP PICK WITH DIFFICULTY (HEAVY PRESSURE); HEAVY HAMMER BLOW REQUIRED TO BREAK SPECIMEN
MODERATELY HARD	CAN BE GROOVED 1/16 INCH DEEP BY KNIFE OR SHARP PICK WITH MODERATE OR HEAVY PRESSURE; CORE OR FRAGMENT BREAKS WITH LIGHT HAMMER BLOW OR HEAVY MANUAL PRESSURE
SOFT	CAN BE GROOVED OR GOUGED EASILY BY KNIFE OR SHARP PICK WITH LIGHT PRESSURE, CAN BE SCRATCHED WITH FINGERNAIL; BREAKS WITH LIGHT TO MODERATE MANUAL PRESSURE
VERY SOFT	CAN BE READILY INDENTED, GROOVED OR GOUGED WITH FINGERNAIL, OR CARVED WITH KNIFE; BREAKS WITH LIGHT MANUAL PRESSURE

TYPICAL BEDROCK WEATHERING

MAJOR DIVISIONS	TYPICAL DESCRIPTIONS
UNWEATHERED	NO DISCOLORATION, NOT OXIDIZED
SLIGHTLY WEATHERED	DISCOLORATION OR OXIDATION IS LIMITED TO SURFACE OF, OR SHORT DISTANCE FROM, FRACTURES: SOME FELDSPAR CRYSTALS ARE DULL
MODERATELY WEATHERED	DISCOLORATION OR OXIDATION EXTENDS FROM FRACTURES, USUALLY THROUGHOUT; Fe-Mg MINERALS ARE "RUSTY", FELDSPAR CRYSTALS ARE "CLOUDY"
HIGHLY WEATHERED	DISCOLORATION OR OXIDATION THROUGHOUT; FELDSPAR AND Fe-Mg MINERALS ARE ALTERED TO CLAY TO SOME EXTENT, OR CHEMICAL ALTERATION PRODUCES IN SITU DISAGGREGATION
DECOMPOSED	DISCOLORATION OR OXIDATION THROUGHOUT, BUT RESISTANT MINERALS SUCH AS QUARTZ MAY BE UNALTERED; FELDSPAR AND Fe-Mg MINERALS ARE COMPLETELY ALTERED TO CLAY

drafting/masters/Boring Log Legend 062719.dwg

Earth Systems Pacific

Boring No. 1

LOGGED BY: A. Flynn
DRILL RIG: SIMCO EP200 with Automatic Hammer
AUGER TYPE: 4" Solid Stem

PAGE 1 OF 1
JOB NO.: 305341-001
DATE: 08/17/2022

Mission Plaza - Restroom and Cafe
San Luis Obispo Mission Plaza
San Luis Obispo, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.
0	SM		SILTY SAND: dark brown, medium dense, slightly moist (Topsoil)					
1	SC			0.5 - 4.0	◯			
2			CLAYEY SAND: brown, medium dense, slightly moist (Alluvium)					
3			pale brown					
4	CL		SANDY LEAN CLAY: dark yellowish brown, very stiff, slightly moist					8
5				5.0 - 6.5	■	99.7	16.3	16
6			moist					19
7								
8								
9								
10				10.0 - 11.5	■			9
11	SC		CLAYEY SAND: dark brown with yellow and red mottling, medium dense, moist, trace gravel					11
12								16
13	CL		SANDY LEAN CLAY: brown, very stiff, moist					
14								
15			CLAYEY SAND: dark brown with yellow and red mottling, medium dense, moist	15.0 - 16.5	■			11
16	SC							18
17			End of Boring @ 16.5'					28
18			No subsurface water encountered					
19								
20								
21								
22								
23								
24								
25								
26								

LEGEND: ■ Ring Sample ◯ Grab Sample ▭ Shelby Tube Sample ● SPT

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

Earth Systems Pacific

Boring No. 2

LOGGED BY: A. Flynn
DRILL RIG: SIMCO EP200 with Automatic Hammer
AUGER TYPE: 4" Solid Stem

JOB NO.: 305341-001
DATE: 08/17/2022

Mission Plaza - Restroom and Cafe
San Luis Obispo Mission Plaza
San Luis Obispo, California

DEPTH (feet)	USCS CLASS	SYMBOL	SOIL DESCRIPTION	SAMPLE DATA: INTERVAL (feet)	SAMPLE TYPE	DRY DENSITY (pcf)	MOISTURE (%)	BLOWS PER 6 IN.
0	CL		SANDY LEAN CLAY: brown, stiff, moist (Alluvium)	0.0 - 5.0	◯			
3			pale brown, very stiff					
5				5.0 - 6.5	■	104.8	15.9	10 17 26
6			dark yellowish brown					
9	SC		CLAYEY SAND: yellowish brown, medium dense, slightly moist					
10				10.0 - 11.5	■			10 16 26
12	CL		SANDY LEAN CLAY: brown, very stiff, moist	12.5 - 14.0	■			10 26 30
13			cobbles					
14			End of Boring @ 14.0' due to refusal No subsurface water encountered					

LEGEND: ■ Ring Sample ◯ Grab Sample ▭ Shelby Tube Sample ● SPT

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

APPENDIX B

Geotechnical Laboratory Test Results

City of SLO Mission Plaza
Restaurant and Café

305341-001

BULK DENSITY TEST RESULTS

ASTM D 2937-17 (modified for ring liners)

September 8, 2022

BORING NO.	DEPTH feet	MOISTURE CONTENT, %	WET DENSITY, pcf	DRY DENSITY, pcf
1	6.0 - 6.5	16.3	115.9	99.7
2	6.0 - 6.5	15.9	121.5	104.8

EXPANSION INDEX TEST RESULTS

ASTM D 4829-19

BORING NO.	DEPTH feet	EXPANSION INDEX
2	0.0 - 5.0	33

City of SLO Mission Plaza
Restaurant and Café

305341-001

MOISTURE-DENSITY COMPACTION TEST

ASTM D 1557-12 (Modified)

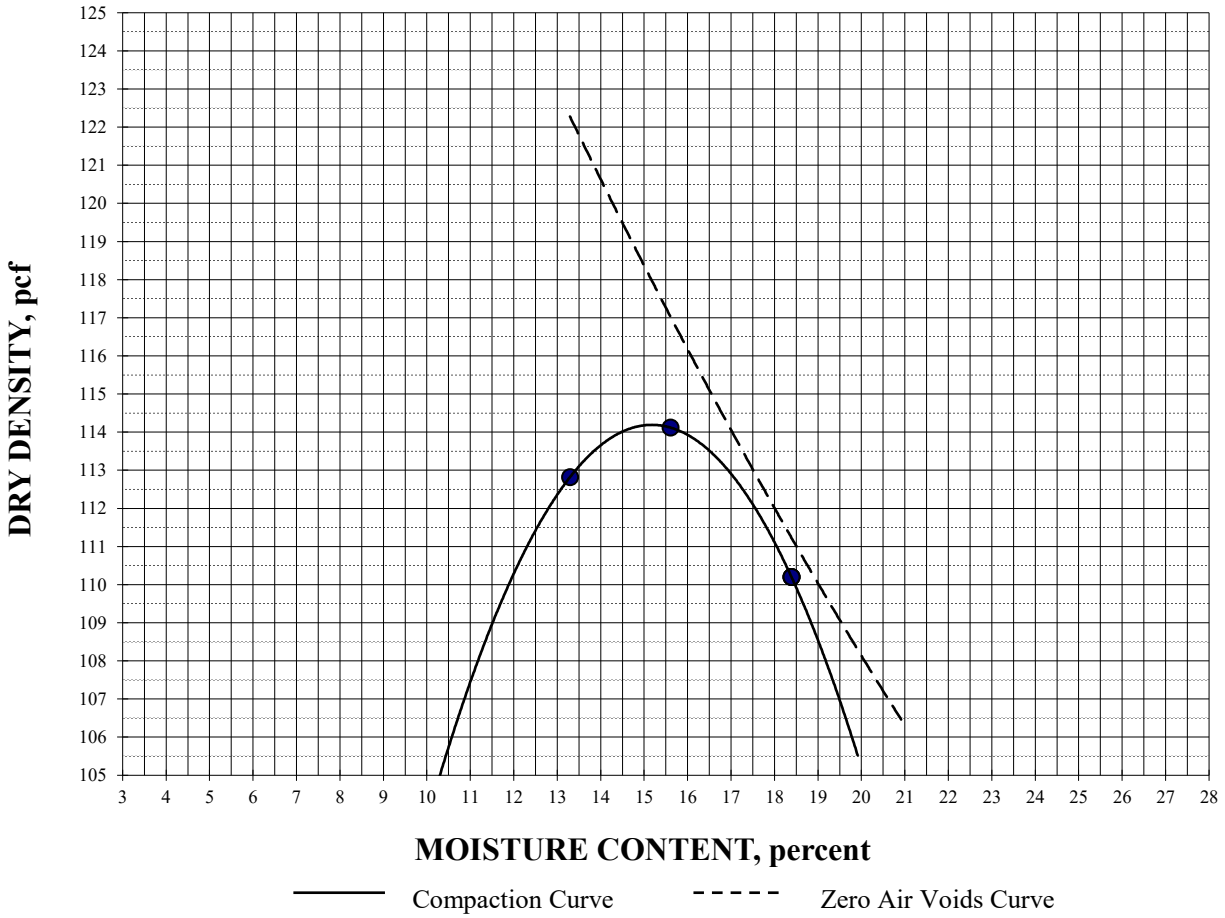
PROCEDURE USED: A
PREPARATION METHOD: Moist
RAMMER TYPE: Mechanical
SPECIFIC GRAVITY: 2.65 (assumed)

September 8, 2022
Boring #2 @ 0.0 - 5.0'
Brown Sandy Lean Clay (CL)

SIEVE DATA:

Sieve Size	% Retained (Cumulative)
3/4"	0
3/8"	0
#4	0

MAXIMUM DRY DENSITY: 114.2 pcf
OPTIMUM MOISTURE: 15.2%



City of SLO Mission Plaza
Restaurant and Café

305341-001

DIRECT SHEAR

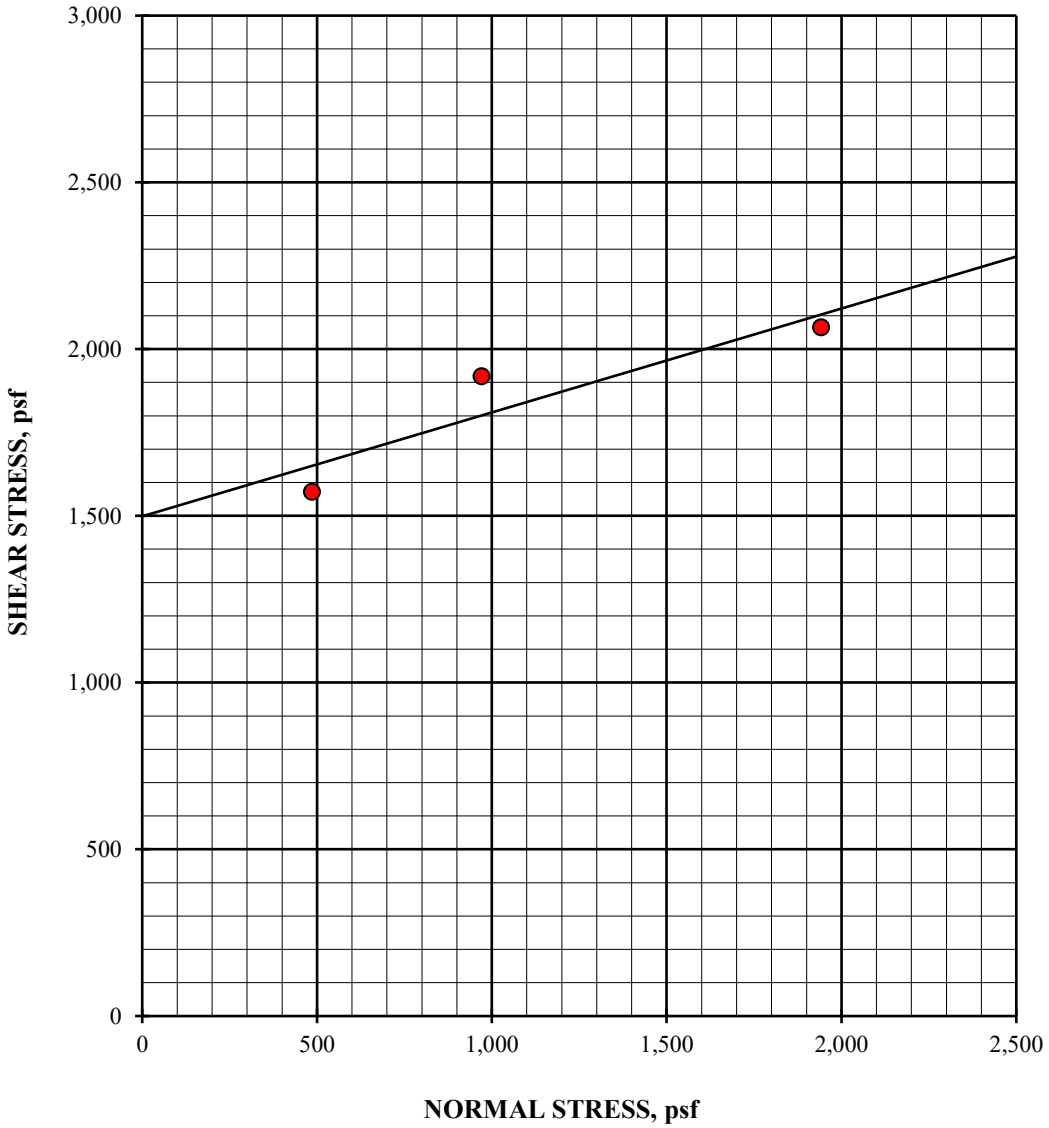
ASTM D 3080/D3080M-11 (modified for consolidated, undrained conditions)

September 8, 2022

Boring #2 @ 0.0 - 5.0'
Sandy Lean Clay (CL)
Compacted to 90% RC, saturated

INITIAL DRY DENSITY: 102.8 pcf
INITIAL MOISTURE CONTENT: 15.2 %
PEAK SHEAR ANGLE (Ø): 17°
COHESION (C): 1,499 psf

SHEAR vs. NORMAL STRESS



City of SLO Mission Plaza
Restaurant and Café

305341-001

DIRECT SHEAR continued

ASTM D 3080/D3080M-11 (modified for consolidated, undrained conditions)

Boring #2 @ 0.0 - 5.0'

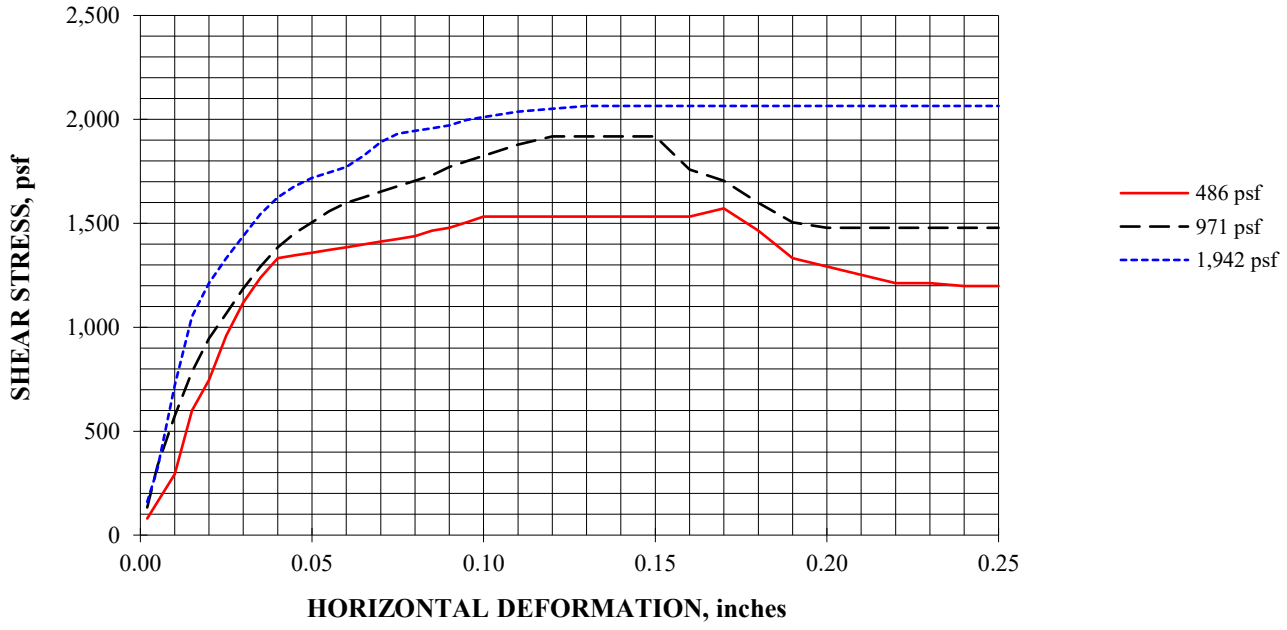
September 8, 2022

Sandy Lean Clay (CL)

Compacted to 90% RC, saturated

SPECIFIC GRAVITY: 2.70 (assumed)

SAMPLE NO.:	1	2	3	AVERAGE
INITIAL				
WATER CONTENT, %	15.2	15.2	15.2	15.2
DRY DENSITY, pcf	102.8	102.8	102.8	102.8
SATURATION, %	64.2	64.2	64.2	64.2
VOID RATIO	0.639	0.639	0.639	0.639
DIAMETER, inches	2.410	2.410	2.410	
HEIGHT, inches	1.00	1.00	1.00	
AT TEST				
WATER CONTENT, %	32.7	33.3	33.4	
DRY DENSITY, pcf	103.5	105.6	107.7	
SATURATION, %	100.0	100.0	100.0	
VOID RATIO	0.628	0.595	0.564	
HEIGHT, inches	0.99	0.97	0.95	



City of SLO Mission Plaza
Restaurant and Café

305341-001

PARTICLE SIZE ANALYSIS

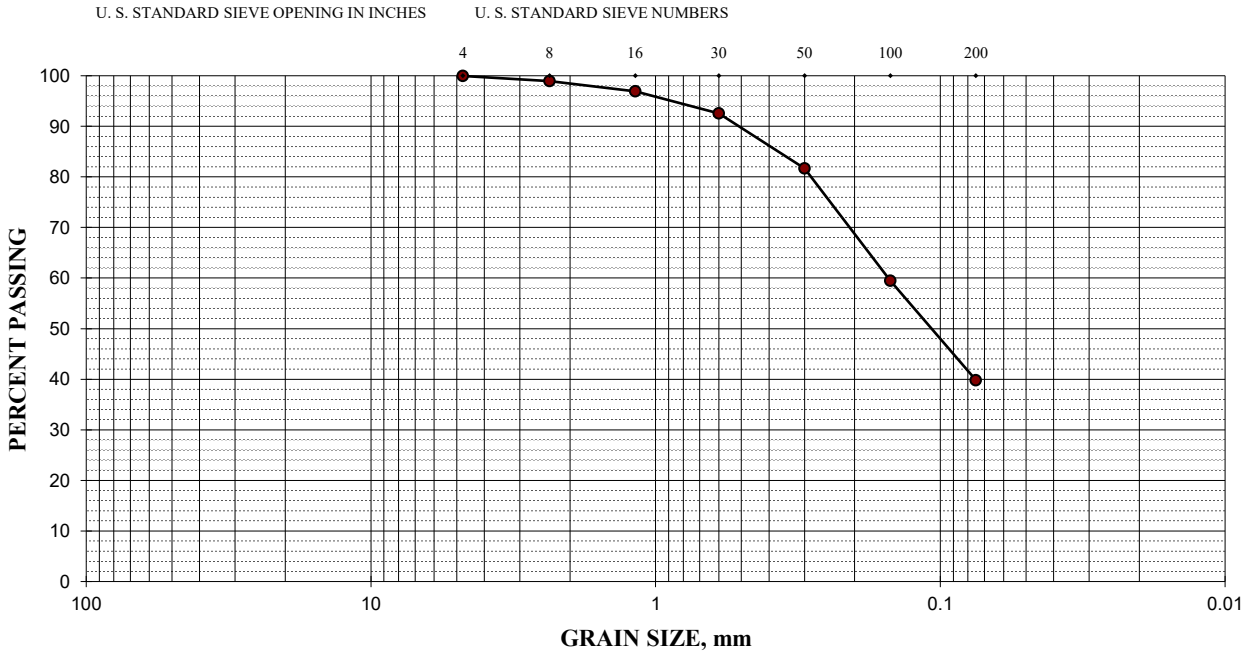
ASTM D 422-63/07; D 1140-017

Boring #1 @ 0.5 - 4.0'

September 8, 2022

Brown Poorly Graded Sand with Gravel (SP)

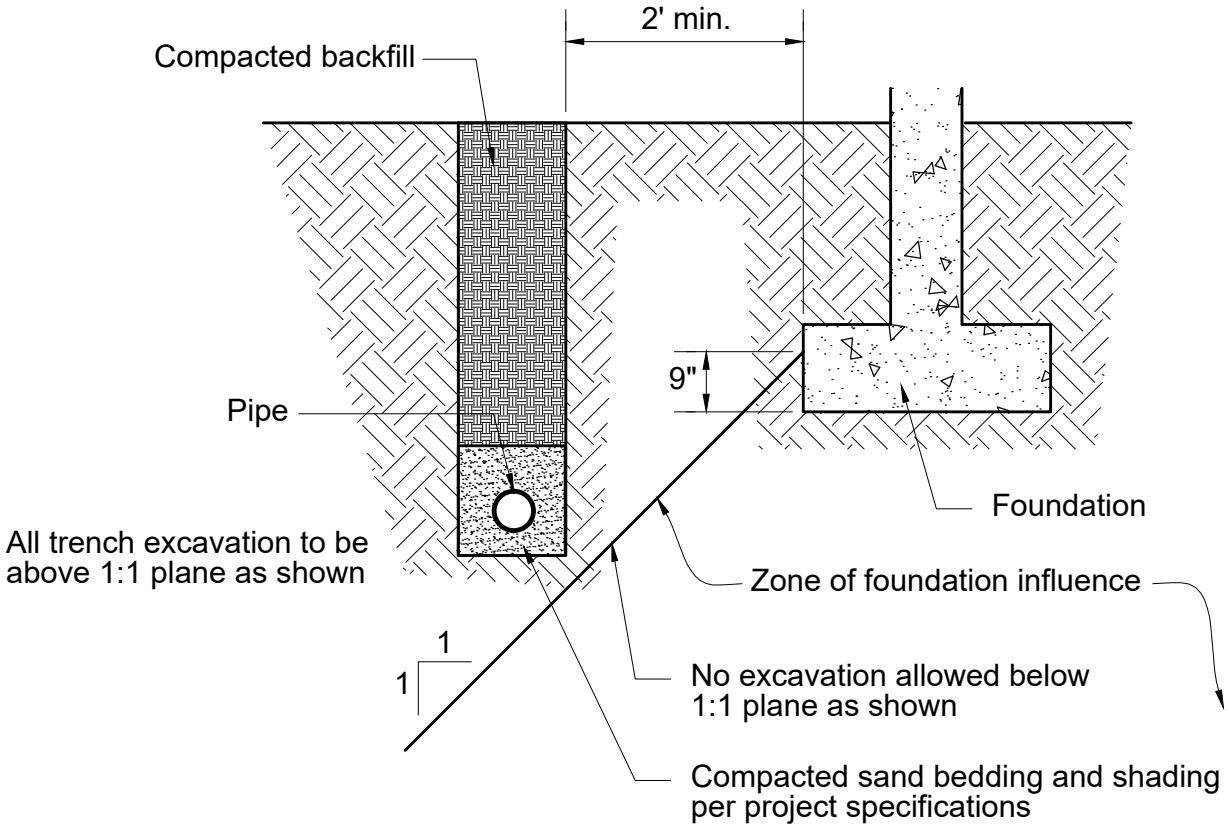
Sieve size	% Retained	% Passing
#4 (4.75-mm)	0	100
#8 (2.36-mm)	1	99
#16 (1.18-mm)	3	97
#30 (600-µm)	7	93
#50 (300-µm)	18	82
#100 (150-µm)	41	59
#200 (75-µm)	60	40



APPENDIX C

Typical Detail A: Pipe Placed Parallel to Foundations

TYPICAL DETAIL A
PIPE PLACED PARALLEL TO FOUNDATION



SCHEMATIC ONLY
NOT TO SCALE

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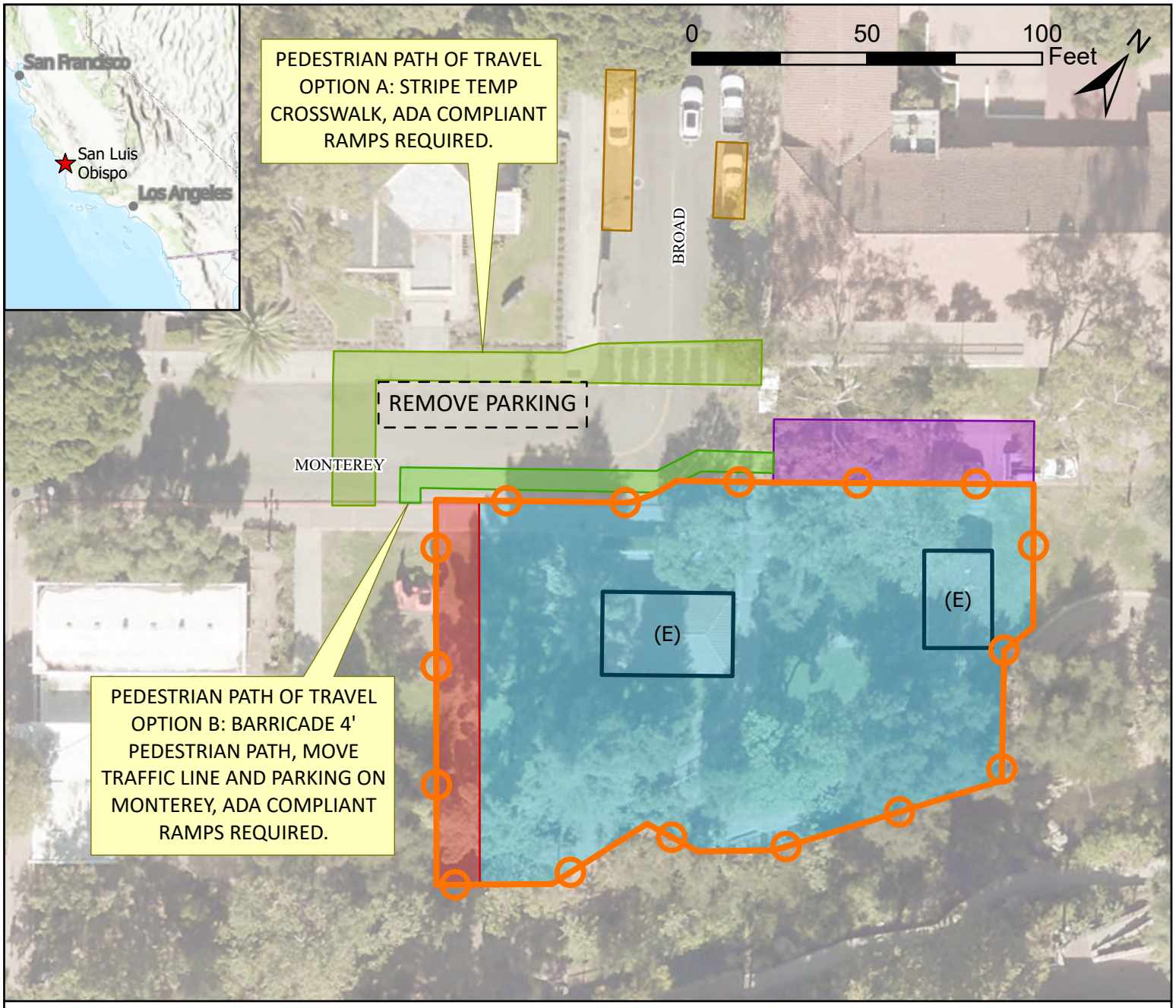
E-mail: esp@earthsystems.com

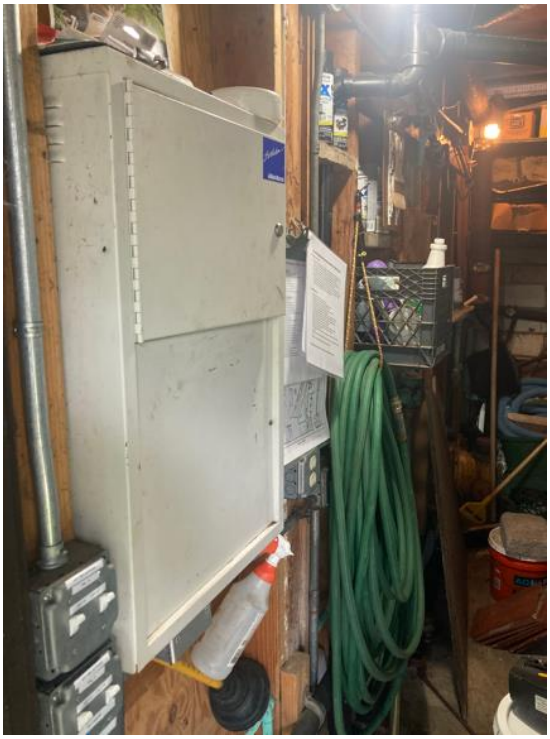
APPENDIX J – CONSTRUCTION STAGING PLAN



LEGEND

- CONTRACTOR LAY DOWN AREA
- CONTRACTOR PARKING
- PEDESTRIAN ACCESS. MAINTAIN DURING CONSTRUCTION - Opt. A
- PEDESTRIAN ACCESS. MAINTAIN DURING CONSTRUCTION - Opt. B
- APPROXIMATE AREA OF WORK
- PRIVATE VEHICLE ACCESS. MAINTAIN APPROX. 18' WIDE CLEAR PATH DURING CONSTRUCTION
- APPORXIMATE FENCE LINE
- (E) BUILDINGS

city of san luis obispo

MISSION PLAZA IMPROVEMENTS
CONSTRUCTION STAGING PLAN

APPENDIX K – PHOTOS OF EXISTING RESTROOM CHASE