

City of San Diego

CONTRACTOR'S NAME: _____
ADDRESS: _____
TELEPHONE NO.: _____ FAX NO.: _____
CITY CONTACT: Siavash Haghkhah, Address: 600 B Street, Suite 800, MS. 908A, San Diego, CA 92101
Email: Shaghkhah@sandiego.gov, Phone No. 619-533-5186, Fax No. 619-533-5176

NB/RIR/CA

CONTRACT DOCUMENTS



FOR

POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES

VOLUME 1 OF 2

BID NO.: _____ K-12-5548-DBB-3-C
SAP NO. (WBS/IO/CC): _____ B-10008/B-00952/B-10010
CLIENT DEPARTMENT: _____ 1914
COUNCIL DISTRICT: _____ 2
PROJECT TYPE: _____ BA

THIS CONTRACT IS SUBJECT TO THE FOLLOWING:

- THE CITY'S SUBCONTRACTING PARTICIPATION REQUIREMENTS FOR SLBE PROGRAM.

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Professional Engineer or Licensed Architect:



Professional Engineer or Licensed Architect

Seal:

((((((((((((((((((((**ATTENTION**))))))))))))))))))))

The 2010 edition of the City of San Diego Standard Specifications for Public Works Construction (“The WHITEBOOK”) now contains the following distinct Contract Documents:

- 1) ***Equal Opportunity Contracting Program Requirements*** - This Contract Document sets forth the standard requirements for the City’s equal opportunity contracting program. When additional requirements by the funding source e.g., federal or state agencies are physically included in the contract documents or by reference and there is a discrepancy, the funding source requirements shall govern unless specified otherwise in the Special Provisions.

- 2) ***City Supplement*** – The City Supplement shall be used in conjunction with the Standard Specifications for Public Works Construction (“The GREENBOOK”), 2009 Edition. The specifications contained in City Supplement take precedence over the specifications contained in The GREENBOOK, 2009 Edition.

Certain parts of the City Supplement have been highlighted in yellow for the convenience of the users only and shall not affect the interpretation of the Contract.

To obtain The GREENBOOK contact the publisher at: <http://www.bnibooks.com>

The WHITEBOOK is available only in electronic format under Engineering Documents and References at: <http://www.sandiego.gov/engineering-cip/>

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REQUIRED DOCUMENTS SCHEDULE

This table is intended to serve as a convenient tool for listing forms and documents required at different times. It is neither exhaustive nor must be considered a Contract Document by itself. Therefore, the users must review the entire Contract Documents and become familiar with the required documentation and the submittal schedule associated with each document.

Bidder's attention is directed to the City's Municipal Code §22.0807(e), (3)-(5) for important information regarding required documentation.

The specified EOC forms are all available for download from the EOC Program's web site at:

<http://www.sandiego.gov/eoc/forms/index.shtml>

ITEM	WHEN	BY	WHAT
1.	BID DUE DATE/TIME	ALL BIDDERS	Proposal (Bid)
2.	BID DUE DATE/TIME	ALL BIDDERS	Bid Bond
3.	BID DUE DATE/TIME	ALL BIDDERS	Non-collusion Affidavit to be Executed By Bidder and Submitted with Bid under 23 USC 112 and PCC 7106
4.	BID DUE DATE/TIME	ALL BIDDERS	Contractors Certification of Pending Actions
5.	BID DUE DATE/TIME	ALL BIDDERS	Equal Benefits Ordinance Certification of Compliance
6.	BID DUE DATE/TIME	ALL BIDDERS	Form AA35 - List of Subcontractors
7.	BID DUE DATE/TIME	ALL BIDDERS	Form AA40 - Named Equipment/Material Supplier List
8.	WITHIN 3 WORKING DAYS OF BID OPENING	ALL BIDDERS	Proof of Valid DBE-MBE-WBE-DVBE Certification Status e.g., Certs.
9.	WITHIN 3 WORKING DAYS OF BID OPENING	ALL BIDDERS	SLBE-ELBE Good Faith Documentations
10.	WITHIN 3 WORKING DAYS OF BID OPENING	ALL BIDDERS	Form AA60 – List of Work Made Available
11.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Names of the principle individual owners of the Apparent Low Bidder - In the event the firm is employee owned or publicly held, then the fact should be stated and the names of the firm's principals and officers shall be provided.
12.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	If the Contractor is a Joint Venture, the following information must be submitted: <ul style="list-style-type: none"> o Joint Venture Agreement o Joint Venture License

REQUIRED DOCUMENTS SCHEDULE

ITEM	WHEN	BY	WHAT
13.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Form BB05 - Work Force Report
14.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contract Forms - Agreement
15.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contract Forms - Payment and Performance Bond
16.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Certificates of Insurance and Endorsements
17.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	ALL BIDDERS	Contractor/Vendor Registration Form
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20.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contractors Standards - Pledge of Compliance
21.	BY 5th OF EACH MONTH	CONTRACTOR	Form CC20 - Monthly Employment Report
22.	BY 5th OF EACH MONTH	CONTRACTOR	Form CC25 - Monthly Invoicing Report
23.	PRIOR TO ACCEPTANCE	CONTRACTOR	Form CC10 - Contract Change Order (CCO)
24.	PRIOR TO ACCEPTANCE	CONTRACTOR	Form CC15 - Final Summary Report
25.	PRIOR TO ACCEPTANCE	CONTRACTOR	Affidavit of Disposal

**SPECIAL NOTICE
SMALL LOCAL BUSINESS ENTERPRISES (SLBE)
AND
EMERGING LOCAL BUSINESS ENTERPRISES (ELBE)
PROGRAM**

1. INTRODUCTION. This contract is subject to the requirements of the SLBE Program as specified in the SLBE-ELBE section of the City's EOCP Requirements included in The WHITEBOOK.

1.1. The Bidders are required to review The WHITEBOOK and become familiar with the detailed specifications including the required documentation and the submittal schedule as related to SLBE-ELBE program.

2. AMENDMENTS TO THE CITY'S GENERAL EOCP REQUIREMENTS.

III. Equal Employment Opportunity Outreach Program (A). DELETE in its entirety and **SUBSTITUTE** with the following:

A. Competitive Bids. If a contract is competitively solicited, the Apparent Low Bidder shall submit a *Work Force Report (Form BB05)* or an Equal Employment Opportunity (EEO) Plan, within 10 Working Days after receipt by the Bidder of Contract forms to the City for approval as specified in the Notice of Intent to Award letter from the City.

3. AMENDMENTS TO THE CITY'S EOCP SLBE-ELBE REQUIREMENTS.

VIII. Subcontracting Efforts Review and Evaluation (2b)). DELETE in its entirety and **SUBSTITUTE** with the following:

b) "Make information of forthcoming opportunities available to SLBE-ELBE firms and arrange time for contracts and establish delivery schedules, where requirements permit, in a way that encourages and facilitates participation by SLBE-ELBE firms in the competitive process. This includes posting solicitations for bids or proposals for a minimum of 10 Working Days before the Bid or Proposal due date."

VIII. Subcontracting Efforts Review and Evaluation (3) and (4). DELETE in its entirety and **SUBSTITUTE** with the following:

3. Good Faith Effort Documentation Requirements

If the stated SLBE-ELBE subcontractor participation percentages are not met, the Bidder shall submit, within 3 Working Days of the Bid opening, information necessary to establish adequate good faith efforts were taken to meet the contract subcontractor participation percentages. The required documentation includes the following:

A. ADVERTISEMENT REQUIREMENTS

Advertisements for subcontract work must comply with the following requirements:

1. Advertisements must be published at least 10 Working Days prior to bid opening. Provide the names and dates of each publication of where the advertisement was published.

Note: The advertisement is not required to be published everyday for the 10 Working Days prior to bid opening.

2. There must be at least 2 advertisements published, 1 advertisement in a trade publication and 1 in a focus group publication. Additional advertising for SLBE-ELBE participation may be placed in newspapers, trade papers and on the Internet. For a listing of publications accepting advertisements, please visit the City's EOC home page at <http://www.sandiego.gov/eoc/>

2.1. Newspaper advertisements must be in the Bids Wanted, Legal Notices section of the Classified Ads, Subcontracting Opportunities or Business Opportunities **NOT** the Employment Opportunities Section.

3. Advertisements must state which items or portions of work the Bidder is requesting subcontractor pricing.

3.1. It is the Bidder's responsibility to demonstrate that enough work sufficient to meet the SLBE-ELBE subcontractor participation percentage was made available to SLBE-ELBE firms. The Bidder shall make as many items of Work available as possible to meet specified subcontracting participation percentage and at a minimum an amount of work equal to the specified subcontracting participation amount. If necessary to reach the specified subcontracting participation percentage, the Work shall include those items normally performed by the Bidder with its own forces or supplies and even items with a dollar value below 1/2 of 1% of the total Bid. Bidders shall utilize Form AA60 to demonstrate compliance with this requirement and submit the completed form with Good Faith Effort documentation.

4. Advertisements must state that Plans and Specifications are available at no cost to interested SLBE-ELBE firms and how to obtain them.

5. Advertisements must state that assistance is available from the Bidder for SLBE-ELBE Subcontractors in obtaining necessary equipment, supplies, or materials.
6. Advertisements must state that assistance is available from the Bidder for SLBE-ELBE firms in obtaining bonding, lines of credit, or insurance.
7. Bidders MUST provide proof of publication of each advertisement by providing the publication affidavit which must include a legible copy of the entire advertisement and the original ENTIRE page of the publication in which the advertisement appears.

B. SLBE-ELBE WRITTEN SOLICITATION REQUIREMENTS

Bidders must directly solicit SLBE-ELBE firms on the City's approved SLBE-ELBE list. Solicitations for Subcontractor or Supplier work must comply with the following requirements:

1. The solicitation must be dated and list the name of the SLBE-ELBE firm. Solicitations must be made to the SLBE-ELBE firms at least 10 Working Days prior to bid opening.
2. Solicitation must state which items or portions of work the Bidder is requesting subcontractor pricing.
 - 2.1.** It is the Bidder's responsibility to demonstrate that enough work sufficient to meet the SLBE-ELBE subcontractor participation percentage was made available to SLBE-ELBE firms. The Bidder shall make as many items of Work available as possible to meet the specified subcontractor participation percentage and at a minimum an amount of work equal to the subcontractor participation amount. If necessary to reach the specified subcontracting participation percentage, the Work shall include those items normally performed by the Bidder with its own forces, supplies and even items with a dollar value below 1/2 of 1% of the total Bid. Bidders shall utilize Form AA60 to demonstrate compliance with this requirement and submit the completed form with Good Faith Effort documentation.
3. Solicitation must state that Plans and Specifications are available at no cost to interested SLBE-ELBE firms and how to obtain them.
4. Solicitations must state that assistance is available from the Bidder for SLBE-ELBE subcontractors in obtaining necessary equipment, supplies, or materials.

5. Solicitations must state that assistance is available from the Bidder for SLBE-ELBE firms in obtaining bonding, lines of credit, or insurance.
6. Bidder must solicit **ALL** SLBE-ELBE firms on the City's approved list, who have the NAICS code for the subcontract work sought by the Contractor.
7. Bidders must provide copies of **ALL** solicitations with one of the following forms of verification that the solicitations were sent:
 - a) If mailed: provide copies of the metered envelopes or certified mail receipts.
 - b) If faxed: provide copies of the fax transmittal confirmation sheet(s).
 - c) If emailed: provide copies of the email delivery confirmation sheet(s).

No credit shall be given for error messages, busy, cancelled, undeliverable, etc.

C. **SLBE-ELBE WRITTEN SOLICITATION FOLLOW-UP REQUIREMENTS**

Bidders must follow-up with all SLBE – ELBE firms that were notified of the subcontracting opportunities to determine their level of interest and commitment to bid the Project. When following up with the SLBE – ELBE firms, the Bidder must do the following:

1. Follow up communications must start no less than 5 Working Days prior to bid opening.
2. Bidders must follow up with all SLBE-ELBE firms in writing. Bidders must provide copies of **ALL** written follow up notices with one of the following forms of verification that the follow up notices were sent:
 - a) If mailed: provide copies of the metered envelopes or certified mail receipts.
 - b) If faxed: provide copies of the fax transmittal confirmation sheet(s).
 - c) If emailed: provide copies of the email delivery confirmation sheet(s).

No credit shall be given for error messages, busy, cancelled, undeliverable, etc.

3. Bidders must make at least 3 follow-up telephone calls to each SLBE – ELBE firm at least 5 days prior to bid opening date. Bidders must submit a telephone log as identified below.

- 3.1. Submit a telephone log, as proof of telephone call, with the following requirements: project name, name of person making the phone call, name of firm contacted, contact person's name, date of call, time of call, and details of conversation.

D. SUBCONTRACT AWARD SUMMARY

Bidders must act in good faith with interested SLBE-ELBE firms and may only reject bids for legitimate business reasons. The Bidder must submit the following documentation:

1. A **DETAILED** summary sheet which includes Bid item number, scope of work, Subcontractor or Supplier name, bid amount, certification type, Subcontractor or Supplier selection and reason for selection or non-selection of all the Subcontractor or Supplier that responded.
2. Copies of all Subcontractor or Suppliers bids received including bids for areas of work that were not included in the outreach and quotes from both certified and non-certified Subcontractors or Suppliers. Subcontractor bid amounts **MUST** match the bid-listed dollar amounts on form AA35 and AA40 submitted with Bidders sealed bid and the summary sheet dollar amounts **MUST** also match these amounts. If the Bidder decides to self-perform a scope of work, the Bidder **MUST** submit a detailed quote to show that the Bidder's price is competitive to the price of the subcontractors that responded to outreach efforts. All dollar amounts and scopes of work on the Subcontractor or Supplier bid must not be altered by the prime Bidder. If a revision is necessary, a revised quote must be obtained and provided. All verbal quotes **MUST** be substantiated by corresponding written quote from the Subcontractor or Supplier.

E. OUTREACH ASSISTANCE REQUIREMENTS

Written notice of subcontractor opportunities must be forwarded to local organizations or groups to assist with outreach efforts. When contacting local organizations or groups, the Bidder **must do** the following:

1. Contact a minimum of 5 local organizations or groups to provide assistance in contacting, recruiting and using SLBE-ELBE firms by written notice. For a listing of organizations or groups offering assistance, please visit the City's EOC home page at <http://www.sandiego.gov/eoc/>

2. Written notice must indicate the date of the notice and name of the local organization or group. Written notices must be forwarded to the organizations or groups at least 10 Working Days prior to bid opening.
3. Written notice must state which items or portions of work the Bidder is requesting subcontractor pricing.
 - 3.1. It is the Bidder's responsibility to demonstrate that enough work sufficient to meet the SLBE-ELBE subcontractor participation percentage was made available to SLBE-ELBE firms. The Bidder shall make as many items of Work available as possible to meet the subcontractor participation percentage, and at a minimum an amount of work equal to the subcontracting participation amount. If necessary to reach the subcontractor participation percentage, the work should include those items normally performed by the Bidder with its own forces, supplies and even items with a dollar value below 1/2 of 1% of the total bid. Bidders shall utilize Form AA60 to demonstrate compliance with this requirement and submit the completed form with Good Faith Effort documentation.
4. Written notice must state that Plans and Specifications are available at no cost to interested SLBE-ELBE firms and how to obtain them.
5. Written notice must state that assistance is available from the Bidder for SLBE-ELBE Subcontractors in obtaining necessary equipment, supplies, or materials.
6. Written notice must state that assistance is available from the Bidder for SLBE-ELBE firms in obtaining bonding, lines of credit, or insurance.
7. Bidders must provide copies of **ALL** notices with one of the following forms of verification that the notices were sent:
 - a) If mailed: provide copies of the metered envelopes or certified mail receipts.
 - b) If faxed: provide copies of the fax transmittal confirmation sheet(s).
 - c) If emailed: provide copies of the email delivery confirmation sheet(s)..

No credit shall be given for error messages, busy, cancelled, undeliverable, etc.

4. **SUBCONTRACTING PARTICIPATION PERCENTAGES.** The Bidders are encouraged to take positive steps to diversify and expand their subcontractor solicitation base and to offer contracting opportunities to all certified SLBE and ELBE Subcontractors.
- 4.1. The City has incorporated **mandatory** SLBE-ELBE subcontractor participation percentages to enhance competition and maximize subcontracting opportunities. For the purpose of achieving the mandatory subcontractor participation percentages, a recommended breakdown of the SLBE and ELBE subcontractor participation percentages based upon certified SLBE and ELBE firms has also been provided to achieve the mandatory subcontractor participation percentages:
- | | |
|----------------------------------|-------------|
| 1. SLBE participation | 0.7% |
| 2. ELBE participation | 1.4% |
| 3. Total mandatory participation | 2.1% |
- 4.2. For the purpose of achieving the subcontractor participation level (percentage), Additive, Deductive, and Allowance Bid Items will not be included in the calculation.
5. **PRE-BID CONFERENCE.** A Pre-Bid Conference is scheduled for this contract as specified in the Invitation to Bids. The purpose of this meeting is to inform Bidders of the submittal requirements and provisions relative to the SLBE Program. Bidders are strongly encouraged to attend the Pre-Bid Conference to better understand the Good Faith Effort requirements of this contract.
6. **MANDATORY CONDITIONS.** Bid will be declared **non-responsive** if the Bidder fails the following mandatory conditions.
- 6.1. Bidder's inclusion of SLBE-ELBE certified subcontractors at the overall mandatory participation percentage identified in this document; **OR**
- 6.2. Bidder's submission of Good Faith Effort documentation demonstrating the Bidder made a good faith effort to outreach to and include SLBE-ELBE Subcontractors required in this document within 3 Working Day of the Bid opening if the overall mandatory participation percentage is not met.
7. **BID DISCOUNT.** This contract **is not** subject to the Bid Discount program as described in The WHITEBOOK, SLBE-ELBE Program Requirements, Section IV(2).
8. **RESOURCES.** The current list of certified SLBE-ELBE firms can be found on the EOC Department website.

CITY OF SAN DIEGO, CALIFORNIA

INVITATION TO BIDS

1. **RECEIPT AND OPENING OF BIDS:** Bid(s) will be received at the Public Works Contracting Group at **1200 THIRD AVENUE, SUITE 200, SAN DIEGO, CA 92101 UNTIL 2:00 PM ON MAY 10th, 2012** for performing work on the following project (Project):

POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES

2. **DESCRIPTION OF WORK:** The Work involves furnishing all labor, materials, equipment, services, and other incidental works and appurtenances for the construction of the Project as described below:

Installation of new AC units, Transformers, UPS, ATS, Fire Sprinkler System, Generator, and Fire Alarm Panel; Removal and replacement of all rest room fixtures, ADA barrier removal; installation of new automatic telescoping doors.

The Work shall be performed in accordance with:

- Bid No. **K-12-5548-DBB-3-C** and Plans numbered **36392-1-D** through **36392-66-D**, inclusive.
3. **ENGINEER'S ESTIMATE:** The Engineer's estimate of the most probable price for this contract is **\$1,000,001 to \$2,000,000**.
 4. **LOCATION OF WORK:** The location of Work is Citywide unless specified otherwise as follows:
1401 Broadway, San Diego, CA, 92101-5710
 5. **CONTRACT TIME:** The Contract Time for completion of the Work shall be **120 Working Days**.
 6. **CONTRACTOR'S LICENSE CLASSIFICATION:** In accordance with the provisions of California Law, the Contractor shall possess valid appropriate license(s) at the time that the Bid is submitted. Failure to possess the specified license(s) shall render the Bid as non-responsive and shall act as a bar to award of the Contract to any Bidder not possessing required license(s) at the time of Bid.

The City has determined the following licensing classification for this contract:

- **CLASS B**

7. **PRE-BID CONFERENCE:** There will be a Pre-Bid Conference to discuss the scope of the Project, bidding requirements, and Equal Opportunity Contracting Program requirements and reporting procedures in the Public Works Contracting Group, Conference Room at 1200 Third Avenue, Suite 200, San Diego, CA 92101 at **10:00 A.M., on APRIL 19th, 2012.**

The Pre-Bid Conference has been designated as MANDATORY. All potential bidders are required to attend. Bid will be declared **non-responsive** if the Bidder fails to attend the Pre-Bid Conference when specified to be mandatory. Attendance at the Pre-Bid Conference will be evidenced by the representative's signature on the attendance roster. It shall be the responsibility of the Bidder's representative to complete and sign the attendance roster. No Bidder will be admitted after the official start time of the mandatory Pre-Bid Conference.

To request a copy of the agenda on an alternative format, or to request a sign language or oral interpreter for this meeting, call the Public Works Contracting Group at (619)236-6000 at least 5 Working Days prior to the Pre-Bid Conference to ensure availability.

8. **CITY PROJECT MANAGER CONTACT INFORMATION:**

See the cover of the Contract Documents.

9. **REFERENCE STANDARDS:** Except as otherwise noted or specified, the Work shall be completed in accordance with the following standards which are on file in the office of the Engineering & Capital Projects Department:

1. STANDARD SPECIFICATIONS

Document No.	Filed	Description
PITS0504091	05-04-09	Standard Specifications for Public Works Construction (The GREENBOOK), 2009 Edition
PITS090110-1	09-01-10	City of San Diego Standard Specifications for Public Works Construction (The WHITEBOOK), 2010 Update *
AEC1231064	12-31-06	California Department of Transportation, Manual of Uniform Traffic Control Devices (MUTCD 2006)
769023	09-11-84	Standard Federal Equal Employment Opportunity Construction Contract Specifications and the Equal Opportunity Clause

NOTE: The City of San Diego Supplement, 2010 Update now consolidates various City Public Works Construction Standard Specifications which in the past were included in the Supplementary Special Provisions. The Bidders' attention is directed to this edition of the City Supplement for a close review to ensure no important information is missed for the preparation of the Bids.

2. STANDARD DRAWINGS

Document No.	Filed	Description
AEC1230163	12-31-06	City of San Diego Standard Drawings*
N/A	Varies	City Standard Drawings - Updates Approved For Use (when specified)*
AEC0925061	09-25-06	Caltrans 2006 U.S. Customary Unit Standard Plans

NOTE: *Available online under Engineering Documents and References at: <http://www.sandiego.gov/engineering-cip>.

10. WAGE RATES: Prevailing wages are not applicable to this project unless specified otherwise on the cover page of these specifications and when included in these specifications. See Funding Agency Provisions that follow this Invitation to Bid for more information.

11. PRE-BID SITE VISIT: The prospective Bidders are **REQUIRED** to visit the Work Site with the Engineer. The purpose of the Site visit is to acquaint Bidders with the Site conditions. To request a sign language or oral interpreter for this visit, call the Public Works Contracting Group at (619) 236-6000 at least 5 Working Days prior to the meeting to ensure availability. A Pre-Bid Site Visit is offered when the details are provided as follows:

Time: 1:30 P.M.
Date: APRIL 19th, 2012
Location: 1401 Broadway, San Diego, CA 92101-5710

12. INSURANCE REQUIREMENTS: Upon receipt of the City's Notice of Intent to Award letter, the Contractor will be asked to submit all certificates of insurance and endorsements to the City.

Refer to sections 7-3, "LIABILITY INSURANCE", and 7-4, "WORKERS' COMPENSATION INSURANCE" of the Supplementary Special Provisions (SSP) for the insurance requirements which must be met.

You must ensure all required insurance certificates and endorsements are submitted accurately and on time. Failure to provide the requisite insurance documents by the date stated in the City's Notice of Intent to Award will result in delay of contract award and may result in annulment of the contract award or other more severe sanctions as provided in the City's Municipal Code §22.0807(e),(3)-(5).

Tony Heinrichs
Director
Public Works Department

INSTRUCTIONS TO BIDDERS

- 1. PREQUALIFICATION OF CONTRACTORS:** The contractor(s) who intend to submit Bid or Proposal in response to this invitation to bid, or RFP's for GRC or As-Needed Design-Build Task Orders valued over \$50,000, must be pre-qualified for the total amount proposed, inclusive of all alternate bid items or the specified Task Order limits prior to the date of Bid submittal.

Bids from contractors who have not been pre-qualified as applicable, and Bids that exceed the maximum dollar amount at which contractors are pre-qualified, will be deemed **non-responsive** and ineligible for award or a Task Order authorization. Complete information and prequalification questionnaires are available at:

<http://www.sandiego.gov/engineering-cip/services/consultcontract/prequal.shtml>

The completed questionnaire, financial statement, and bond letter or a copy of the contractor's SLBE-ELBE certification and bond letter, must be submitted no later than 2 weeks prior to the bid opening to the Public Works Department, Engineering & Capital Projects, Prequalification Program, 1010 Second Avenue, Suite 1200, San Diego, CA 92101. For additional information or the answer to questions about the prequalification program, please contact David Stucky at 619-533-3474 or dstucky@sandiego.gov.

- 2. CONTRACTOR REGISTRATION:** Prospective bidder(s) as well as existing contractors and suppliers are required to register with the City's EOCP. Refer to 2-17, "CONTRACTOR REGISTRATION" for details.
- 3. CITY'S RESPONSES AND ADDENDA:** The City at its option, may respond to any or all questions submitted in writing, via letter, or FAX in the form of an addendum. No oral comment shall be of any force or effect with respect to this solicitation. The changes to the Contract Documents through addendum are made effective as though originally issued with the Bid. The Bidders shall acknowledge the receipt of Addenda on the form provided for this purpose in the Bid.
- 4. CITY'S RIGHTS RESERVED:** The City reserves the right to cancel the Invitation to Bids at any time, and further reserves the right to reject submitted Bids, without giving any reason for such action, at its sole discretion and without liability. Costs incurred by the Bidder(s) as a result of preparing Bids under the Invitation to Bid shall be the sole responsibility of each bidder. The Invitation to Bid creates or imposes no obligation upon the City to enter a contract.
- 5. CONTRACT PRICING FORMAT:** This solicitation is for a Lump Sum contract with Unit Price provisions as set forth in the Bid Proposal Form(s), Volume 2 unless specified otherwise such as as-needed contracts e.g., GRC in the Contract Documents.
- 6. SUBMITTAL OF "OR EQUAL" ITEMS:** See 4-1.6, "Trade Names or Equals."
- 7. AWARD PROCESS:** The Award of this contract is contingent upon the Contractor's compliance with all conditions precedent to Award, including the submittal of acceptable insurance and surety bonds pursuant to San Diego Municipal Code § 22.3007. If the responsible Bid does not exceed the City's engineering estimate, the City will, in most cases, prepare contract documents for execution within 3 weeks of the date of the Bid opening and award the Contract within 5 Working Days of receipt of properly executed Contract, bond, and insurance documents.

This contract is deemed to be awarded, and effective, only upon the signing of the Contract by the Mayor or designee of the City.

- 8. SUBCONTRACT LIMITATIONS:** The Bidder's attention is directed to Standard Specifications for Public Works Construction, Section 2-3, "SUBCONTRACTS" which requires the Contractor to perform not less than the amount therein stipulated with its own forces. Failure to comply with these requirements may render the Bid **non-responsive** and ineligible for award.
- 9. AVAILABILITY OF PLANS AND SPECIFICATIONS:** Contract Documents may be obtained by visiting the City's website: <http://www.sandiego.gov/engineering-cip/services/consultcontract/advertising.shtml>. Plans and Specifications for this contract are also available for review in the office of the City Clerk or Public Works Contracting Group.
- 10. QUESTIONS:** Questions about the meaning or intent of the Contract Documents as related to the scope of Work and of technical nature shall be directed to the Project Manager prior to Bid opening. Interpretations or clarifications considered necessary by the Project Manager in response to such questions will be issued by Addenda, which will be uploaded to eBidboard (or mailed or delivered to all parties recorded by the City as having received the Contract Documents for Minor Construction contracts).

The Director (or designee), Public Works Department is the officer responsible for opening, examining, and declaring of competitive Bids submitted to the City for the acquisition, construction and completion of any public improvement except when otherwise set forth in these documents. Questions in these areas of responsibility (e.g., i.e. Pre-qualification, SCOPE information, bidding activities, bonds and insurance, etc. as related to this contract shall be addressed to the Contract Administration, Public Works Contracting Group, 1200 Third Avenue, Suite 200, San Diego, California, 92101, Telephone No. (619) 236-6000.

Questions received less than 14 days prior to the date for opening of Bids may not be answered. Only questions answered by formal written addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. It is the Bidder's responsibility to become informed of any addenda that have been issued and to include all such information in its Bid.

- 11. ELIGIBLE BIDDERS:** No person, firm, or corporation shall be allowed to make, file, or be interested in more than 1 Bid for the same work unless alternate Bids are called for. A person, firm or corporation who has submitted a sub-proposal to a Bidder, or who has quoted prices on materials to a Bidder, is not hereby disqualified from submitting a sub-proposal or quoting prices to other Bidders or from submitting a Bid in its own behalf.
- 12. SAN DIEGO BUSINESS TAX CERTIFICATE:** All Contractors, including Subcontractors, not already having a City of San Diego Business Tax Certificate for the work contemplated shall secure the appropriate certificate from the City Treasurer, Civic Center Plaza, first floor, before the Contract can be executed.
- 13. PROPOSAL FORMS:** Bid shall be made only upon the Bidding Documents i.e., Proposal form attached to and forming a part of the specifications. The signature of each person signing shall be in longhand.

The entire specifications for the bid package do not need to be submitted with the bid. Bidder shall complete and submit, only, all pages in the "Bidding Document" Section (see Volume 2) as their Bid per the schedule given under "Required Documents Schedule," (see Volume 1). Bidder is requested to retain for their reference other portions of the Contract Documents that are not required to be submitted with the Bid.

The City may require any Bidder to furnish a statement of experience, financial responsibility, technical ability, equipment, and references.

Bids and certain other specified forms and documents shall be enclosed in a sealed envelope and shall bear the title of the work and name of the Bidder and the appropriate State Contractors License designation which the Bidder holds.

Bids may be withdrawn by the Bidder prior to, but not after, the time fixed for opening of Bids.

14. BIDDERS' GUARANTEE OF GOOD FAITH (BID SECURITY):

With the exception of the contracts valued \$5,000 or less, GRC and Design-Build contracts, and contracts subject to the Small and Local Business Program of \$250,000 or less e.g., ELBE contracts, each Bidder shall accompany its Bid with either a cashier's check upon some responsible bank, or a check upon such bank properly certified or an approved corporate surety bond payable to the City of San Diego, for an amount of not less than 10% of the aggregate sum of the Bid, which check or bond, and the monies represented thereby shall be held by the City as a guarantee that the Bidder, if awarded the contract, will in good faith enter into such contract and furnish the required final bonds.

The Bidder agrees that in case of Bidder's refusal or failure to execute this contract and give required final bonds, the money represented by a cashier's or certified check shall remain the property of the City, and if the Bidder shall fail to execute this contract, the Surety agrees that it will pay to the City damages which the City may suffer by reason of such failure, not exceeding the sum of 10% of the amount of the Bid.

A Bid received without the specified bid security will be rejected as being **non-responsive**.

15. AWARD OF CONTRACT OR REJECTION OF BIDS:

This contract may be awarded to the lowest responsible and reliable Bidder (for Design-Build contracts refer to the RFP for the selection and award information). Bidders shall complete the entire Bid schedule (e.g., schedule of prices). Incomplete price schedules will be rejected as being **non-responsive**.

The City reserves the right to reject any or all Bids, and to waive any informality or technicality in Bids received and any requirements of these specifications as to bidding procedure.

Bidders will not be released on account of their errors of judgment. Bidders may be released only upon receipt by the City from the Bidder within 3 Working Days, excluding Saturdays, Sundays, and state holidays, after the opening of Bids, of written notice which includes proof of honest, credible, clerical error of material nature, free from fraud or fraudulent intent, and of evidence that reasonable care was observed in the preparation of the Bid.

A non-selected Bidder may protest award of the Contract to the selected Bidder by submitting a written "Notice of Intent to Protest" including supporting documentation which shall be received by Public Works Contracting Group no later than 10 days after the City's announcement of the selected Bidder or no later than 10 days from the date that the City issues notice of designation of a Bidder as non-responsible in accordance with San Diego Municipal Code Chapter 2, § 22.3029, "Protests of Contract Award."

The City of San Diego will not discriminate with regard to race, religious creed, color, national origin, ancestry, physical handicap, marital status, sex or age, in the award of contracts.

Each Bid package properly executed as required by these specifications shall constitute a firm offer, which may be accepted by the City within the time specified in the Invitation to Bids.

The City reserves the right to evaluate all Bids and determine the lowest Bidder (or winner for Design-Build contracts) on the basis of any proposed alternates, additive items or options, at its discretion.

- 16. BID RESULTS:** The Bid opening by the City shall constitute the public announcement of the Apparent Low Bidder (or Apparent Winner in case of Design-Build contracts). In the event that the Apparent Low Bidder (or Apparent Winner in case of Design-Build contracts) is subsequently deemed non-responsive or non-responsible, a public announcement will be posted in the City's web page, with the name of the newly designated Apparent Low Bidder (or Apparent Winner in case of Design-Build contracts).

To obtain Bid results, either attend Bid opening, review the results on the City's web site, or provide a self-addressed, stamped envelope, referencing Bid number, and Bid tabulation will be mailed to you upon verification of extensions. Due to time constraints, Bid results cannot be given out over the telephone.

- 17. THE CONTRACT:** The Bidder to whom award is made shall execute a written contract with the City of San Diego and furnish good and approved bonds and insurance certificates specified by the City within 10 Working Days after receipt by Bidder of a form of contract for execution unless an extension of time is granted to the Bidder in writing.

If the Bidder takes longer than 10 Working Days to fulfill these requirements, then the additional time taken shall be added to the Bid guarantee. The Contract shall be made in the form adopted by the City, which includes the provision that no claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.

If the Bidder to whom the award is made fails to enter into the contract as herein provided, the award may be annulled and the Bidder's Guarantee of Good Faith will be subject to forfeiture. An award may be made to the next lowest responsible and reliable Bidder who shall fulfill every stipulation embraced herein as if it were the party to whom the first award was made.

For contracts that are not Design-Build, pursuant to the San Diego City Charter section 94, the City may only award a public works contract to the lowest responsible and reliable Bidder. The City will require the Apparent Low Bidder to (i) submit information to determine the Bidder's responsibility and reliability, (ii) execute the Contract in form provided by the City, and (iii) furnish good and approved bonds and insurance certificates specified by the City within 10

Working Days, unless otherwise approved by the City, in writing after the Bidder receives notification from the City, designating the Bidder as the Apparent Low Bidder and formally requesting the above mentioned items.

The award of the Contract is contingent upon the satisfactory completion of the above mentioned items and becomes effective upon the signing of the Contract by the Mayor or designee. If the Apparent Low Bidder does not execute the Contract or submit required documents and information, the City may award the Contract to the next lowest responsible and reliable Bidder who shall fulfill every condition precedent to award. A corporation designated as the Apparent Low Bidder shall furnish evidence of its corporate existence and evidence that the officer signing the Contract and bond for the corporation is duly authorized to do so.

18. EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK: The Bidder shall examine carefully the Project Site, the Plans and Specifications, the GRC Unit Price Books if applicable, other materials as described in the Special Provisions, Section 2-7, and the proposal forms (e.g., Bidding Documents) therefore. The submission of a Bid or GRC Task Order Proposal shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of Work, the quantities of materials to be furnished, and as to the requirements of the Bidding Documents Proposal, Plans, and Specifications.

19. DRUG-FREE WORKPLACE:

a) General:

City projects are subject to City of San Diego Resolution No. R-277952 adopted on May 20, 1991. Bidders shall become aware of the provisions of Council Policy 100-17 which was established by Resolution No. R-277952. The policy applies equally to the Contractor and Subcontractors. The elements of the policy are outlined below.

b) Definitions:

"Drug-free workplace" means a site for the performance of work done in connection with a contract let by City of San Diego for the construction, maintenance, or repair of any facility or public work by an entity at which employees of the entity are prohibited from engaging in the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance in accordance with the requirements of this section.

"Employee" means the employee of a contractor directly engaged in the performance of work pursuant to a contract as described in Section 3, "City Contractor Requirements."

"Controlled substance" means a controlled substance in schedules I through V of Section 202 of the Controlled Substances Act (21 U.S.C. Sec. 812).

"Contractor" means the department, division, or other unit of a person or organization responsible to the contractor for the performance of a portion of the work under the contract.

c) City Contractor Requirements:

Every person or organization awarded a contract or grant by the City of San Diego for the provision of services shall certify to the City that it will provide a drug-free workplace by doing all following:

- a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person's organization's workplace and specifying the actions that will be taken against employees for violations of the prohibition.
- b. Establishing a drug-free awareness program to inform employees about all of the following:
 - i. The dangers of drug abuse in the workplace.
 - ii. The person's or organization's policy of maintaining a drug-free workplace.
 - iii. Any available drug counseling, rehabilitation, and employee assistance programs.
 - iv. The penalties that may be imposed upon employees for drug abuse violations.
- c. Posting the statement required by subdivision (1) in a prominent place at contractor's main office. For projects large enough to necessitate a construction trailer at the job site, the required signage would also be posted at the Site.

The Contractor shall include in each subcontract agreement language which indicates the Subcontractor's agreement to abide by the provisions of subdivisions a) through c) above. The Contractors and Subcontractors shall be individually responsible for their own drug-free workplace programs.

Note: The requirements of a drug-free awareness program can be satisfied by periodic tailgate sessions covering the various aspects of drug-abuse education. Although an in-house employee assistance program is not required, contractors should be able to provide a listing of drug rehabilitation and counseling programs available in the community at large.

Questions about the City's Drug-free Workplace Policy shall be referred to the Contract Specialist, Public Works Contracting Group.

20. AMERICANS WITH DISABILITIES ACT:

- a) General: City projects are subject to City of San Diego Resolution No. R-282153 adopted on June 14, 1993. The Bidders shall become aware of the provisions of Council Policy 100-04 which was established by Resolution No. R-282153. The policy applies equally to the Contractor and all Subcontractors. The elements of the policy are outlined below.

b) Definitions:

"Qualified individual with a disability" means an individual with a disability who satisfies the requisite skill, experience, education and other job-related requirements of the employment position such individual holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position.

"Employee" means the employee of the Contractor directly engaged in the performance of Work.

- c) The City Requirements: Every person or organization entering into a contractual agreement with or receiving a grant from the City of San Diego shall certify to the City of San Diego that it will comply with the ADA by adhering to all of the provisions of the ADA listed below.
- i. The Contractor shall not discriminate against qualified persons with disabilities in any aspects of employment, including recruitment, hiring, promotions, conditions and privileges of employment, training, compensation, benefits, discipline, layoffs, and termination of employment.
 - ii. No qualified individual with a disability may be excluded on the basis of disability, from participation in, or be denied the benefits of services, programs, or activities by the Contractor or Subcontractors providing services for the City.
 - iii. The Contractor shall post a statement addressing the requirements of the ADA in a prominent place at the worksite. The Contractor shall include in each subcontract agreement, language which indicates the Subcontractor's agreement to abide by the provisions of subdivisions (a) through (c) inclusive of Section 3. The Contractor and Subcontractors shall be individually responsible for their own ADA employment programs. Questions about the City's ADA Policy should be referred to the Contract Administrator.

21. CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE: This contract is subject to City of San Diego Municipal Code §22.3224 as amended 11/24/08 by ordinance O-19808. Bidders shall become aware that the requirements apply to Contractors and Subcontractors for contracts greater than \$50,000 in value.

Upon award, amendment, renewal, or extension of this contract, the Contractors shall complete a Pledge of Compliance attesting under penalty of perjury that they complied with the requirements of this section.

The Contractors shall ensure that their Subcontractors whose subcontracts are greater than \$50,000 in value complete a Pledge of Compliance attesting under penalty of perjury that they complied with the requirements of this section. Subcontractors may access the Pledge of Compliance at:

http://www.sandiego.gov/purchasing/pdf/contractor_standards_questionnaire.pdf.

The Contractors shall include in each subcontract agreement, language which requires Subcontractors to abide by the provisions of City of San Diego Municipal Code §22.3224. A sample provision is as follows:

“Compliance with San Diego Municipal Code §22.3224: Subcontractor acknowledges that it is familiar with the requirements of San Diego Municipal Code §22.3224 (“Contractor Standards”), and agrees to comply with

requirements of that section. The Subcontractor further agrees to complete the Pledge of Compliance, incorporated herein by reference.”

- 22. NOTICE OF LABOR COMPLIANCE PROGRAM APPROVAL:** The City of San Diego received initial approval as a Labor Compliance Program on August 11, 2003. The Labor Compliance Program Manual is available at:

<http://www.sandiego.gov/eoc/laborcompliance/#manual>.

The limited exemption from prevailing wages pursuant to Labor Code §1771.5(a) does not apply to contracts under jurisdiction of the Labor Compliance Program. Inquiries, questions, or assistance about the Labor Compliance Program should be directed to: Equal Opportunity Contracting Program, 1200 Third Ave., Suite 200 MS56P, San Diego, CA 92101, Tel. 619-236-6000.

- 23. PAYROLL RECORDS:** The Contractor's attention is directed to the City of San Diego Labor Compliance Program, Section IV, pages 4-7, and the State of California Labor Code §§ 1771.5(b) and 1776 (Stats. 1978, Ch. 1249). These require, in part, that the Contractor and Subcontractors maintain and furnish to the City, at a designated time, a certified copy of each weekly payroll containing a statement of compliance signed under penalty of perjury.

The Contractor and Subcontractors shall submit weekly certified payrolls online via Prism® i.e., the City’s web-based labor compliance program. Instructions on how to use the system will be provided to the Contractor after the award.

The Contractor shall be responsible for the compliance with these provisions by Subcontractors. The City shall withhold contract payments when payroll records are delinquent or inadequate, or when it is established after investigation that underpayment has occurred.

- 24. APPRENTICES ON PUBLIC WORKS:** The Contractor shall abide by the requirements of §§1777.5, 1777.6, and 1777.7 of the State of California Labor Code concerning the employment of apprentices by contractors and subcontractors performing public works contracts.

- 25. EQUAL BENEFITS:** This contract is subject to the City’s Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of the San Diego Municipal Code (SDMC).

In accordance with the EBO, Bidders shall certify they will provide and maintain equal benefits as defined in SDMC §22.4302 for the duration of the Contract (SDMC §22.4304(f)). Failure to maintain equal benefits is a material breach of the Contract (SDMC §22.4304(e)). The Contractor shall notify employees of their equal benefits policy at the time of hire and during open enrollment periods and shall post a copy of the following statement in an area frequented by employees:

“During the performance of a contract with the City of San Diego, this employer will provide equal benefits to its employees with spouses and its employees with domestic partners.”

The Contractor shall give the City access to documents and records sufficient for the City to verify the contractors are providing equal benefits and otherwise complying with EBO requirements.

Full text of the EBO and the Rules Implementing the Equal Benefits Ordinance are posted on the City's website at www.sandiego.gov/purchasing/ or can be requested from the Equal Benefits Program at (619) 533-3948.

26. LIMITED COMPETITION: When designated as restricted competition on the cover page, this contract may only be bid by the Contractors on the approved SLBE-ELBE Construction Contractors List. For information regarding the SLBE-ELBE Construction Program and registration visit the City's web site at: <http://www.sandiego.gov>.

27. PRE-AWARD ACTIVITIES:

Pre-award Submittals - The Apparent Low Bidder (or winner in case of Design-Build contracts) shall provide the information required within the time specified in "Required Documents," of this bid package. Failure to provide the information within the time specified may result in the Bid being rejected as **non-responsive**.

If the Bid is rejected as non-responsive, the Apparent Low Bidder (or winner in case of Design-Build contracts) shall forfeit the Bid Security required under Invitation to Bids, of this bid package. The decision that the Apparent Low Bidder (or winner in case of Design-Build contracts) is non-responsive for failure to provide the information required within the time specified shall be at the sole discretion of the City.

CONTRACT FORMS AGREEMENT

CONSTRUCTION CONTRACT

This contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and EC CONSTRUCTORS, INC., herein called "Contractor" for construction of **Police Headquarters Electrical, Plumbing, Door Upgrades**; Bid No. **K-12-5548-DBB-3-C**; in the amount of **ONE MILLION FIVE HUNDRED SEVENTEEN THOUSAND FIVE HUNDRED TWENTY TWO DOLLARS AND 00/100 (\$1,517,522.00)**, which is comprised of the Base Bid alone.

IN CONSIDERATION of the payments to be made hereunder and the mutual undertakings of the parties hereto, City and Contractor agree as follows:

1. The following are incorporated into this contract as though fully set forth herein:
 - (a) The attached Faithful Performance and Payment Bonds.
 - (b) The attached Proposal included in the Bid documents by the Contractor.
 - (c) That certain documents entitled **Police Headquarters Electrical, Plumbing, Door Upgrades**, on file in the office of the City Clerk as Document No. **B-10008/B-00952/B-10010**, as well as all matters referenced therein.
2. Contractor shall perform and be bound by all the terms and conditions of this contract and in strict conformity therewith shall perform and complete in a good and workmanlike manner Project Title, **Police Headquarters Electrical, Plumbing, Door Upgrades**, Bid Number **K-12-5548-DBB-3-C**, San Diego, California.
3. For such performances, the City shall pay to Contractor the amounts set forth at the times and in the manner and with such additions or deductions as are provided for in this contract, and Contractor shall accept such payment in full satisfaction of all claims incident to such performances.
4. No claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.
5. This contract is effective as of the date that the Mayor or designee signs the agreement.

**CONTRACT FORMS (continued)
AGREEMENT**

IN WITNESS WHEREOF, this agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Resolution No. R - 307689 or Municipal Code 22.3102 authorizing such execution.

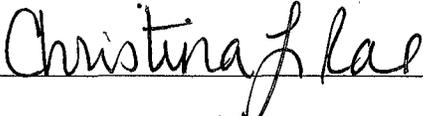
THE CITY OF SAN DIEGO

APPROVED AS TO FORM AND LEGALITY

Jan I. Goldsmith, City Attorney

By: 

Bob Filner
Mayor

By: 

Print Name: Christina L. Rae

Deputy City Attorney

Date: 12-17-12

Date: 12/17/12

CONTRACTOR

By: 

For EC Constructors, Inc.

Print Name: Sherri L. Summers

Title: CEO

Date: 10-9-12

City of San Diego License No.: 2012044182

State Contractor's License No.: 585677

Issued in Triplicate.

CONTRACT FORMS (continued)
PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:

EC CONSTRUCTORS, INC., a corporation, as principal, and Hartford Fire Insurance Company, a corporation authorized to do business in the State of California, as Surety, hereby obligate themselves, their successors and assigns, jointly and severally, to The City of San Diego a municipal corporation in the sum of ONE MILLION FIVE HUNDRED SEVENTEEN THOUSAND FIVE HUNDRED TWENTY TWO DOLLARS AND 00/100 (\$1,517,522.00) for the faithful performance of the annexed contract, and in the sum of ONE MILLION FIVE HUNDRED SEVENTEEN THOUSAND FIVE HUNDRED TWENTY TWO DOLLARS AND 00/100 (\$1,517,522.00) for the benefit of laborers and materialmen designated below.

Conditions:

If the Principal shall faithfully perform the annexed contract **Police Headquarters Electrical, Plumbing, Door Upgrades**, Bid Number **K-12-5548-DBB-3-C**, San Diego, California then the obligation herein with respect to a faithful performance shall be void; otherwise it shall remain in full force.

If the Principal shall promptly pay all persons, firms and corporations furnishing materials for or performing labor in the execution of this contract, and shall pay all amounts due under the California Unemployment Insurance Act then the obligation herein with respect to laborers and materialmen shall be void; otherwise it shall remain in full force.

The obligation herein with respect to laborers and materialmen shall inure to the benefit of all persons, firms and corporations entitled to file claims under the provisions of Chapter 3 of Division 5 of Title I of the Government Code of the State of California or under the provisions of Section 3082 et seq. of the Civil Code of the State of California.

Changes in the terms of the annexed contract or specifications accompanying same or referred to therein shall not affect the Surety's obligation on this bond, and the Surety hereby waives notice of same.

CONTRACT FORMS (continued)
PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND

The Surety shall pay reasonable attorney's fees should suit be brought to enforce the provisions of this bond.

Dated October 9th, 2012

Approved as to Form and Legality

EC Constructors, Inc.

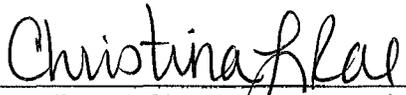
Principal

By 

Sherri L. Summers, CEO

Printed Name of Person Signing for Principal

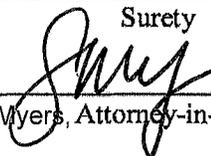
Jan I. Goldsmith, City Attorney

By 
Deputy City Attorney

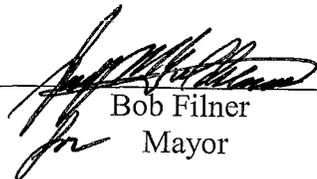
12/17/12

Hartford Fire Insurance Company

Surety

By 
Sarah Myers, Attorney-in-fact

Approved:

By: 
Bob Filner
Mayor

One Pointe Drive / P.O. Box 2333

Local Address of Surety

Brea, CA 92821-2333

Local Address (City, State) of Surety

(714) 674-1223

Local Telephone No. of Surety

Premium \$ 17,892.00

Bond No. 72BCSG19825

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA

County of San Diego }

On OCT 09 2012 before me, Jennifer L. Cox, Notary Public,
Date Insert Name of Notary exactly as it appears on the official seal

personally appeared Sarah Myers
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~it~~/~~we~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.



I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature Jennifer L. Cox
Signature of Notary Public Jennifer L. Cox

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of the form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer is Representing:

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer is Representing:

POWER OF ATTORNEY

Direct Inquiries/Claims to:

THE HARTFORD
BOND, T-4
One Hartford Plaza
Hartford, Connecticut 06155

call: 888-266-3488 or fax: 860-757-5835

KNOW ALL PERSONS BY THESE PRESENTS THAT:

Agency Code: 72-160200

- Hartford Fire Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- Hartford Casualty Insurance Company, a corporation duly organized under the laws of the State of Indiana
- Hartford Accident and Indemnity Company, a corporation duly organized under the laws of the State of Connecticut
- Hartford Underwriters Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- Twin City Fire Insurance Company, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of Illinois, a corporation duly organized under the laws of the State of Illinois
- Hartford Insurance Company of the Midwest, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of the Southeast, a corporation duly organized under the laws of the State of Florida

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, **up to the amount of unlimited:**

Lawrence F. McMahon, James Baldassare Jr., Sarah Myers, Maria Guise, Lilia Robinson, Charlotte Aquino
of
San Diego, CA

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by , and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on January 22, 2004 the Companies have caused these presents to be signed by its Assistant Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



Scott Sadowsky

Scott Sadowsky, Assistant Secretary

M. Ross Fisher

M. Ross Fisher, Assistant Vice President

STATE OF CONNECTICUT }
COUNTY OF HARTFORD } ss. Hartford

On this 3rd day of March, 2008, before me personally came M. Ross Fisher, to me known, who being by me duly sworn, did depose and say: that he resides in the County of Hartford, State of Connecticut; that he is the Assistant Vice President of the Companies, the corporations described in and which executed the above instrument; that he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that he signed his name thereto by like authority.



CERTIFICATE

Scott E. Paseka

Scott E. Paseka
Notary Public
My Commission Expires October 31, 2012

I, the undersigned, Assistant Vice President of the Companies, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is still in full force effective as of October 9, 2012

Signed and sealed at the City of Hartford.



Gary W. Stumper

Gary W. Stumper, Assistant Vice President

CONTRACTOR CERTIFICATION

AMERICAN WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

PROJECT TITLE: POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-4 regarding the American With Disabilities Act (ADA) outlined in the INSTRUCTION TO BIDDERS, "American With Disabilities Act", of the project specifications, and that;

EC Constructors, Inc.

(Name under which business is conducted)

has in place workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of the policy as outlined.

Signed *Sherri L. Summers*

Printed Name Sherri L. Summers

Title CEO

CONTRACTOR CERTIFICATION

CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

PROJECT TITLE: POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES

I declare under penalty of perjury that I am authorized to make this certification on behalf of EC Constructors, Inc., as Contractor, that I am familiar with the requirements of City of San Diego Municipal Code § 22.3224 regarding Contractor Standards as outlined in INSTRUCTION TO BIDDERS ("Contractor Standards"), of the project specifications, and that Contractor has complied with those requirements.

I further certify that each of the Contractor's subcontractors whose subcontracts are greater than \$50,000 in value has completed a Pledge of Compliance attesting under penalty of perjury of having complied with City of San Diego Municipal Code § 22.3224.

Dated this 9th Day of October, 2012.

Signed 

Printed Name Sherri L. Summers

Title CEO

AFFIDAVIT OF DISPOSAL

WHEREAS, on the _____ DAY OF _____, 2____, the undersigned entered into and executed a contract with the City of San Diego, a municipal corporation, for:

POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES
(Name of Project)

as particularly described in said contract and identified as Bid No. **K-12-5548-DBB-3-C**; SAP No. (WBS/CC/IO). **B-10008/B-00952/B-10010** and **WHEREAS**, the specifications of said contract require the Contractor to affirm that "all brush, trash, debris, and surplus materials resulting from this project have been disposed of in a legal manner"; and **WHEREAS**, said contract has been completed and all surplus materials disposed of:

NOW, THEREFORE, in consideration of the final payment by the City of San Diego to said Contractor under the terms of said contract, the undersigned Contractor, does hereby affirm that all surplus materials as described in said contract have been disposed of at the following location(s)

and that they have been disposed of according to all applicable laws and regulations.

Dated this _____ DAY OF _____, 2_____.

Contractor
by

ATTEST:

State of _____
County of _____

On this _____ DAY OF _____, 2____, before the undersigned, a Notary Public in and for said County and State, duly commissioned and sworn, personally appeared _____ known to me to be the _____ Contractor named in the foregoing Release, and whose name is subscribed thereto, and acknowledged to me that said Contractor executed the said Release.

Notary Public in and for said County and State

SUPPLEMENTARY SPECIAL PROVISIONS (SSP)

THESE SUPPLEMENTARY SPECIAL PROVISIONS CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (THE GREENBOOK) CURRENTLY ADOPTED BY THE CITY, INCLUDING ITS CURRENT SUPPLEMENT AMENDMENTS (CITY SUPPLEMENTS INCLUDED IN THE WHITEBOOK), EXCEPT FOR THE FOLLOWING:

STYLE OF SPECIFICATIONS

The City is gradually standardizing the style and language of the standard specifications for the public works construction. The new style and language follows the Federal guidelines for “Plain Language” to the extent possible.

The use of this new style does not change the meaning of a specification not yet using this style. Where used in the Contract Documents, statement or command type phrases (i.e., active voice and imperative mood) refer to and are directed at the Bidder or Contractor as applicable. The specifications are written to the Bidder before award and the Contractor after. Before award, interpret sentences written in the imperative mood as starting with "The Bidder must" and interpret "you" as "the Bidder" and "your" as "the Bidder's." After award, interpret sentences written in the imperative mood as starting with "The Contractor must" and interpret "you" as "the Contractor" and "your" as "the Contractor's." Similarly, interpret "we" and “us” as "the City" and "our" as "the City's.”

PART 1 – GENERAL PROVISIONS

SECTION 1 – TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

1-2 TERMS AND DEFINITIONS.

Agency – ADD the following:

Regulatory activities handled by the City of San Diego Developmental Services, Fire and Planning Departments, or any other City Department are not subject to the responsibilities of the City under this contract.

Certificate of Compliance – To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

Certificate of Compliance – A written document signed and submitted by a supplier or manufacturer that certifies that the material or assembled material supplied to the Work site complies with the requirements of the Contract Documents.

Contract Documents – To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

The Agreement, Addendum, Invitation to Bid, Instructions to Bidders, special notice page, funding agency provisions, Bid and documentation accompanying the Bid and any post-bid documentation submitted prior to the Notice of Award when attached as an exhibit to the Contract, Bonds, permits from jurisdictional regulatory agencies, Supplementary Special Provisions (SSP), City’s EOC Requirements, City Supplement, Plans, Standard Plans, Construction Documents, Reference Specifications listed in the Invitation to Bid or the RFP for Design-Build contracts, Request for Qualifications (RFQ), Statement of Qualifications (SOQ), Request for Proposals (RFP), modifications issued after the execution of the Contract e.g., Change Orders, Construction Manager.

At Risk's Guaranteed Maximum Price including written qualifications, assumptions and conditions thereto and Pre-construction Services Agreement.

Limited Notice To Proceed – A written notice given from the City to the Contractor that authorizes the Contractor to start a limited amount of work that is not Construction Work, such as finalizing subcontract agreements, ordering materials, mobilization, furnishing a field office, and any other preliminary work done prior to performing Construction Work.

Normal Working Hours. To the City Supplement, ADD the following:

The Normal Working Hours shall be 7:30 AM to 4:00 PM.

Notice of Completion (NOC) – ADD the following:

See California Civil Code section 3093.

Samples - Physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be evaluated.

SECTION 2 - SCOPE AND CONTROL OF WORK

2-1.2.2 Joint Venture Contractors. To the City Supplement, last paragraph, DELETE in its entirety and SUBSTITUTE with the following:

The Joint Venture shall designate an on-site representative and an alternate in writing. The on-site representative and the alternate shall have the full authority to bind all Joint Venture partners.

The Joint Venture shall provide a copy of the Joint Venture agreement and the Joint Venture license to the City within 10 Working Days after receipt by the Bidder of Contract forms.

2-3.1.2 Subcontractor List. ADD the following:

For Extra Work, the Contractor shall submit Form CC10, "CONTRACT CHANGE ORDER (CCO)" with each CCO proposal. Form CC10 is available for download from the EOC site at: <http://www.sandiego.gov/eoc/pdf/cc10.pdf>

2-3.2 Self Performance. DELETE in its entirety and SUBSTITUTE with the following:

The Contractor shall perform, with its own organization, Contract work amounting to at least 50 percent of the base bid alone or base bid and any additive or deductive alternate(s) that together when added or deducted form the basis of determining the Apparent Low Bidder as specified. The self performance percentage requirement will be waived for contracts when a "B" License is required or allowed.

2-3.3 Status of Subcontractors. ADD the following:

With every request for payment, the Contractor shall submit to the Engineer a breakdown showing monthly and cumulative amounts of the Work performed under Change Order by the Contractor and the Subcontractors. The reporting format shall be approved by the Engineer.

2-3.4 Subcontract Requirements. To the City Supplement, ADD the following paragraph:

The Contractor shall ensure that all of its Subcontractors are licensed at the time of the execution of their subcontract agreements. In the event a Subcontractor is not properly licensed, the Contractor shall cease payment to Subcontractor for all work performed when the Subcontractor was improperly licensed. Any payment made by the Contractor to a Subcontractor for work performed when the Subcontractor was unlicensed shall be returned to the City.

Where the Contract Documents require that a particular product be installed or applied by an applicator approved by the manufacturer, it is the Contractor's responsibility to ensure the Subcontractor or Supplier employed for such work is approved by the manufacturer.

2-5.2 Precedence of Contract Documents. To the Cit Supplement, DELETE in its entirety and SUBSTITUTE with the following:

2-5.2 Precedence of Contract Documents. If there is a conflict between any of the Contract Documents, the document highest in the order of precedence shall control. The order of precedence, from highest to lowest, shall be as follows:

- 1) Permits (i.e., issued by jurisdictional regulatory agencies)
- 2) Change Orders and Supplemental Agreements; whichever occurs last
- 3) Contract and Agreement
- 4) Addenda
- 5) Bid (e.g., price Proposal for Design-Build contracts)
- 6) Request for Proposal (RFP)
- 7) Invitation to Bid
- 8) Instruction to Bidders
- 9) Request for Qualifications (RFQ)
- 10) Special Provisions (i.e., City's EOC Requirements, City Supplement, and Supplementary Special Provisions (SSP))
- 11) Plans
- 12) Construction Documents (for Design-Build contracts)
- 13) Standard Drawings
- 14) Reference Specifications (e.g., GREENBOOK)
- 15) Technical Proposal (for Design-Build contracts)
- 16) Statement of Qualifications (SOQ)

When additional requirements by the funding sources are physically or by reference incorporated in the Contract Documents, the funding source's requirements shall govern **unless specified otherwise**.

Figured dimensions shall take precedence over scaled dimensions. Detailed drawings shall take precedence over general drawings.

2-5.3.1 General. DELETE in its entirety and SUBSTITUTE with the following:

When required by the Contract Documents or when requested by the Engineer, the Contractor shall provide the submittals as specified in 2-5.3.2, 2-5.3.3, and 2-5.3.4 to the Engineer. Materials shall neither be furnished nor fabricated, nor shall any work for which submittals are required be performed before the required submittals have been reviewed and accepted by the Engineer. The payment for the submittals shall be included in the various Bid items. Neither review nor acceptance of submittals by the Engineer shall relieve the Contractor from responsibility for errors, omissions, or deviations from the Contract Documents, unless such deviations were specifically called to the attention of the Engineer in the letter of transmittal. The Contractor shall be responsible for the correctness of the submittals.

The Contractor shall allow a minimum of 20 working days for review of submittals unless otherwise specified in the Special Provisions. Each submittal shall be accompanied by a letter of transmittal.

2-5.4.1 General. ADD the following:

Source Identification e.g., RFI numbers and Change Order numbers as required to identify the source of the change to the Contract Documents shall be noted.

2-5.4.2 Asset Specific Red-lines (d). ADD the following:

- Dimensional changes to the drawings.
- Revisions to details shown on drawings.
- Depths of foundations below first floor.
- Locations and depths of underground utilities.
- Revisions to routing of piping and conduits.
- Revisions to electrical circuitry.
- Actual equipment locations.
- Duct size and routing.
- Locations of concealed internal utilities.
- Changes made by Change Order.
- Details not on original Plans.

2-6 WORK TO BE DONE. ADD the following:

In accordance with the provisions of California Law, the Contractor shall possess or require the Subcontractor(s) to possess valid appropriate license(s) for the Work being performed.

2-10 AUTHORITY OF BOARD AND ENGINEER. ADD the following:

Regulating agencies of the City, such as Developmental Services, Fire and Planning Departments, enforce Legal Requirements and standards. These enforcement activities are not subject to the responsibilities of the Engineer under this Agreement.

2-11 INSPECTION. ADD the following:

The City may utilize field inspectors to assist the Engineer during construction in observing performance of the Contractor. The inspector is for the purpose of assisting the Engineer and shall not be confused with an inspector with a City regulatory agency or with a Special Inspector.

Code compliance testing (including all Geotechnical requirements) and inspections required by codes or ordinances, or by a plan approval authority, shall be the responsibility of and shall be paid by the Contractor, unless otherwise provided in the Contract Documents.

The Contractor's quality control testing and inspections shall be the sole responsibility of the Contractor and paid by the Contractor included in the Bid price.

2-12 COORDINATION.

The police station will continue to be occupied 24 hours per day and 7 days per week. The work shall be accomplished in phases and in accordance with the approved schedule provided by the Contractor. It is required that prior to bidding, all bidders visit the project site and inspect and verify the existing conditions. Attention is directed to the fact that the current as-built plans do not indicate any detail of existing conditions nor of work to be done. All new work shall be expected to include conditions, both exposed and concealed, generally characteristic in construction of this type.

- 1.) All Contractors, employees and supply companies that will be inside or around the Police Headquarters' facilities shall have a Background check completed before access is permitted.
- 2.) Normal working hours for Police Department personnel is Monday – Friday 7:30am – 4:00pm.
- 3.) All Contractors, employees and supply companies shall be escorted while inside the Police Facility. Contact Scott Fuller at 619-980-0442 to coordinate access for any construction work.

ADD: 2-17 CONTRACTOR REGISTRATION. The Contractor, Subcontractors, and Suppliers shall register with the City's EOCP via Prism® i.e., the City's web-based contract compliance portal at: <https://pro.prismcompliance.com/contractor/plugins/pages/contractormenu.aspx>.

The Contractor shall ensure that proposed Subcontractors and Suppliers have completed the registration prior to Notice of Intent to Award. If the Contractor fails to have its Subcontractors and Suppliers registered after the NTP has been issued, the City will withhold a minimum of 10% in addition to the Retention from all invoices submitted until the Contractor and all listed Subcontractors and Suppliers are properly registered in PRISM.

SECTION 3 – CHANGES IN WORK

3-3.2.2 Basis for Establishing Costs (a) Labor, City Supplement, first and second paragraphs, DELETE in entirety and SUBSTITUTE with the following:

The City reserves the right to request financial records of salaries for an employee, wages, bonuses and deductions to substantiate the actual cost of labor certified by a California licensed Certified Public Accountant. The Contractor shall use the City provided form i.e., "PUBLIC WORKS PAYROLL REPORTING FORM" which is available at <http://www.sandiego.gov/eoc/pdf/payrollreport.pdf> to list the labor rates of its personnel and Subcontractors who work on this Project. An initial submittal shall be made prior to NTP.

The payment for payroll records shall be included in the various Bid item unless a separate Bid item has been provided.

SECTION 4 - CONTROL OF MATERIALS

4-1.3.1 General. First paragraph, ADD the following:

Other standard items or materials typically accepted by Certificate of Compliance shall not require inspection at the source unless specified in the Special Provisions. For a list of these items or materials, the Contractor may refer to the Contract Documents.

4-1.5 Certificates of Compliance. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

4-1.5 Certificates of Compliance. DELETE in its entirety and SUBSTITUTE with the following:

Certificates of Compliance shall be furnished to the Engineer prior to the use of any material or assembled material for which these Specifications so require or if so required by the Engineer.

The Engineer may waive the materials testing requirements of the Specifications and accept a Certificate of Compliance. Manufacturing test data may be required by the Engineer to be included with the submittal.

Materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The submission of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the Work which conforms to the requirements of the Contract Documents, and any material not conforming to the requirements will be subject to rejection whether in place or not.

When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the City shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

4-1.6 Trade Names or Equals. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

ADD the following:

Whenever materials or equipment are indicated in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the naming of the item is intended to establish the type, function, and quality required. Unless stated otherwise, materials or equipment of other Suppliers may be accepted if sufficient information is submitted to the Engineer for review to determine whether the material or equipment proposed is equivalent or equal to that named.

- a) The Contractor shall submit its list of proposed substitutions for “an equal” (“or equal”) item(s) **no later than 5 Working Days after the determination of the Apparent Low Bidder** and on a City form when provided by the City.
- b) The request for substitution shall include the following information:
 - i. Whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents to adopt the design to the proposed substitute.
 - ii. Whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty.
 - iii. All variations of the proposed substitute from the items originally specified will be identified.
 - iv. Available maintenance, repair, and replacement service requirements. The manufacturer shall have a local service agency within 50 miles of the site which maintains properly trained personnel and adequate spare parts and is able to respond and complete repairs within 24 hours.
 - v. Certification that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, and be similar and of equal substance to that indicated, and be suited to the same use as that specified.
- c) There is no guaranteed time frame for the City’s review of the substitution requests.
- d) The burden of proof as to the type, function, and quality of any such substitute product, material or equipment shall be upon the Contractor. The Engineer may require at the Contractor's expense additional data about the proposed substitute.
- e) If the Engineer takes no exceptions to the proposed substitution, it shall not relieve the Contractor from responsibility for the efficiency, sufficiency, quality, and performance of the substitute material or equipment, in the same manner and degree as the material and equipment specified by name.
- f) The lack of action(s) on the Engineer’s side within the Contractor’s requested time shall not constitute acceptance of the substitution.
- g) Acceptance by the Engineer of a substitute item shall not relieve the Contractor of the responsibility for full compliance with the Contract Documents.
- h) For the substitution review process or to have materials listed on the AML, refer to the AML standard review process.
- i) The Bid submittal shall be based on the material and equipment specified by name in the Contract. If the proposal is rejected by the Engineer, the Contractor shall not be entitled to either an extension in Contract Time, increase in the Contract Price, or both.
- j) As applicable, no Shop Drawing or Working Drawing submittals shall be made for a substitute item nor shall any substitute item be ordered, installed, or utilized without the Engineer's prior written.
- k) The Contractor shall reimburse the City for the charges of the Engineer for evaluating each proposed substitute.
- l) For Design-Build contracts, one copy of all designer reviewed submittals shall be provided to the Engineer.

SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF WORK

6-1.2 Commencement of Work. To the GREENBOOK and City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

Unless specified otherwise, construction shall start within 5 Working Days after NTP and be diligently prosecuted to completion within the Contract Time. The Contractor shall not start any construction activity at the Site until the Pre-construction Meeting is held and the NTP has been issued by the Engineer.

Upon the Contractor's written request, the City may delay the NTP as follows:

- a) Up to 5 Working Days from the Pre-construction Meeting, or
- b) Up to 40 Working Days from the Limited NTP for the preparation, submittal, obtaining approval for and filing of the PRDs in accordance with 801, "STORM WATER POLLUTION CONTROL," or
- c) Up to 60 Working Days from the Limited NTP for the preparation, submittal, and approval of the TCP on "D-sheets" when specified in 7-10.2, "Traffic Control."

For areas that do not require engineered TCP on D-sheets, the Contractor may at any time after the Pre-construction Meeting obtain a TCP Permit via Working Drawings or the City's over the counter process and start the Work. If the Contractor decides to commence the construction work before the completion of the D-sheet TCPs, the Contractor shall forfeit the 60 Working Days specified here. The D-sheet TCP shall be done concurrently and no additional time will be granted.

For paving Work, the Contractor shall coordinate the Work to facilitate the installation and protection of the new curb ramps and associated concrete work prior to commencing the asphalt overlay operations. The Work at a specific location shall not commence until all layouts and measurements are agreed upon by both the Contractor and the Engineer.

ADD: 6-1.8 Pre-construction Meeting. Within 20 Working Days from the Limited NTP the Engineer will schedule a mandatory pre-construction meeting (Pre-construction Meeting) with the Contractor. The agenda will include items such as NTP, design services and submittal and review process for Design-Build contracts, critical elements of the work schedule, submittal schedule, cost breakdown of major lump sum items, payment requests and processing, environmental and community concerns, coordination with the involved utility firms, the level of record project documents required and emergency telephone numbers for all representatives involved in the course of construction.

ADD: 6-8.1 Completion. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

6-8.1 Completion. The Contractor shall submit a written assertion that the Work has been completed. If, in the Engineer's judgment, the Work has been completed in accordance with the Contract Documents, the Engineer will set forth in writing the date the Work was completed. This will be the date when the Contractor is relieved from responsibility to protect and maintain the Work.

6-8.3 Warranty. Unless specified otherwise, the Work shall be warranted by the Contractor against defective workmanship and materials for a period of 1 year.

- a) The warranty period shall start on the date of completion of the Work as determined by the Engineer.
- b) The Contractor shall provide an unconditional warranty on all installed fiber optic cable for a minimum period of 2 years.
- c) The warranty period for the following items of the Work shall be 3 years:
 1. Work under Section 500 (requires Long Term Warranty Contract (LTWC))
 2. DWT Construction (requires manufacturer's warranty)
 3. LED signal modules (requires manufacturer's warranty)
 4. Private sewer pumps including the alarm panel and all other accessories. The Contractor shall provide the City and property owner a copy of the warranty. (requires manufacturer's warranty)
- d) The Contractor shall involve the manufacturer in the installation and startup as needed to secure any extended warranty required.
- e) The warranty period for specific items covered under manufacturers' or suppliers' warranties shall commence on the date they are placed into service at the direction of or as approved by the Engineer in writing.
- f) All warranties, express or implied, from Subcontractors or Suppliers, of any tier, for the work performed and materials furnished shall be assigned, in writing, to the City, and such warranties shall be delivered to the Engineer prior to acceptance of the Contractor's performance of the Contract.
- g) The Contractor shall replace or repair defective Work in a manner satisfactory to the Engineer, after notice to do so from the Engineer, and within the time specified in the notice. If the Contractor fails to make such replacement or repairs within the time specified in the notice, the City may perform the replacement or repairs at the Contractor's expense. If the Contractor fails to reimburse the City for the actual costs, the Contractor's Surety shall be liable for the cost thereof.
- h) Nothing in this warranty is intended to limit any manufacturer's warranty which provides the City with greater warranty rights than set forth in this section or the Contract Documents.
- i) These specifications are not intended to constitute a period of limitations or waiver of any other rights or remedies City may have regarding the Contractor's other obligations under the Contract Documents or federal or state law.
- j) The Contractor shall respond and initiate corrective action within 24 hours of notice of nonconforming Work that poses an imminent threat to person or property.

6-9 LIQUIDATED DAMAGES. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

MODIFY to increase the daily value from \$250 to \$1,000 for contracts with a value of over \$100,000.

SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR

7-3 LIABILITY INSURANCE. DELETE in its entirety and SUBSTITUTE with the following:

The insurance provisions herein must not be construed to limit your indemnity obligations contained in this contract.

ADD: 7-3.1 Policies and Procedures.

- a) You must procure the insurance described below, at your sole cost and expense, to provide coverage against claims for loss including injuries to persons or damage to property, which may arise out of or in connection with the performance of the Work by you, your agents, representatives, officers, employees or subcontractors.
- b) Insurance coverage for property damage resulting from your operations is on a replacement cost valuation. The market value will not be accepted.
- c) You must maintain this insurance for the duration of this contract and at all times thereafter when you are correcting, removing, or replacing Work in accordance with this contract. Your liabilities under this contract, e.g., your indemnity obligations, will is not deemed limited to the insurance coverage required by this contract.
- d) Payment for insurance is included in the various items of Work as bid by you, and except as specifically agreed to by the City in writing, you are not entitled to any additional payment. Do not begin any work under this contract until you have provided and the City has approved all required insurance.
- e) Policies of insurance must provide that the City is entitled to 30 days (10 days for cancellation due to non-payment of premium) prior written notice of cancellation or non-renewal of the policy. Maintenance of specified insurance coverage is a material element of this contract. Your failure to maintain or renew coverage or to provide evidence of renewal during the term of this contract may be treated by the City as a material breach of contract.

ADD: 7-3.2 Types of Insurance.

7-3.2.1 Commercial General Liability Insurance.

- a) Commercial General Liability Insurance must be written on the current version of the ISO Occurrence form CG 00 01 07 98 or an equivalent form providing coverage at least as broad.
- b) The policy must cover liability arising from premises and operations, XCU (explosions, underground, and collapse), independent contractors, products/completed operations, personal injury and advertising injury, bodily injury, property damage, and liability assumed under an insured's contract (including the tort liability of another assumed in a business contract).
- c) There must be no endorsement or modification limiting the scope of coverage for either "insured vs. insured" claims or contractual liability. You must maintain the same or equivalent insurance for at least 10 years following completion of the Work.

- d) All costs of defense must be outside the policy limits. Policy coverage must be in liability limits of not less than the following:

General Annual Aggregate Limit	Limits of Liability
Other than Products/Completed Operations	\$2,000,000
Products/Completed Operations Aggregate Limit	\$2,000,000
Personal Injury Limit	\$1,000,000
Each Occurrence	\$1,000,000

7-3.2.2 Commercial Automobile Liability Insurance.

- a) You must provide a policy or policies of Commercial Automobile Liability Insurance written on the current version of the ISO form CA 00 01 12 90 or later version or equivalent form providing coverage at least as broad in the amount of \$1,000,000 combined single limit per accident, covering bodily injury and property damage for owned, non-owned, and hired automobiles (“Any Auto”).
- b) All costs of defense must be outside the limits of the policy.

7-3.2.3 Commercial Pollution Liability Insurance.

- a) You must procure and maintain at your expense or require Subcontractor, as described below to procure and maintain, the Contractors Pollution Liability Insurance including contractual liability coverage to cover liability arising out of cleanup, removal, storage, or handling of hazardous or toxic chemicals, materials, substances, or any other pollutants by you or any Subcontractor in an amount not less than \$2,000,000 limit for bodily injury and property damage.
- b) All costs of defense must be outside the limits of the policy. Any such insurance provided by Subcontractor instead of you must be approved separately in writing by the City.
- c) For approval of a substitution of Subcontractor’s insurance, you must certify that all activities for which the Contractors Pollution Liability Insurance will provide coverage will be performed exclusively by the Subcontractor providing the insurance. The deductible must not exceed \$25,000 per claim.
- d) Contractual liability must include coverage of tort liability of another party to pay for bodily injury or property damage to a third person or organization. There must be no endorsement or modification of the coverage limiting the scope of coverage for either “insured vs. insured” claims or contractual liability.
- e) Occurrence based policies must be procured before the Work commences and must be maintained for the Contract Time. Claims Made policies must be procured before the Work commences, must be maintained for the Contract Time, and must include a 12 month extended Claims Discovery Period applicable to this contract or the existing policy or policies must continue to be maintained for 12 months after the completion of the Work without advancing the retroactive date.
- f) Except as provided for under California law, the policy or policies must provide that the City is entitled to 30 days prior written notice (10 days for cancellation due to non-payment of premium) of cancellation or non-renewal of the policy or policies.

7-3.2.4 Contractors Hazardous Transporters Pollution Liability Insurance.

- a) You must provide at your expense or require Subcontractor to provide, as described below Contractors Hazardous Transporters Pollution Liability Insurance including contractual liability coverage to cover liability arising out of transportation of hazardous or toxic, materials, substances, or any other pollutants by you or any subcontractor in an amount not less than \$2,000,000 limit per occurrence/aggregate for bodily injury and property damage.
- b) All costs of defense must be outside the limits of the policy. The deductible must not exceed \$25,000 per claim. Any such insurance provided by a subcontractor instead of you must be approved separately in writing by the City.
- c) For approval of the substitution of Subcontractor's insurance you must certify that all activities for which Contractors Hazardous Transporters Pollution Liability Insurance will provide coverage will be performed exclusively by the Subcontractor providing the insurance.
- d) Contractual liability must include coverage of tort liability of another party to pay for bodily injury or property damage to a third person or organization. There must be no endorsement or modification of the coverage limiting the scope of coverage for either "insured vs. insured" claims or contractual liability. Occurrence based policies must be procured before the Work commences and must be maintained for the duration of this contract. Claims Made policies must be procured before the Work commences, must be maintained for the duration of this contract, and must include a 12 month extended Claims Discovery Period applicable to this contract or the existing policy or policies must continue to be maintained for 12 months after the completion of the Work under this contract without advancing the retroactive date.
- e) Except as provided for under California law, the policy or policies must provide that the City is entitled to 30 days prior written notice (10 days for cancellation due to non-payment of premium) of cancellation or non-renewal of the policy or policies.

7-3.2.5 Contractors Builders Risk Property Insurance.

- a) You must provide at your expense, and maintain until Final Acceptance of the Work, a Special Form Builders Risk Policy or Policies. This insurance must be in an amount equal to the replacement cost of the completed Work (without deduction for depreciation) including the cost of excavations, grading, and filling. The policy or policies limits must be 100% of this contract value of the Work plus 15% to cover administrative costs, design costs, and the costs of inspections and construction management.
- b) Insured property must include material or portions of the Work located away from the Site but intended for use at the Site, and must cover material or portions of the Work in transit. The policy or policies must include as insured property scaffolding, falsework, and temporary buildings located at the Site. The policy or policies must cover the cost of removing debris, including demolition.
- c) The policy or policies must provide that all proceeds thereunder must be payable to the City as Trustee for the insured, and must name the City, you, Subcontractors, and Suppliers of all tiers as named insured. We as Trustee will collect, adjust, and receive all monies which may become due and payable under the policy or policies, may compromise any and all claims thereunder, and will apply the proceeds of such insurance to the repair, reconstruction, or replacement of the Work.

- d) Any deductible applicable to the insurance must be identified in the policy or policies documents and responsibility for paying the part of any loss not covered because of the application of such deductibles must be apportioned among the parties except for the City as follows: if there is more than one claimant for a single occurrence, then each claimant must pay a pro-rata share of the per occurrence deductible based upon the percentage of their paid claim to the total paid for insured. The City must be entitled to 100% of its loss. You must pay the City any portion of that loss not covered because of a deductible, at the same time the proceeds of the insurance are paid to the City as trustee.
- e) Any insured, other than the City, making claim to which a deductible applies must be responsible for 100% of the loss not insured because of the deductible. Except as provided for under California law, the policy or policies must provide that the City is entitled to 30 days prior written notice (10 days for cancellation due to non-payment of premium) of cancellation or non-renewal of the policy or policies.

ADD: 7-3.3 Rating Requirements.

Except for the State Compensation Insurance Fund, all insurance required by this contract as described herein must be carried only by responsible insurance companies with a rating of, or equivalent to, at least “A-, VI” by A.M. Best Company, that are authorized by the California Insurance Commissioner to do business in the State, and that have been approved by the City.

7-3.3.1 Non-Admitted Carriers.

The City will accept insurance provided by non-admitted, “surplus lines” carriers only if the carrier is authorized to do business in the State and is included on the List of Eligible Surplus Lines Insurers (LESLI list).

All policies of insurance carried by non-admitted carriers must be subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

ADD: 7-3.4 Evidence of Insurance.

Furnish to the City documents e.g., certificates of insurance and endorsements evidencing the insurance required herein, and furnish renewal documentation prior to expiration of this insurance. Each required document must be signed by the insurer or a person authorized by the insurer to bind coverage on its behalf. We reserve the right to require complete, certified copies of all insurance policies required herein.

ADD: 7-3.5 Policy Endorsements.

7-3.5.1 Commercial General Liability Insurance

7-3.5.1.1 Additional Insured.

- a) You must provide at your expense policy endorsement written on the current version of the ISO Occurrence form CG 20 10 11 85 or an equivalent form providing coverage at least as broad.
- b) To the fullest extent allowed by law e.g., California Insurance Code §11580.04, the policy must be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured.
 - 1. The additional insured coverage for projects for which the Engineer’s Estimate is \$1,000,000 or more must include liability arising out of: (a) Ongoing operations performed by you or on your behalf, (b) Your products, (c) Your work, e.g., your completed operations performed by you or on your behalf, or (d) premises owned, leased, controlled, or used by you.

2. The additional insured coverage for projects for which the Engineer's Estimate is less than \$1,000,000 must include liability arising out of: (a) Ongoing operations performed by you or on your behalf, (b) Your products, or (c) premises owned, leased, controlled, or used by you.

7-3.5.1.2 Primary and Non-Contributory Coverage. The policy must be endorsed to provide that the coverage with respect to operations, including the completed operations, if appropriate, of the Named Insured is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives. Further, it must provide that any insurance maintained by the City and its elected officials, officers, employees, agents and representatives must be in excess of the Contractor's insurance and must not contribute to it.

7-3.5.1.3 Project General Aggregate Limit. The policy or policies must be endorsed to provide a Designated Construction Project General Aggregate Limit that will apply only to the Work. Only claims payments which arise from the Work must reduce the Designated Construction Project General Aggregate Limit. The Designated Construction Project General Aggregate Limit must be in addition to the aggregate limit provided for the products-completed operations hazard.

7-3.5.2 Commercial Automobile Liability Insurance.

7-3.5.2.1 Additional Insured. Unless the policy or policies of Commercial Auto Liability Insurance are written on an ISO form CA 00 01 12 90 or a later version of this form or equivalent form providing coverage at least as broad, the policy must be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured, with respect to liability arising out of automobiles owned, leased, hired or borrowed by you or on your behalf. This endorsement is limited to the obligations permitted by California Insurance Code §11580.04.

7-3.5.3 Contractors Pollution Liability Insurance Endorsements.

7-3.5.3.1 Additional Insured.

- a) The policy or policies must be endorsed to include as an Insured the City and its respective elected officials, officers, employees, agents, and representatives, with respect to liability arising out of: (a) Ongoing operations performed by you or on your behalf, (b) your products, (c) your work, e.g., your completed operations performed by you or on your behalf, or (d) premises owned, leased, controlled, or used by you; except that in connection with, collateral to, or affecting any construction contract to which the provisions of subdivision (b) of § 2782 of the California Civil Code apply, this endorsement must not provide any duty of indemnity coverage for the active negligence of the City and its respective elected officials, officers, employees, agents, and representatives in any case where an agreement to indemnify the City and its respective elected officials, officers, employees, agents, and representatives would be invalid under subdivision (b) of §2782 of the California Civil Code.
- b) In any case where a claim or loss encompasses the negligence of the Insured and the active negligence of the City and its respective elected officials, officers, employees, agents, and representatives that is not covered because of California Insurance Code §11580.04, the insurer's obligation to the City and its respective elected officials, officers, employees, agents, and representatives must be limited to obligations permitted by California Insurance Code §11580.04.

7-3.5.3.2 Primary and Non-Contributory Coverage. The policy or policies must be endorsed to provide that the insurance afforded by the Contractors Pollution Liability Insurance policy or policies is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives with respect to operations including the completed operations of the Named Insured. Any insurance maintained by the City and its elected officials, officers, employees, agents and representatives must be in excess of your insurance and must not contribute to it.

7-3.5.3.3 Severability of Interest. For Contractors Pollution Liability Insurance, the policy or policies must provide that your insurance must 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 and must provide cross-liability coverage.

7-3.5.4 Contractors Hazardous Transporters Pollution Liability Insurance Endorsements.

7-3.5.4.1 Additional Insured.

- a) The policy or policies must be endorsed to include as an Insured the City and its respective elected officials, officers, employees, agents, and representatives, with respect to liability arising out of: (a) Ongoing operations performed by you or on your behalf, (b) your products, (c) your work, e.g., your completed operations performed by you or on your behalf, or (d) premises owned, leased, controlled, or used by you; except that in connection with, collateral to, or affecting any construction contract to which the provisions of subdivision (b) of §2782 of the California Civil Code apply, this endorsement must not provide any duty of indemnity coverage for the active negligence of the City and its respective elected officials, officers, employees, agents, and representatives in any case where an agreement to indemnify the City and its respective elected officials, officers, employees, agents, and representatives would be invalid under subdivision (b) of §2782 of the California Civil Code.
- b) In any case where a claim or loss encompasses the negligence of the Insured and the active negligence of the City and its respective elected officials, officers, employees, agents, and representatives that is not covered because of California Insurance Code §11580.04, the insurer's obligation to the City and its respective elected officials, officers, employees, agents, and representatives must be limited to obligations permitted by California Insurance Code §11580.04.

7-3.5.4.2 Primary and Non-Contributory Coverage. The policy or policies must be endorsed to provide that the insurance afforded by the Contractors Pollution Liability Insurance policy or policies is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives with respect to operations including the completed operations of the Named Insured. Any insurance maintained by the City and its elected officials, officers, employees, agents and representatives must be in excess of your insurance and must not contribute to it.

7-3.5.4.3 Severability of Interest. For Contractors Hazardous Transporters Pollution Liability Insurance, the policy or policies must provide that your insurance must 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 and must provide cross-liability coverage.

7-3.5.5 Builders Risk Endorsements.

7-3.5.5.1 Waiver of Subrogation. The policy or policies must be endorsed to provide that the insurer will waive all rights of subrogation against the City, and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from work performed by the Named Insured for the City.

7-3.5.5.2 Builders Risk – Partial Utilization. If we desire to occupy or use a portion or portions of the Work prior to Acceptance in accordance with this contract, we will notify you and you must immediately notify your Builder's Risk insurer and obtain an endorsement that the policy or policies must not be cancelled or lapse on account of any such partial use or occupancy. You must obtain the endorsement prior to our occupation and use.

ADD: 7-3.6 Deductibles and Self-Insured Retentions. You are responsible for the payment of all deductibles and self-insured retentions. Disclose deductibles and self-insured retentions to the City at the time the evidence of insurance is provided.

ADD: 7-3.7 Reservation of Rights. We reserve the right, from time to time, to review your insurance coverage, limits, deductibles and self-insured retentions to determine if they are acceptable to the City. We will reimburse you, without overhead, profit, or any other markup, for the cost of additional premium for any coverage requested by the Engineer but not required by this contract.

ADD: 7-3.8 Notice of Changes to Insurance. You must notify the City 30 days prior to any material change to the policies of insurance provided under this contract.

ADD: 7-3.9 Excess Insurance. Policies providing excess coverage must follow the form of the primary policy or policies e.g., all endorsements.

7-4 WORKERS' COMPENSATION INSURANCE. DELETE in its entirety and SUBSTITUTE with the following:

7-4.1 Workers' Compensation Insurance and Employers Liability Insurance.

- a) In accordance with the provisions of §3700 of the California Labor Code, you must provide at its expense Workers' Compensation Insurance and Employers Liability Insurance to protect you against all claims under applicable state workers compensation laws. The City, its elected officials, and employees will not be responsible for any claims in law or equity occasioned by your failure to comply with the requirements of this section.
- b) Limits for this insurance must be not less than the following:

<u>Workers' Compensation</u>	<u>Statutory Employers Liability</u>
Bodily Injury by Accident	\$1,000,000 each accident
Bodily Injury by Disease	\$1,000,000 each employee
Bodily Injury by Disease	\$1,000,000 policy limit

- c) By signing and returning this contract you certify that you are aware of the provisions of §3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code and you will comply with such provisions before commencing the Work as required by § 1861 of the California Labor Code.

7-4.1.1 Waiver of Subrogation. The policy or policies must be endorsed to provide that the insurer will waive all rights of subrogation against the City, and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from work performed by the Named Insured for the City.

7-8.6 Water Pollution Control. ADD the following:

- a) The Project is subject to the Storm Water Pollution control requirements listed on the Plans or as specified in these specifications.

- b) For contracts subject to Construction General Permit (CGP), the Contractor’s QSD shall verify the City’s assessment prior to submittal through SMARTS.
- c) The Contractor’s attention is directed to Section 801, “WATER POLLUTION CONTROL” of these specifications for more information.

Based on a preliminary assessment by the City, this contract is subject to WPCP.

7-9 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS. ADD the following:

In any emergency affecting the safety of persons or property, the Contractor shall act, at its discretion, to prevent threatened damage, injury or loss. Any change in Contract Price or Contract Time resulting from emergency work shall be determined as provided in SECTION 3, “CHANGES IN WORK.”

7-10.1 Traffic and Access. To the City Supplement, DELETE the agency notification listing in its entirety and SUBSTITUTE with the following:

The Contractor shall notify Metropolitan Transit System (MTS), a minimum of 5 Working Days prior to excavation, construction, or traffic control affecting bus stops. The Contractor shall notify the remaining agencies a minimum of two 2 Working Days prior to construction activities affecting the agencies:

Fire Department Dispatch	(Street or alley closure)	(858) 573-1300
Police Department Traffic	(Street or alley closure)	(858) 495-7800
Street Division/Electrical	(Traffic signals)	(619) 527-7500
U.S. Navy	(32nd Street Naval Station)	(619) 556-1319
Underground Service Alert	(Any excavation)	(800) 422-4133
MTS	(Street Closure and Bus Stops)	(619) 238-0100 Ext 6451

7-15 INDEMNIFICATION AND HOLD HARMLESS AGREEMENT. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

ADD: 7-15 INDEMNIFICATION AND HOLD HARMLESS AGREEMENT. The Contractor shall defend, indemnify, protect, and hold harmless the City, its agents, officers, and employees, from and against all claims asserted, or liability established for damages or injuries to any person or property resulting from the Contractor’s action or failure to take the necessary measures to prevent such damages and injuries.

The Contractor shall be responsible for payment of any fines resulting from citations issued to the City by either the federal, state, or local environmental and safety enforcement agencies due to the Contractor’s failure to abide by applicable safety, health, and environmental standards.

SECTION 8 - FACILITIES FOR AGENCY PERSONNEL

8-2 FIELD OFFICE FACILITIES. To the City Supplement, DELETE in its entirety.

PART 2 - CONSTRUCTION MATERIALS

SECTION 207 – PIPE

ADD: 207-17.2.3 Pipe Manufacturer. Pipe, fittings, couplings, and joints as manufactured or distributed by J-M Manufacturing Company shall not be used on this contract.

207-26.1.5 Polyvinyl Chloride Pipe 2” Only. To the City Supplement, DELETE in its entirety.

END OF SUPPLEMENTARY SPECIAL PROVISIONS (SSP)

TECHNICALS

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SECTION 02 4100

DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Building demolition excluding removal of hazardous materials and toxic substances.
- B. Selective demolition of building elements for alterations purposes.
- C. Abandonment and removal of existing utilities and utility structures.

1.02 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2004.

1.03 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, section 2-5.3 for shop drawings and submittals.
- B. Site Plan: Showing:
 - 1. Areas for temporary construction and field offices.
 - 2. Areas for temporary and permanent placement of removed materials.
- C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
 - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
 - 2. Identify demolition firm and submit qualifications.
 - 3. Include a summary of safety procedures.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.04 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.
 - 1. Minimum of 3 years of documented experience.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 SCOPE

- A. Remove selective portions of existing building per drawings and as listed below. Coordinate Sequence and Schedule demolition activities with Resident Engineer:
 - 1. Entry Doors at Level 2 public entrance, as indicated on Drawings.

2. Restrooms: including fixtures, selected toilet partitions, grab bars, countertops, selected accessories. See Drawings for specific notations at each restroom listed below.
 - a. Level P1 – Unisex restroom.
 - b. Level 1 – Core Restroom, Public Restrooms at public entrance, Watch Commanders unisex restroom.
 - c. Level 2 – Core Restroom.
 - d. Level 3 – Restrooms and Locker Rooms.
 - e. Level 4 – Core Restroom.
 - f. Level 5 – Core Restroom.
 - g. Level 6 – Core Restroom.
 - h. Level 7 – Core Restroom, Chief’s Office Restroom, Commander’s Office Restrooms.
 3. Janitor's Closet, each floor: mop sink and adjacent wall finish. See Drawings for specific notations.
 4. Door and wall signage at each restroom.
 5. Drinking fountain, in public areas and each floor adjacent to core restrooms.
 6. Plumbing items as indicated on drawings.
 7. Mechanical items as indicated on drawings.
 8. Electrical items as indicated on drawings.
 9. Level P2 parking signage and paint striping as indicated on drawings.
 10. Level 1 – ‘E’ Street parking level striping as indicated on drawings.
 11. Level 1 – ‘E’ Street pedestrian ramp handrails as indicated on drawings.
- B. Remove other items indicated, and items indicated for relocation.
- C. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as required so that required rough grade elevations do not subside within one year after completion.
- D. Remove any items as necessary for completion of overall scope of work. Contractor to coordinate demolition requirements with rest of sheets in plan set and specifications. Items that will conflict with successful completion of the work described in these construction documents must be removed. Where existing structural components or other materials conflict with construction of finished project, and are not specifically shown on Demolition Plan, notify Resident Engineer prior to removal.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
1. Obtain required permits.

2. Comply with applicable requirements of NFPA 241.
 3. Use of explosives is not permitted.
 4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 5. Provide, erect, and maintain temporary barriers and security devices.
 6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 8. Do not close or obstruct roadways or sidewalks without permit.
 9. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Resident Engineer.
- C. Do not begin removal until built elements to be salvaged or relocated have been removed.
- D. Protect existing structures and other elements that are not to be removed.
1. Provide bracing and shoring.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.
- E. Minimize production of dust due to demolition operations; does not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- F. If hazardous materials are discovered during removal operations, stop work and notify Resident Engineer; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- G. Perform demolition in a manner that maximizes salvage and recycling of materials.
1. Dismantle existing construction and separate materials.
 2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.03 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.

- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupts existing life safety systems that are in use without at least 7 days prior written notification to Resident Engineer.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Resident Engineer.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
- H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction.
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- D. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
- E. Services (Including but not limited to Plumbing): Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.

- F. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.

3.05 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 05 5000

METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This Section includes the following:
 - 1. Steel framing and supports for mechanical equipment.
 - 2. Steel framing and supports for applications where framing and supports are not specified in other Sections.
 - 3. Loose bearing and leveling plates.
 - 4. Miscellaneous steel trim

1.02 RELATED REQUIREMENTS

- A. Section 09 9000 - Painting and Coating: Paint finish.

1.03 REFERENCE STANDARDS

- A. ASTM A 36/A 36M - Standard Specification for Carbon Structural Steel; 2008.
- B. ASTM A 53/A 53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2007.
- C. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2009.
- D. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- E. ASTM A 283/A 283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2003 (Reapproved 2007).
- F. ASTM A 325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength; 2009a.
- G. ASTM A 325M - Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Tensile Strength (Metric); 2009.
- H. ASTM A 500/A 500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2010.
- I. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; American Welding Society; 2007.
- J. AWS D1.1/D1.1M - Structural Welding Code - Steel; American Welding Society; 2010.
- K. SSPC-Paint 15 - Steel Joist Shop Primer; Society for Protective Coatings; 1999 (Ed. 2004).
- L. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings; 2002 (Ed. 2004).
- M. SSPC-SP 2 - Hand Tool Cleaning; Society for Protective Coatings; 1982 (Ed. 2004).

1.04 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, Section 2-5.3 for Shop Drawings and Submittals.
- 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. Show anchorage and accessory items.
 - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
 - 2. Provide templates for anchors and bolts specified for installation under other Sections.
- C. Welders' Certificates: Submit certification for welders employed on the project, verifying AWS qualification within the previous 12 months.
- D. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers certifying that shop primers are compatible with topcoats.

1.05 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1, "Structural Welding Code--Steel."
 - 2. AWS D1.3, "Structural Welding Code--Sheet Steel."

1.06 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication and indicate measurements on Shop Drawings.
 - 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions.
 - 2. Provide allowance for trimming and fitting at site.

1.07 COORDINATION

- A. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- B. Coordinate installation of steel weld plates and angles for casting into concrete that are specified in this Section but required for work of another Section. Deliver such items to Project site in time for installation.
- C. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturer's recommendations to ensure that shop primers and topcoats are compatible with one another.

PART 2 PRODUCTS

2.01 MATERIALS - GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.02 MATERIALS - STEEL

- A. Steel Sections: ASTM A 36/A 36M.
- B. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, Type 304.
- C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.
- D. Steel Tubing: ASTM A 500, Grade B cold-formed structural tubing.
- E. Plates: ASTM A 283.
- F. Pipe: ASTM A 53/A 53M, Grade B Schedule 40, black finish.
- G. Slotted Channel Framing: ASTM A 653, Grade 33.
- H. Slotted Channel Fittings: ASTM A 1011/A 1011M.
- I. Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, galvanized to ASTM A 153/A 153M where connecting galvanized components.
- J. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- K. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
- L. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.03 MATERIALS - NONFERROUS

- A. Aluminum Plate and Sheet: ASTM B 209 (ASTM B 209M), Alloy 6061-T6.
- B. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T6.
- C. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, Alloy 6061-T6.
- D. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.

2.04 FASTENERS

- A. General: Unless otherwise indicated, provide Type 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, at exterior walls. Provide stainless-steel fasteners for fastening aluminum. Select fasteners for type, grade, and class required.
- B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with hex nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.
- C. Stainless-Steel Bolts and Nuts: Regular hexagon-head annealed stainless-steel bolts, nuts and, where indicated, flat washers; ASTM F 593 (ASTM F 738M) for bolts and ASTM F 594 (ASTM F 836M) for nuts, Alloy Group 1 (A1).

- D. Anchor Bolts: ASTM F 1554, Grade 36.
 - 1. Provide hot-dip or mechanically deposited, zinc-coated anchor bolts where item being fastened is indicated to be galvanized.
- E. Eyebolts: ASTM A 489.
- F. Machine Screws: ASME B18.6.3 (ASME B18.6.7M).
- G. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).
- H. Plain Washers: Round, ASME B18.22.1 (ASME B18.22M).
- I. Lock Washers: Helical, spring type, ASME B18.21.1 (ASME B18.21.2M).
 - 1. Threaded or wedge type; galvanized ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, hot-dip galvanized per ASTM A 153/A 153M.
- J. Expansion Anchors: Anchor bolt and sleeve assembly with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
 - 1. Material for Anchors in Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material for Anchors in Exterior Locations: Alloy Group 1 (A1) stainless-steel bolts complying with ASTM F 593 (ASTM F 738M) and nuts complying with ASTM F 594 (ASTM F 836M).

2.05 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Shop Primers: Provide primers that comply with Division 9 painting Sections and
- C. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.
 - 1. Use primer with a VOC content of 100 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- D. Zinc-Rich Primer: Complying with SSPC-Paint 20 or SSPC-Paint 29 and compatible with topcoat.
 - 1. Use primer with a VOC content of 100 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Products:
 - a. Benjamin Moore & Co.; Epoxy Zinc-Rich Primer CM18/19.
 - b. Carboline Company; Carbozinc 621.
 - c. ICI Devoe Coatings; Catha-Coat 313.

- d. International Coatings Limited; Interzinc 315 Epoxy Zinc-Rich Primer.
 - e. PPG Architectural Finishes, Inc.; Aquapon Zinc-Rich Primer 97-670.
 - f. Sherwin-Williams Company (The); Corothane I GalvaPac Zinc Primer.
 - g. Tnemec Company, Inc.; Tneme-Zinc 90-97.
 - h. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.
- E. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
 - F. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
 - G. Nonshrink, Metallic Grout: Factory-packaged, ferrous-aggregate grout complying with ASTM C 1107, specifically recommended by manufacturer for heavy-duty loading applications.
 - H. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.06 FABRICATION

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work true to line and level with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts, unless otherwise indicated. Locate joints where least conspicuous.

- G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
 - 1. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches (3.2 by 38 mm), with a minimum 6-inch (150-mm) embedment and 2-inch (50-mm) hook, not less than 8 inches (200 mm) from ends and corners of units and 24 inches (600 mm) o.c., unless otherwise indicated.

2.07 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items.
 - 1. Fabricate units from slotted channel framing where indicated.
 - 2. Furnish inserts if units are installed after concrete is placed.
- C. Galvanize miscellaneous framing and supports unless otherwise indicated.
- D. Prime miscellaneous framing and supports with zinc-rich primer where indicated.

2.08 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.
- B. Galvanize plates after fabrication.
- C. Prime plates with zinc-rich primer.

2.09 STEEL WELD PLATES AND ANGLES

- A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete or masonry construction as needed to complete the Work. Provide each unit with not less than two integrally welded steel strap anchors for embedding in concrete or masonry.

2.10 FINISHES - GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly.

2.11 FINISHES - STEEL

A. Galvanizing:

1. General: Prior to the galvanizing operation, the Contractor shall identify to the galvanizer the specific assemblies and surfaces receiving a paint or coating system after galvanizing, to ensure that the galvanizing method used on these assemblies is compatible with subsequent application of the paint or coating system. Specifically, such assemblies shall neither be water-quenched, nor receive a chromate conversion coating, as part of the galvanizing operation. For galvanized surfaces to remain exposed to view, the Contractor shall identify to the galvanizer the specific assemblies and surfaces to ensure that the galvanized surfaces are consistent in appearance, finish, and reflectivity.
2. Hot-dip galvanizes items as indicated to comply with applicable standard listed below:
 - a. ASTM A 123/A 123M, for galvanizing steel and iron products.
 - b. ASTM A 153/A 153M, for galvanizing steel and iron hardware.
 - c. Fill vent holes and grind smooth after galvanizing.
3. Galvanized Surface Cleaning and Preparation:
 - a. Galvanized surfaces receiving paint or coating system shall be cleaned and prepared for coating in accordance with ASTM D 6386 and the written instructions of the painting or coating system manufacturer.
 - b. Assemblies conforming to the ASTM D 6386 definition for newly galvanized steel shall receive surface smoothing and surface cleaning in accordance with ASTM D 6386 Section 5, and surface preparation in accordance with ASTM D 6386 Section 5.4.1.
 - c. Assemblies conforming to the ASTM D 6386 definition for partially weathered galvanized steel shall be checked and prepared in accordance with ASTM D 6386 Section 6, before then receiving surface smoothing and surface cleaning in accordance with ASTM D 6386 Section 5, and surface preparation in accordance with ASTM D 6386 Section 5.4.1.
 - d. Assemblies conforming to the ASTM D 6386 definition for weathered galvanized steel shall be checked and prepared in accordance with ASTM D 6386 Section 7, before then receiving surface smoothing and surface cleaning in accordance with ASTM D 6386 Section 5, and surface preparation in accordance with ASTM D 6386 Section 5.4.1.

B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:

1. Exteriors (SSPC Zone 1B) and Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."

- C. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
 - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

2.12 FABRICATION TOLERANCES

- A. Squareness: 1/8 inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- D. Field Welding: Comply with the following requirements:
 - 1. Clean and strip primed steel items to bare metal where site welding is required.
 - 2. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 3. Obtain fusion without undercut or overlap.
 - 4. Remove welding flux immediately.
 - 5. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- E. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.
- F. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

- G Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

3.02 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

3.03 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 - 1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 9 painting Sections.
- C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.04 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.

END OF SECTION

SECTION 05 5213

PIPE AND TUBE RAILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Free-standing railings at stairs and ramps.
- B. Wall-anchored railings at stairs and ramps.

1.02 RELATED REQUIREMENTS

- A. Section 09 9000 - Painting and Coating: Paint finish.

1.03 REFERENCE STANDARDS

- A. ASTM E 935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; 2000 (Reapproved 2006).
- B. ASTM E 985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings; 2000 (Reapproved 2006).

1.04 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, section 2-5.3 for shop drawings and submittals.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

PART 2 PRODUCTS

2.01 RAILINGS - GENERAL REQUIREMENTS

- A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of ASTM E 985 and applicable local code.
- B. Design railing assembly, wall rails, and attachments to resist lateral force of 75 lbs at any point without damage or permanent set. Test in accordance with ASTM E 935.
- C. Allow for expansion and contraction of members and building movement without damage to connections or members.
- D. Dimensions: See drawings for configurations and heights.
 - 1. Top Rails and Wall Rails: 1-1/2 inches diameter, round.
 - 2. Intermediate Rails: 1-1/2 inches diameter, round.
 - 3. Posts: 1-1/2 inches diameter, round.
- E. Provide anchors, wall brackets, escutcheon plates and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
 - 1. For anchorage to concrete, provide inserts to be cast into concrete, for welding anchors.
 - 2. For anchorage to stud walls, provide backing plates, for bolting anchors.

3. For anchorage to masonry walls, provide stainless steel expansion anchors.
 4. Posts: Provide adjustable flanged brackets.
- F. Provide welding fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.

2.02 STEEL RAILING SYSTEM

- A. Steel Tube: Type 304 Stainless Steel structural tubing.
1. Use where matches existing railing tube material.
- B. Steel Tube: ASTM A 500, grade B, cold-formed structural tubing.
1. Use where matches existing railing tube material.
- C. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.
- D. Exposed Fasteners: No exposed bolts or screws.
- E. Handrail Brackets: Fabricated of same material as tubing for application. Anchor with accessory fasteners provided by manufacturer for as appropriate for substrate. All fasteners/anchors to be stainless steel. Re-use existing where feasible, modify with vertical brackets extensions as noted below.
- F. Handrail Bracket Vertical Extensions: Fabricated of same material as tubing for application. Weld connection to existing handrail brackets and handrail. Extensions will vary in length but must ensure top of handrail maintains consistent height at 36 inches above finish ramp and landing surfaces.
- G. Handrail Extensions at Landing: Fabricated of same material as tubing for application. Weld connection to existing handrail brackets and handrail. Extensions to be added in locations indicated per plan at upper and lower ramp landings. Ensure top of handrail extension maintain consistent height of 36" above landing and is installed parallel with finished landing surface. Return end to wall.
- H. Finish: Paint per Section 09 9000. Paint entire railing system at ramp indicated on drawings including all posts, railings, handrails, handrail brackets and extensions, existing or new.

2.03 FABRICATION

- A. Accurately form components to suit specific project conditions and for proper connection to building structure.
- B. Fit and shop assemble components in largest practical sizes for delivery to site.
- C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.
- D. Welded Joints:
1. Exterior Components: Continuously seal joined pieces by intermittent welds and plastic filler. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.

2. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
3. 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.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply items required to be cast into concrete with setting templates, for installation as work of other sections.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- C. Anchor railings securely to structure.
- D. Field weld anchors as indicated on shop drawings. Touch-up welds with primer. Grind welds smooth.
- E. Conceal anchor bolts and screws whenever possible.

3.04 TOLERANCES

- A. Maximum Variation from Plumb: 1/4 inch per floor level, non-cumulative.
- B. Maximum Offset from True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 06 1000

ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Structural dimension lumber framing.
- B. Non-structural dimension lumber framing.
- C. Rough opening framing for doors, windows, and roof openings.
- D. Sheathing.
- E. Preservative treated wood materials.
- F. Miscellaneous framing and sheathing.
- G. Concealed wood blocking, nailers, and supports.
- H. Miscellaneous wood nailers, furring, and grounds.

1.02 RELATED REQUIREMENTS

- A. Section 09 2900 - Gypsum Board: Gypsum-based sheathing.

1.03 REFERENCE STANDARDS

- A. AFPA (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings; American Forest and Paper Association; 2001.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2010
- D. AWPA U1 - Use Category System: User Specification for Treated Wood; American Wood Protection Association; 2010.
- E. PS 1 - Structural Plywood; 2007.
- F. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce); 2005.
- G. WCLIB (GR) - Standard Grading Rules for West Coast Lumber No. 17; West Coast Lumber Inspection Bureau; 2004, and supplements.

1.04 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, section 2-5.3 for shop drawings and submittals.
- B. Product Data: Provide technical data on wood preservative materials and application instructions.
- C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

- D. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

1.06 WARRANTY

- A. Correct defective Work within a five year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. Species: Douglas Fir-Larch, unless otherwise indicated.
 - 2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
 - 3. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.
- B. Lumber fabricated from old growth timber is not permitted.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Grading Agency: West Coast Lumber Inspection Bureau (WCLIB).
- B. Sizes: Nominal sizes as indicated on drawings, S4S.
- C. Surfacing: S4S, S-DRY.
- D. Moisture Content: Kiln-dry, MC19 or less.
- E. Stud Framing (2 by 2 through 2 by 6):
 - 1. Species: Any allowed under referenced grading rules.
 - 2. Grade: No. 2.
- F. Joist and Small Beam Framing (2 by 6 through 4 by 16):
 - 1. Machine stress-rated (MSR) as follows:
 - a. Fb-single (minimum extreme fiber stress in bending): 1350 psi.
 - b. E (minimum modulus of elasticity): 1,300,000 psi.
 - 2. Species: Douglas Fir-Larch.
- G. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No. 2 or Standard Grade.
 - 2. Boards: Standard or No. 3.

2.03 EXPOSED DIMENSION LUMBER

- A. Submit manufacturer's certificate that products meet or exceed specified requirements, in lieu of grade stamping.
- B. Grading Agency: West Coast Lumber Inspection Bureau (WCLIB).
- C. Sizes: Nominal sizes as indicated on drawings, S4S.
- D. Surfacing: S4S, S-DRY.
- E. Moisture Content: Kiln-dry or MC15.
- F. Stud Framing (2 by 2 through 2 by 6):
 - 1. Species: Douglas Fir.
 - 2. Grade: Clear.
- G. Joist and Small Beam Framing (2 by 6 through 4 by 16):
 - 1. Species: Douglas Fir.
 - 2. Grade: Select Structural.

2.04 EXPOSED BOARDS

- A. Submit manufacturer's certificate that products meet or exceed specified requirements, in lieu of grade stamping.
- B. Moisture Content: Kiln-dry (15 percent maximum).
- C. Surfacing: S4S, S-DRY.
- D. Species: Douglas Fir.
- E. Grade: No. 1, 1 Common, or Select.

2.05 CONSTRUCTION PANELS

- A. Wall Sheathing: Plywood, PS 1, Grade C-D, Exposure I.

2.06 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
 - 2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
 - 3. Anchors: Expansion shield and lag bolt type for anchorage to solid masonry or concrete.
- B. Die-Stamped Connectors: Hot dipped galvanized steel, sized to suit framing conditions.
 - 1. For contact with preservative treated wood in exposed locations, provide minimum G185 galvanizing per ASTM A653/A653M.

- C. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.
 - 1. For contact with preservative treated wood in exposed locations, provide minimum G185 galvanizing per ASTM A653/A653M.
- D. Sill Gasket on Top of Foundation Wall: 1/4 inch thick, plate width, closed cell plastic foam from continuous rolls.
- E. Sill Flashing: As specified in Section 07 6200.

2.07 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 - 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.
- B. Preservative Treatment:
 - 1. Manufacturers:
 - a. Arch Wood Protection, Inc: www.wolmanizedwood.com.
 - b. Viance, LCC: www.treatedwood.com.
 - c. Osmose, Inc: www.osmose.com.
 - 2. Preservative Pressure Treatment of Lumber Above Grade: AWWA U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft retention.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - b. Treat lumber exposed to weather.
 - c. Treat lumber in contact with roofing, flashing, or waterproofing.
 - d. Treat lumber in contact with masonry or concrete.
 - e. Treat lumber less than 18 inches above grade.
 - f. Treat lumber in other locations as indicated.

PART 3 EXECUTION

3.01 PREPARATION

- A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches and seal.
- B. Install sill gasket under sill plate of framed walls bearing on foundations; puncture gasket cleanly to fit tightly around protruding anchor bolts.
- C. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 FRAMING INSTALLATION

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
- B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
- C. Install structural members full length without splices.
- D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AFPA Wood Frame Construction Manual.
- E. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches of bearing at each end.
- F. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
- G. Provide bridging at joists in excess of 8 feet span at mid-span. Fit solid blocking at ends of members.
- H. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.

3.04 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- F. Specifically, provide the following non-structural framing and blocking:
 - 1. Cabinets and shelf supports.
 - 2. Wall brackets.
 - 3. Handrails.

4. Grab bars.
5. Towel and bath accessories.
6. Wall-mounted door stops.
7. Chalkboards and marker boards.
8. Wall paneling and trim.
9. Joints of rigid wall coverings that occur between studs.

3.05 INSTALLATION OF CONSTRUCTION PANELS

- A. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails or screws.
 1. Use plywood or other acceptable structural panels at building corners, for not less than 96 inches, measured horizontally.
 2. Provide inlet diagonal bracing at corners.
 3. Place water-resistive barrier horizontally over wall sheathing, weather lapping edges and ends.

3.06 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
- B. Allow preservative to dry prior to erecting members.

3.07 TOLERANCES

- A. Framing Members: 1/4 inch from true position, maximum.
- B. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.08 CLEANING

- A. Waste Disposal:
 1. Comply with applicable regulations.
 2. Do not burn scrap on project site.
 3. Do not burn scraps that have been pressure treated.
 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 06 6510

SOLID SURFACING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Horizontal applications of solid surfacing material.
- B. Vertical applications of solid surfacing material.

1.02 RELATED REQUIREMENTS

- A. Section 07 9005 - Joint Sealers: Sealant for joints.
- B. Section 12 3600 - Countertops

1.03 DEFINITIONS

- A. Solid surfacing: Sheets are non-porous, homogeneous, hygienic, renewable materials which consist of acrylic resins, ATH mineral fillers and pigments.

1.04 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, section 2-5.3 for shop drawings and submittals.
- B. Product Data: Provide data for solid surfacing material, color chart, product description, physical properties, MSDS data sheets.
- C. Shop Drawings: Indicate plans, dimensions, elevations, layout, cutouts, accessories, support or reinforcements, gloss levels, and edge treatments for each unique application instance, vertical and horizontal.
- D. Samples: of Final Color Selection, 2 x 2 inches minimum, 3 samples minimum.
- E. Certificate: Certify that products meet or exceed specified requirements.
- F. Manufacturer's Fabrication and Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and acceptable installation temperatures.
- G. Warranty: Submit manufacturer warranty and ensure forms have been completed in City's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Solid Surfacing Manufacturer Qualifications: Company specializing in solid surfacing fabrication with five years experience.
- B. Installer Qualifications: Company must be certified by the local master distributor of solid surfacing product.
- C. Applicable Standards:
 - 1. American National Standards Institute (ANSI)
 - 2. National Sanitary Foundation (NSF)
 - 3. National Electrical Manufacturers Association (NEMA)
 - 4. American Society for Testing and Materials (ASTM)

- D. Source Limitations: Obtain all solid surfacing materials and accessories for installation from single master distributor source.

1.06 STORAGE AND HANDLING

- A. Handle all materials in accordance with manufacturer instructions.
- B. Store all materials in a dry space at temperatures between 50 and 90 degrees F. Do not store in direct sunlight. Do not remove material from protective packaging until ready to use.

1.07 FIELD CONDITIONS

- A. Installation sites must be maintained at the ambient temperature and humidity as planned for the project for a minimum of 48 hours prior to installation, and continuously afterwards.

1.08 WARRANTY

- A. Contractor shall correct defective Work within a 1 year period after Date of Substantial Completion; remove and replace materials at no extra cost to City.
- B. Provide the manufacturer's 10 year warranty against defects in materials.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Solid Surfacing:
 - 1. MEGANITE, Inc; 1254 E. Lexington Ave, Pomona, CA 91766; Telephone: (800) 836-1118: www.meganite.com.
 - a. Master Distribution Network: www.meganite.com/na/sales_support_distributors.php.
 - 2. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.

2.02 MATERIALS

- A. Solid homogeneous sheet blended with acrylic resins, ATH mineral fillers and pigments to comply with industry standardized performance characteristics identified below.
- B. Thickness:
 - 1. 1/2" thick for horizontal applications.
 - 2. 1/4" thick for vertical applications.
- C. Color: per Interior Finish Schedule on drawings.
- D. Edge Detail: Round Over profile for all horizontal applications.
- E. Backsplash: All horizontal countertop applications to be provided with integral backsplash and sidesplash(s), 4 inches high typical unless otherwise noted and as indicated on drawings.

- F. Performance Characteristics – To meet or exceed the following:
1. Flame Spread Index < 25, in accordance with ASTM E 84, Class 1A
 2. Smoke Developed Index < 25, in accordance with ASTM E 84, Class 1A
 3. Stain Resistance to meet ANSI Z-124.3, no effect
 4. Wear and Cleanability to meet ANSI Z-124.3 passes
 5. Fungus Resistance to meet ASTM G21, does not support microbial growth
 6. Bacteria Resistance to meet ASTM G22, does not support microbial growth
 7. Meet NSF 51, approved
 8. Impact Resistance to meet NEMA LD3-3.3, 1/2 pound ball drop
 9. Color Stability to meet NEMA 3-3.3, no change
 10. Barcol Hardness to meet ASTM D2583, 60
 11. Tensile Strength to meet ASTM D 638, 6000 psi
 12. Flexural Strength to meet ASTM D790, 9000 psi
 13. Thermal Expansion to meet ASTM D696, 1.3” 10-6 in/in /°F
 14. Boiling Water Surface Resistance to meet NEMA LB3-3.5, no effect
 15. High Temperature Resistance to meet NEMA 3-3.5, no effect
 16. Water Absorption to meet ASTM D570, 0.04%
 17. Specific Gravity, 1.7

G. Accessories:

1. Manufacturer’s 2-part approved adhesive to provide non-porous, inconspicuous joints.
2. Silicone sealant adhesive, color matched to sheet panels.

H. Fabrication:

1. Fabrication to be completed by a MEGANITE certified fabricator and installer. Fabricated according to current MEGANITE Fabrication, and Industry-Accepted Standards.
2. Fabricate parts and components in manufacturing shop to greatest extent practical to size and shapes indicated, in accordance with approved shop drawings, and manufacturer’s or industry’s printed instructions.
3. Form joints between compounds using manufacturers’ standard joint adhesive to be inconspicuous and without voids. Reinforcement strips according to the current manual are required on all seams.
4. Rout and finish all component edges with clean and uniform work. All cutouts must be routed and then sanded for a smooth edge.
5. Repair or replace all defective or inaccurate work.

6. When applicable, comply with manufacturer's thermoforming requirements.
 - a. Heat entire piece, (do not spot heat) to a uniform 280°-325 °
 - b. Form pieces to shape prior to seaming and joining.
 - c. Sand edges and remove nicks and scratches.
 - d. Prevent blistering, whitening, and cracking during the forming process.
- I. Vertical Surfaces with silicone sealed seams:
 1. Wall panel material to be seamed with 1/8" wide seam joint using color-matched silicone; adhesive applied to solid substrate.
- J. Finishing:
 1. Surfaces should have a consistent and uniform finish.
 2. Select color from standard offering.
 - a. Select finish after reviewing samples.
 - b. Retention of finish depends upon color selected and intended use of the product.
 - c. Selection of any of manufacturer's standard finish levels to be included in initial project bid.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates where solid surface will be installed with fabricator for compliance with tolerances and other conditions at job site.
- B. Proceed to complete installation only after all unacceptable conditions are repaired and acceptable.

3.02 INSTALLATION

- A. Install solid surface according to manufacturer's Fabrication and Installation Manual.
 1. Install all components plumb, level, and rigid; scribed to adjacent surfaces; according to approved shop drawings and product data.
 2. Provide components in largest pieces available for proper installation.
 3. Form field joints using manufacturer's approved adhesive, with joint inconspicuous in finished work.
 4. Adhere undermount sinks/bowls to the countertop using the manufacturer's recommended adhesive.
 5. Cut and finish component edges with clean, sharp returns.
 6. Carefully remove scratches and clean entire surface.
 7. Install countertops with no more than 1/8" sag, bow or other variation from a straight line.

3.03 REPAIR

- A. Repair or replace any damaged work.

3.04 CLEAN AND PROTECT

- A. Keep components clean during transportation and installation.
- B. Clean all surfaces according to manufacturer's Care and Maintenance Guide.
- C. Remove all adhesives, caulks, sealants, etc. from surface of material.
- D. Cover and protect all surfaces to protect from damage until accepted by Resident Engineer.

3.05 SCHEDULE

- A. Horizontal Applications (countertops): Location and size per drawings. Color per Interior Finishes Schedule on drawings.
- B. Vertical Applications (wall): Location in Janitor's Closet, each level of building, as indicated on drawings. Color: Solid color per selection from manufacturer's standard colors at time of submittal.

3.01 EXAMINATION

- A. Examine substrates where solid surface will be installed with fabricator for compliance with tolerances and other conditions at job site.
- B. Proceed to complete installation only after all unacceptable conditions are repaired and acceptable.

END OF SECTION

SECTION 07 1300

SHEET WATERPROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sheet membrane waterproofing.
- B. Cant strips and other accessories.

1.02 RELATED REQUIREMENTS

- A. Section 07 6200 - Sheet Metal Flashing and Trim: Metal coping and counterflashing.
- B. Section 07 9005 - Joint Sealers: Sealant for joints in substrates.

1.03 REFERENCE STANDARDS

- A. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers- Tension; 2006a.
- B. ASTM D 570 - Standard Test Method for Water Absorption of Plastics; 1998 (Reapproved 2005).
- C. ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers; 2000 (Reapproved 2007).
- D. ASTM D 746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact; 2007.
- E. ASTM D 2240 - Standard Test Method For Rubber Property--Durometer Hardness; 2005.
- F. ASTM D 2581 - Standard Specification for Polybutylene (PB) Plastics Molding and Extrusion Materials; 2009.
- G. ASTM D 3020 - Standard Specification for Polyethylene and Ethylene Copolymer Plastic Sheeting for Pond, Canal, and Reservoir Lining; 1989.
- H. ASTM D 4068 - Standard Specification for Chlorinated Polyethylene (CPE) Sheeting for Concealed Water-Containment Membrane; 2009.
- I. ASTM D 4551 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Flexible Concealed Water-Containment Membrane; 1996 (Reapproved 2008).
- J. ASTM E 96/E 96M - Standard Test Methods For Water Vapor Transmission of Materials; 2005.
- K. NRCA ML104 - The NRCA Roofing and Waterproofing Manual; National Roofing Contractors Association; Fifth Edition, with interim updates.
- L. NRCA MS108 - The NRCA Waterproofing and Dampproofing Manual; National Roofing Contractors Association; Third Edition.

1.04 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, section 2-5.3 for shop drawings and submittals.

- B. Product Data: Provide data for membrane, surface conditioner, flexible flashings, joint cover sheet, and joint and crack sealants.
- C. Shop Drawings: Indicate special joint or termination conditions and conditions of interface with other materials.
- D. Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and acceptable installation temperatures.
- F. Warranty: Submit manufacturer warranty and ensure forms have been completed in City's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Membrane Manufacturer Qualifications: Company specializing in waterproofing sheet membranes with five years experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience.

1.06 STORAGE AND HANDLING

- A. Store all materials in a dry space at temperatures between 50 and 90 degrees F. Do not store in direct sunlight. Do not remove material from box until ready to use.

1.07 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.

1.08 WARRANTY

- A. Contractor shall correct defective Work within a 1 year period after Date of Substantial Completion; remove and replace materials concealing waterproofing at no extra cost to City.
- B. Provide ten 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 MANUFACTURERS

- A. Protecto Wrap Company or approved equal.

2.02 MEMBRANE MATERIALS

- A. Sheet Waterproofing - General: Modified bituminous membrane, adhesive bonded.
 - 1. Capable of resisting water head of 150 feet and preventing moisture migration to interior.
 - 2. Product: "High Softening Point Rain-Proof 60" manufactured by Protecto Wrap Company for use at roofing.
 - 3. Product: "Jiffy Seal 60" manufactured by Protecto Wrap Company for use at below grade waterproofing of concrete and block walls.

4. Product: "Jiffy Seal 500 Detail Tape" manufactured by Protecto Wrap Company for use in detailing around protrusions, drains, footings, and non-uniform surfaces.
- B. High Softening Point Modified Bituminous Membrane: Asphalt and polymer modifiers of styrene-butadiene-styrene (SBS) type, reinforced with non-woven polyester; smooth surfaced.
1. Protecto Wrap Company; Product RainProof 60 HSP High Performance Roof Underlayment; or approved equal.
 2. Formulated for seaming by self-adhering.
 3. Formulated for use under metal roofing.
 4. Thickness:
 - a. Rain-Proof 60: 60 mils +/- 5 mils.
 5. Color: White reflective topping, black bottom.
 6. Sheet Width: 36 inch.
 7. Tensile, Reinforcement only; 1400 psi, measured in accordance with ASTM D 882-A.
 8. Ultimate Elongation: 500 percent, measured in accordance with ASTM D 412.
 9. Puncture Resistance: 80 pounds, measured in accordance with ASTM D 154
 10. Water Absorption: .23 percent increase in weight, maximum, measured in accordance with ASTM D 570, water immersion.
 11. Water Vapor Permeability: 0.003 perm inch, measured in accordance with ASTM E 96.
 12. Water Absorption: 0.23.
 13. UV Protection: Membrane to have a reflective fabric on face for UV stability. Membrane to have ability to be left exposed for up to 90 days with no damage to membrane caused by UV radiation.
 14. Softening Point: 250 degrees F minimum.
- C. Modified Bituminous Membrane: Asphalt and polymer modifiers of styrene-butadiene-styrene (SBS) type, reinforced with non-woven polyester; reinforcement sandwiched between two layers of rubberized asphalt, with release film.
1. Formulated for seaming by self-adhering.
 2. Thickness: 60 mils.
 3. Sheet Width: 60 inch.
 4. Tensile Strength, Membrane: 425 psi.
 5. Tensile Strength, Polyester Reinforcement: 3200 psi, as measured in accordance with ASTM D 412.
 6. Tensile Strength: 600 psi, measured in accordance with ASTM D 412.

7. Ultimate Elongation: 500 percent, measured in accordance with ASTM D 412.
 8. Puncture Resistance: 80 lb. (356 N), measured in accordance with ASTM E154.
 9. Pliability: Passes, as measured in accordance with ASTM D146.
 10. Water Absorption: 0.23 percent increase in weight, maximum, measured in accordance with ASTM D 570, water immersion.
 11. Water Vapor Permeability: 0.003 perm inch, measured in accordance with ASTM E 96/E 96M.
 12. Unaffected by exposure to fungi in soil for 16 weeks, as tested in accordance with GSA-PBS 07115.
- D. Modified Bituminous Membrane Detail Tape: Asphalt and polymer modifiers of styrene-butadiene-styrene (SBS) type, unreinforced conformable sheet, with release film.
1. Formulated for seaming by self-adhering.
 2. Thickness: 60 mils.
 3. Sheet Width: 6 and 12 inch.
 4. Ultimate Elongation: 1,500 percent, measured in accordance with ASTM D 412.
 5. Pliability: Passes, as measured in accordance with ASTM D146.
 6. Water Absorption: 0.23 percent increase in weight, maximum, measured in accordance with ASTM D 570, water immersion.
 7. Water Vapor Permeability: 0.003 per inch, measured in accordance with ASTM E 96/E 96M.
 8. Resistance to Hydrostatic Head: 150 feet of water.
- E. Primer: As recommended by membrane manufacturer.
- F. Seaming Materials: As recommended by membrane manufacturer.
- G. Membrane Sealant: As recommended by membrane manufacturer.
- H. Adhesives: As recommended by membrane manufacturer.
- I. Thinner and Cleaner: As recommended by adhesive manufacturer, compatible with sheet membrane.

2.03 ACCESSORIES

- A. Sealant for Substrate Surfaces: Type as specified in Section 07 9005 and approved by membrane manufacturer.
- B. Foundation wall Primer: Protecto Wrap No. 100 VOC Primer, for use on vertical surfaces or approved equal.
- C. Roof Sheathing Primer: Protecto Wrap No. 80 VOC Primer, use as necessary on roof sheathing or approved equal.

- D. Membrane Sealant: Protecto Wrap No. JS160H Mastic, for sealing detail cuts and membrane terminations or approved equal.
- E. Protection Board: 0.38 inch thick prefabricated, high-compression, dimpled drainage board; Protecto Drain 2000V drainage board manufactured by Protecto Wrap Company or approved equal.
- F. Cant Strips: Premolded composition material.
- G. Flexible Flashings: Type recommended by membrane manufacturer.
- H. Counterflashings: as specified in Section 07 6200.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify substrate surfaces are durable; free of matter detrimental to adhesion or application of waterproofing system.
- C. Verify that items that penetrate surfaces to receive waterproofing are securely installed.

3.02 PREPARATION

- A. Protect adjacent surfaces not designated to receive waterproofing.
- B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions. Vacuum substrate clean.
 - 1. If roof deck cannot be cleaned to new plywood surface or the deck is damp or below 40 degrees F, Protecto Wrap #80 Primer should be applied prior to the application of the membrane.
- C. Apply Protecto Wrap No. 100 Primer to all clean and preped vertical concrete and masonry surfaces prior to installation of Jiffy Seal 140/60. Do not apply primer to wet surfaces. For green concrete, use Jiffy Seal No. 80 Green Concrete Primer, or approved equal.
- D. Do not apply waterproofing to surfaces unacceptable to membrane manufacturer.
- E. Seal cracks and joints with sealant using depth to width ratio as recommended by sealant manufacturer.

3.03 INSTALLATION - MEMBRANE

- A. Roof Membrane:
 - 1. Nail all metal flashings along and directly on top of the sheathing.
 - 2. Install membrane waterproofing in accordance with manufacturer's instructions.
 - a. Roof Slope less than 4"/12" use Rain-Proof 60.
 - 3. Roll out membrane. Minimize wrinkles and bubbles.
 - 4. Use one of Protecto Wrap three approved installation techniques; remove release film and ensure proper contact with substrate per manufacturer's written instructions and recommendations.

5. Weather lap joints on sloped substrate in direction of drainage. Seal joints and seams.
 6. Overlap edges 2" minimum and ends 6" minimum.
 7. Trim membrane flush with the outside edge of all flashing metal. Roll the membrane firmly on top of all flashing metal to gain maximum surface contact to all edges of the roof.
 8. If the membrane is damaged or requires repairing, clean the area and lightly prime the membrane with #80 primers at least 6 inches beyond the damaged area. Cut membrane patch and roll firmly. Apply a trowel bead of JS160H SBS Mastic to edges of patch.
 9. Seal membrane and flashings to adjoining surfaces.
- B. Foundation Membrane:
1. Overlap edges and ends and seal by method recommended by manufacturer, minimum 3 inches. Seal permanently waterproof.
 2. Reinforce membrane with multiple thickness of membrane material over joints, whether joints are static or dynamic.
 3. Install flexible flashings. Seal items penetrating through membrane with flexible flashings. Seal watertight to membrane.
 4. Corners: For all horizontal corners, use cant strips or fillets and Jiffy Seal 500; install according to manufacturer's written instructions.
 5. 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. Scribe and cut boards around projections, penetrations, and interruptions.
- C. Adhere protection board to substrate with compatible adhesive.

3.05 FIELD QUALITY CONTROL

- A. testing and inspection services will be provided. Contractor shall provide temporary construction and materials for testing.

3.06 PROTECTION

- A. Do not permit traffic over unprotected or uncovered membrane.

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.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 – Miscellaneous Rough Carpentry: Wood nailers, curbs and blocking.
- B. Section 07 9005 – Joint Sealers.

1.03 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2005.
- B. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2009a.
- C. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007.
- D. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association; 2003.

1.04 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Fabricate and install copings capable of resisting the forces according to recommendations in FMG Loss Prevention Data Sheet 1-49.
- C. For sheet metal flashing and trim provided under this Section that is part of the roofing assembly, comply with the performance requirements herein and with the applicable performance requirements indicated in Section 07 6100 Sheet Metal Roofing.
 - 1. Sheet metal copings providing edge securement for low-sloped roofs shall be in compliance with the 2007 California Building Code, and shall be fabricated, installed, and tested in compliance with ANSI/SPRI ES-1.
- D. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

- E. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.
 - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F material surfaces.

1.05 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, section 2-5.3 for shop drawings and submittals.
- B. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.
- C. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled works. Include the following:
 - 1. Identification of material, thickness, weight, and finish for each item and location in Project.
 - 2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
 - 3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 - 4. Details of termination points and assemblies, including fixed points.
 - 5. Details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction.
 - 6. Details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings as applicable.
 - 7. Details of special conditions.
 - 8. Details of connections to adjoining work.
 - 9. Detail formed flashing and trim at a scale of not less than 3 inches per foot.
- D. Samples for Initial Selection: For each type of sheet metal flashing, trim, and accessory indicated with factory-applied color finishes involving color selection.
- E. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
 - 1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
 - 2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
 - 3. Accessories and Miscellaneous Materials: Full-size Sample.

- F. Qualification Data: For qualified fabricator.
- G. Test Reports: For copings, indicating compliance with performance requirements.
- H. Warranty: Sample of special warranty.

1.06 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing, trim, and accessories to include in maintenance manuals.

1.07 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.
- C. Preinstallation Conference: Conduct conference at Project site.
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
 - 2. Review methods and procedures related to sheet metal flashing and trim.
 - 3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
 - 4. Review special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect sheet metal flashing.
 - 5. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- C. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

1.09 WARRANTY

- A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
 - 1. Exposed Coil-Coated Finishes:
 - a. Three-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - b. Color: Custom color to match Architect's sample.
 - 2. Aluminum flashing shall be used in areas exposed to view, but shall not be used in any below-grade applications, nor shall it be used in any locations subject to contact with concrete surfaces.
- C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 316, dead soft, fully annealed.
 - 1. Finish: No. 4 (polished directional satin)
 - 2. Stainless steel sheet shall be limited to concealed areas only, in below-grade conditions, and in areas subject to contact with concrete.
- D. Metallic-Coated Steel Sheet (Galvanized): Restricted flatness steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
 - 1. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation; structural quality.
 - 2. Color: To match color selected for Sheet Metal Roofing.

3. Galvanized sheet steel shall be limited to rooftop applications only, that are not visible from any vantage point on the site, nor visible from any vantage point from within the building.

2.02 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
 1. Thermal Stability: ASTM D 1970; stable after testing at 350 deg F.
 2. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Protecto Wrap RainProof 40.
 - b. Grace Construction Products, a unit of W. R. Grace & Co.; Ultra.
 - c. Owens Corning; WeatherLock Metal High Temperature Underlayment
 - d. Carlisle Coatings & Waterproofing Inc.; CCW WIP 300HT.
- B. Slip Sheet: Building paper, 3-lb/100 sq. ft. minimum, rosin sized.

2.03 ACCESSORIES

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal unless otherwise indicated.
- B. Fasteners: Screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.
 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.
 - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
 - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
 3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
 4. Fasteners for Zinc-Tin Alloy-Coated Stainless-Steel Sheet: Series 300 stainless steel.
 5. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329 or Series 300 stainless steel.

- C. Solder:
 1. For Stainless Steel: ASTM B 32, Grade Sn60, with an acid flux of type recommended by stainless-steel sheet manufacturer.
 2. For Zinc-Coated (Galvanized) Steel: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
- E. Elastomeric Sealant: ASTM C 920, elastomeric polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- 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. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- H. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- I. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.
- J. Primer: Zinc chromate type.
- K. Protective Backing Paint: Zinc molybdate alkyd.
- L. Sealant: Type C specified in Section 07 9005.
- M. Plastic Cement: ASTM D 4586, Type I.
- N. Reglets: Surface mounted type, galvanized steel; face and ends covered with plastic tape.

2.04 FABRICATION

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
 1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 2. Obtain field measurements for accurate fit before shop fabrication.
 3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.

- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.
- D. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" and by FMG Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured.
- G. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use
- H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.
- I. Do not use graphite pencils to mark metal surfaces.

2.05 LOW-SLOPE SHEET METAL FABRICATION

- A. Copings: Fabricate in minimum 96-inch- long, but not exceeding 10-foot- long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, seal, and solder or weld watertight.
 - 1. Coping Profile: As indicated on Drawings.
 - 2. Joint Style: Butt with 12-inch wide, concealed back-up plate.
 - 3. Fabricate from the following materials:
 - a. Aluminum: As indicated on Drawings.
 - 4. Finish: Three-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
 - a. Color: Custom color to match Architect's sample.
- B. Roof and Roof to Wall Transition: Fabricate from the following materials:
 - 1. Aluminum: 0.050 inch thick where exposed to view and not subject to contact with concrete.
 - 2. Stainless Steel: 0.025 inch thick, in areas subject to contact with concrete and where exposed to view.
 - 3. Galvanized Steel: 0.034 inch thick. At roof flashing applications not exposed to public view.

- C. Counterflashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch thick, not exposed to public view
- D. Flashing Receivers: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch thick, not exposed to public view
- E. Roof-Penetration Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch thick, not exposed to public view.
- F. Roof-Drain Flashing: Fabricate from the following materials:
 - 1. Stainless Steel: 0.016 inch thick.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work, deliver to Construction Manager.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Install surface mounted reglets true to lines and levels. 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.

3.03 INSTALLATION - GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 - 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
 - 4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

5. Install sealant tape where indicated.
 6. Torch cutting of sheet metal flashing and trim is not permitted.
 7. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
1. Coat back side of uncoated aluminum and stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate metal framing not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal joints as shown and as required for watertight construction.
1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
 2. Prepare joints and apply sealants to comply with requirements in Section 07 9005 Joint Sealers.
- F. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches, except reduce pre-tinning where pre-tinned surface would show in completed Work.
1. Do not solder metallic-coated steel and aluminum sheet.
 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.
 3. Stainless-Steel Soldering: Tin edges of uncoated sheets using solder recommended for stainless steel and acid flux. Promptly remove acid flux residue from metal after tinning and soldering. Comply with solder manufacturer's recommended methods for cleaning and neutralization.

3.04 INSTALLATION - UNDERLAYMENT

- A. General: Install underlayment as indicated on Drawings.
- B. Polyethylene Sheet: Install polyethylene sheet with adhesive for anchorage to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped and taped joints of not less than 2 inches.
- C. Felt Underlayment: Install felt underlayment with adhesive for temporary anchorage to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- D. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Apply primer if required by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer rather than nails for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps with roller. Cover underlayment within 14 days.

3.05 INSTALLATION – ROOF FLASHING

- A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- B. Copings: Comply with performance requirements. Anchor to resist uplift and outward forces according to FMG Loss Prevention Data Sheet 1-49 for specified wind zone and as indicated. Install with laps, joints, and seams that will be permanently watertight and weather resistant.
 - 1. Align joints in coping with joints in adjacent construction.
- C. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.
- D. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints a minimum of 4 inches and bed with sealant
- E. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof.

3.06 TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.07 FIELD QUALITY CONTROL

- A. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

3.08 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.
- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.
- E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 07 9005

JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sealants and joint backing.
- B. Precompressed foam sealers.
- C. Hollow gaskets.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. ASTM C 834 - Standard Specification for Latex Sealants; 2010.
- B. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications; 2008.
- C. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 2010.
- D. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 2009.
- E. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with other sections referencing this section.

1.05 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, Section 2-5.3 for Shop Drawings and Submittals.
- B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, limitations, and color availability.
- C. Samples: Submit two samples,.25x4 inch in size illustrating sealant colors for selection.
- D. Manufacturer's Installation Instructions: Indicate special procedures, surface preparation, and perimeter conditions requiring special attention.
- E. Submit Applicator Qualifications, as noted below in 1.06 Quality Assurance, line C.

1.06 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document covering installation requirements on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- C. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years experience.

1.07 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.08 WARRANTY

- A. See Administrative Requirements for Closeout Submittals and additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Silicone Sealants:
 - 1. Bostik Inc; Product CHEM-CALK 1200: www.bostik-us.com.
 - 2. Pecora Corporation; Product 890 NST: www.pecora.com.
 - 3. BASF Construction Chemicals-Building Systems; Product Omniseal 50: www.chemrex.com.
 - 4. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.
- B. Polyurethane Sealants:
 - 1. Bostik Inc; Product CHEM-CALK 900: www.bostik-us.com.
 - 2. Pecora Corporation; Product DynaTrol I XL: www.pecora.com.
 - 3. BASF Construction Chemicals-Building Systems; Product NP-2: www.chemrex.com.
 - 4. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.
- C. Polysulfide Sealants:
 - 1. Pecora Corporation; Product Synthacalk GC2+: www.pecora.com.
 - 2. BASF Construction Chemicals-Building Systems; Product Sonalastic Polysulfide sealant: www.chemrex.com.
 - 3. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.
- D. Acrylic Sealants:
 - 1. Tremco Global Sealants; Product Tremflex 834: www.tremcosealants.com.
 - 2. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.

- E. Butyl Sealants:
 1. Bostik Inc; Product CHEM-CALK 300: www.bostik-us.com.
 2. Pecora Corporation; Product BC-158: www.pecora.com.
 3. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.
- F. Acrylic Emulsion Latex Sealants:
 1. Bostik Inc; Product CHEM-CALK 600 ACRYLIC LATEX: www.bostik-us.com.
 2. Pecora Corporation; Product AC-20 +SILICONE: www.pecora.com.
 3. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.
- G. Preformed Compressible Foam Sealers:
 1. Sandell Manufacturing Company, Inc; Product Polyseal: www.sandellmfg.com.
 2. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.

2.02 SEALANTS

- A. Sealants and Primers - General: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
- B. Type A - General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; single, or multi- component.
 1. Color: color as selected.
 2. Applications: Use for:
 - a. Control, expansion, and soft joints in masonry.
 - b. Joints between concrete and other materials.
 - c. Joints between metal frames and other materials.
 - d. Other exterior joints for which no other sealant is indicated.
- C. Type B - Exterior Expansion Joint Sealer: Precompressed foam sealer; urethane with water-repellent;
 1. Color: Black.
 2. Size as required to provide weathertight seal when installed.
 3. Provide product recommended by manufacturer for traffic-bearing use.
 4. Applications: Use for:
 - a. Exterior wall expansion joints.
- D. Type C - Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, nondrying, nonskinning, noncuring.
 1. Applications: Use for:
 - a. Concealed sealant bead in sheet metal work.

- b. Concealed sealant bead in siding overlaps.
- E. Type D - General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.
 - 1. Color: Colors as selected.
 - 2. Applications: Use for:
 - a. Interior wall and ceiling control joints.
 - b. Joints between door and window frames and wall surfaces.
 - c. Other interior joints for which no other type of sealant is indicated.
- F. Type E - Bathtub/Tile Sealant: White silicone; ASTM C 920, Uses I, M and A; single component, mildew resistant.
 - 1. Applications: Use for:
 - a. Joints between plumbing fixtures and floor and wall surfaces.
 - b. Joints between kitchen and bath countertops and wall surfaces.
- G. Type F - Acoustical Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
 - 1. Applications: Use for concealed locations only:
 - a. Sealant bead between top stud runner and structure and between bottom stud track and floor.
- H. Type G - Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Grade P, Class 25, Uses T, M and A; single or multi- component.
 - 1. Color: Colors as selected.
 - 2. Applications: Use for:
 - a. Expansion joints in floors.
- I. Type H - Sealant for Continuous Water Immersion: Polysulfide; ASTM C 920, Grade NS, Class 25, Uses I, M, and A; approved by manufacturer for continuous water immersion; single component.
 - 1. Color: Standard colors matching finished surfaces.
- J. Type J - Concrete Paving Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Class 25, Uses T, I, M and A; single component.
 - 1. Color: Color as selected.
 - 2. Applications: Use for:
 - a. Joints in sidewalks and vehicular paving.

2.03 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces and joint openings are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.
- D. Protect elements surrounding the work of this section from damage or disfigurement.

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 C 1193.
- C. Perform acoustical sealant application work in accordance with ASTM C 919.
- D. 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.
- E. Install bond breaker where joint backing is not used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- H. Tool joints concave.
- I. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch below adjoining surface.

3.04 CLEANING

- A. Clean adjacent soiled surfaces.

3.05 PROTECTION

- A. Protect sealants until cured.

3.06 SCHEDULE

- A. Exterior Joints for Which No Other Sealant Type is Indicated: Type A; colors as selected.
- B. Control and Expansion Joints in Paving: Type J.
- C. Exterior Wall Seismic Movement Joints: Type B.

- D. Exterior Wall Expansion Joints: Type B.
- E. Joints Between Concrete Panels and Between Panels and Adjacent Work: Type A.
- F. Control, Expansion, and Soft Joints in Masonry, and Between Masonry and Adjacent Work: Type A.
- G. Lap Joints in Exterior Sheet Metal Work: Type C.
- H. Butt Joints in Exterior Metal Work and Siding: Type C.
- I. Joints Between Exterior Metal Frames and Adjacent Work (except masonry): Type A.
- J. Under Exterior Door Thresholds: Type A.
- K. Interior Joints for Which No Other Sealant is Indicated: Type D; colors as shown on the drawings.
- L. Control and Expansion Joints in Interior Concrete Slabs and Floors: Type G.
- M. Joints between Plumbing Fixtures and Walls and Floors, and Between Countertops and Walls: Type E.
- N. In STC-Rated Walls, Between Metal Stud Track/Runner and Adjacent Construction and Between Outlet Boxes and Gypsum Board: Type F.

END OF SECTION

SECTION 08 1113

HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated steel doors and frames.

1.02 RELATED REQUIREMENTS

- A. Section 08 7100 - Door Hardware.

1.03 REFERENCE STANDARDS

- A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2003.
- B. ANSI A250.3 - Test Procedure and Acceptance Criteria for Factory-Applied Finish Painted Steel Surfaces for Steel Doors and Frames; 2007.
- C. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 2003.
- D. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 1998 (R2004).
- E. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2009a.
- F. BHMA A156.115 - Hardware Preparation in Steel Doors and Steel Frames; 2006.
- G. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2007.
- H. NAAMM HMMA 863 - Guide Specifications for Detention Security Hollow Metal Doors and Frames. The National Association of Architectural Metal Manufacturers; 2004.

1.04 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, Section 2-5.3 for Shop Drawings and Submittals.
- 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 grade standard.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.
 - 1. Elevations of each door design.
 - 2. Details of doors, including vertical and horizontal edge details and metal thicknesses.

3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 4. Locations of reinforcement and preparations for hardware.
 5. Details of each different wall opening condition.
 6. Details of anchorages, joints, field splices, and connections.
 7. Details of accessories.
 8. Details of moldings, removable stops, and glazing.
- D. Samples: Submit two samples of metal, 2 x 2 inches in size showing factory finishes, colors, and surface texture.
 - E. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.
 - F. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.
 - G. Submit Manufacturer Qualifications, as noted below in 1.05 Quality Assurance, line A.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Maintain at the project site a copy of all reference standards dealing with installation.
- C. Source Limitations: Obtain hollow metal work from single source from single manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store in accordance with NAAMM HMMA 840.
- B. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.
 1. Provide additional protection to prevent damage to finish of factory-finished units.
- C. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- D. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch- high wood blocking. Do not store in a manner that traps excess humidity.
 1. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

1.07 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.08 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Steel Doors and Frames:
 - 1. Assa Abloy Ceco, Curries, or Fleming: www.assaabloydss.com.
 - 2. Windsor Republic Doors: www.republicdoor.com.
 - 3. Steelcraft: www.steelcraft.com.
 - 4. Door Components, Inc. (DCI): www.doorcomponents.com.
 - 5. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.

2.02 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 or A60 metallic coating.
- C. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z coating designation; mill phosphatized.
 - 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- E. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow metal frames of type indicated.
- F. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.
- G. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
- H. Glazing: Comply with requirements in Division 8 Section "Glazing."
- I. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.03 HOLLOW METAL DOORS

- A. General: Provide doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8.
 - 1. Design: Flush panel.
 - 2. Core Construction: Manufacturer's standard vertical steel-stiffener core, polystyrene, polyurethane, polyisocyanurate, or mineral-board to meet the performance requirements indicated.
 - 3. Vertical Edges for Single-Acting Doors: Manufacturer's standard.
 - 4. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- thick, end closures or channels of same material as face sheets.
 - 5. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."
- B. Interior Doors: Face sheets fabricated from metallic-coated steel sheet. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
 - 1. Level 2 and Physical Performance Level B (Heavy Duty), Model 2 (Seamless).
 - a. Width: As indicated on Drawings.
- C. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- D. Fabricate concealed stiffeners and hardware reinforcement from either cold- or hot-rolled steel sheet.

2.04 HOLLOW METAL FRAMES

- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Interior Frames: Fabricated from metallic-coated steel sheet.
 - 1. Fabricate frames with mitered or coped corners.
 - 2. Fabricate frames as full profile welded unless otherwise indicated.
 - 3. Frames for Level 3 Steel Doors, 16 gauge.
- C. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

2.05 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.

- B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch thick, and as follows:
 - 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.06 MOULDINGS

- A. Moldings for Panels in Doors: Minimum 0.032 inch thick, fabricated from same material as door face sheet in which they are installed.
- B. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch high unless otherwise indicated.

2.07 ACCESSORY MATERIALS

- A. Grout for Frames: Portland cement grout of maximum 4-inch slump for hand troweling; thinner pumpable grout is prohibited.
- B. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.
- C. Temporary Frame Spreaders: Provide for all factory- or shop-assembled frames.
- D. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- E. Ceiling Struts: Minimum 1/4-inch-thick by 1-inch- wide steel.
- F. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

2.08 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117.
- C. Hollow Metal Doors:
 - 1. Exterior Doors: Provide weep-hole openings in bottom of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
 - 2. Infill Panels: Factory cut openings in doors.
- D. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 - 2. Sidelight Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.

3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 4. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
 5. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
 6. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Two anchors per jamb up to 60 inches high.
 - 2) Three anchors per jamb from 60 to 90 inches high.
 - 3) Four anchors per jamb from 90 to 120 inches high.
 - 4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
- E. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.
- F. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 8 Section "Door Hardware."
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
 2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
 3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
 4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 16 Sections.
- G. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
1. Single Infill Panel: Provide fixed stops and moldings welded on secure side of hollow metal work.
 2. Provide fixed frame moldings on outside of exterior frames.
 3. Provide loose stops and moldings on inside of hollow metal work.

2.09 FINISH MATERIALS

- A. Prime and Paint Factory Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria;

recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

2. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
 1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 2. Alignment: Plus or minus 1/16 in., measured at jambs on a horizontal line parallel to plane of wall.
 3. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 4. Plumbness: Plus or minus 1/16 in., measured at jambs on a perpendicular line from head to floor.
- C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.03 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11.
 1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. At fire-protection-rated openings, install frames according to NFPA 80.
 - b. Where frames are fabricated in sections because of shipping or

- handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
- c. Install frames with fixed infill panel stops located on secure side of opening.
 - d. Install door silencers in frames before grouting.
 - e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - f. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
 - g. Field apply bituminous coating to backs of frames that are filled with grout containing antifreezing agents.
2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
 3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
 4. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
1. Non-Fire-Rated Standard Steel Doors:
 - a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
 - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
 - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
- D. Infill Panels: Comply with installation requirements in Section 05 5305 Steel Gratings and with hollow metal manufacturer's written instructions.
1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

3.04 TOLERANCES

- A. Clearances Between Door and Frame: As specified in ANSI A250.8.
- B. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.05 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow metal work immediately after installation.
- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- D. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

3.06 SCHEDULE

- A. Refer to Door Schedule on the drawings.

END OF SECTION

SECTION 08 4229

AUTOMATIC ENTRANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Automatic sliding doors, with frames.
- B. Actuators and safety devices.
- C. Maintenance.

1.02 REFERENCE STANDARDS

- A. BHMA A156.10 - American National Standard for Power Operated Pedestrian Doors; Builders Hardware Manufacturers Association; 2005 (ANSI/BHMA A156.10).
- B. BHMA A156.19 - American National Standard for Power Assist and Low Energy Power Operated Doors; Builders Hardware Manufacturers Association; 2007 (ANSI/BHMA A156.19).
- C. NEMA MG 1 - Motors and Generators; National Electrical Manufacturers Association; 2007.
- D. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.
- E. NFPA 101 - Life Safety Code; National Fire Protection Association.
- F. UL (ECMD) - Electrical Construction Materials Directory; Underwriters Laboratories Inc.; current edition.
- G. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.
- H. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
- I. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- J. American Association of Automatic Door Manufacturers (AAADM).

1.03 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, Section 2-5.3 for Shop Drawings and Submittals.
- B. Shop Drawings:
 - 1. Indicate layout and dimensions; head, jamb, and sill conditions; elevations; components, anchorage, recesses, materials, and finishes, electrical characteristics and connection/anchoring requirements.
 - 2. Identify installation tolerances required, assembly conditions, routing of service lines and conduit, and locations of operating components and boxes.
- C. Product Data: Provide data on system components, sizes, features, and finishes.

- D. Samples: Submit two samples of exposed to view hardware, mat with frame, and attachment hardware.
- E. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and manufacturer's hardware and component templates.
- F. Maintenance Contract.
- G. Project Record Documents: Record actual locations of concealed equipment, services, and conduit.
- H. Maintenance Data: Include manufacturer's parts list and maintenance instructions for each type of hardware and operating component.
- I. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Resident Engineer's name and registered with manufacturer.
- J. Maintenance Materials: Furnish the following for Resident Engineer's use in maintenance of project.
 - 1. Wrenches and other tools required for maintenance of equipment.

1.04 QUALITY ASSURANCE

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years of documented experience.

1.05 ON SITE FIELD CONDITIONS REQUIRED PRIOR TO INSTALLATION

- A. Approved shop drawings must be referenced and confirmed by General Contractor before fabrication.
- B. Opening must be verified to be plumb, straight and secure.
- C. It is the duty of the General Contractor to make door installer aware of any non-conforming conditions or equipment as indicated in the shop drawings.
- D. General Contractor is required to coordinate the layout and installation of the automatic door equipment connection to power supplies.

1.06 WARRANTY

- A. Correct defective Work within a five year period after Date of Substantial Completion.
- B. Provide two year manufacturer warranty for motor and compressor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Automatic Entrance Doors:
 - 1. Record-USA; Product 5122 Series: www.record-usa.com.

2. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.

2.02 AUTOMATIC ENTRANCE DOORS

- A. Automatic Sliding Door: Full breakout telescopic operation, three leaf track-mounted, electric operation, extruded aluminum glazed door, with frame, and operator concealed overhead.
 1. Operation: Power open, power close operation.
 2. "Outside" Side Actuator: Motion sensor.
 3. "Inside" Side Actuator: Motion sensor.
 4. Hold Open: Toggle switch at inside head of doors.
 5. Door Frame: All structural aluminum sections shall be 6063-T5 alloy with exposed surfaces anodized to matching architectural finish. Extruded aluminum header and cover shall conceal replaceable roller track, and integrated anti-derail extrusion. Concealed bottom door guides shall provide stable movement of sliding panels.
 6. Door and Frame Finish: 313-R1 two-step, hard coat dark bronze anodized for Class 1 architectural finish.
 7. Weatherstripping: Mohair weather pile shall run full height at front of sliding doors, back of sidelites, and between the door and sidelites.
 8. Narrow Stile Doors: 2-1/2 inch top rails, 3-1/2 inch bottom rails, 2 inch stiles.
 9. Glazing: 1" sealed insulating glazing units. Glass color to match existing.
 10. Entrance Size: Nominal opening for door and integrated hardware is approximately 6 foot wide x 9 foot high - EXACT ROUGH OPENING DIMENSIONS OF EXISTING CONSTRUCTION TO BE FIELD DIMENSIONED AND VERIFIED AFTER REMOVAL OF EXISTING DOORS.
 11. Breakaway door requirements of not more than 50 lbf provided power fails and no more than 15 lbf to open door to specified minimum required width.
 12. Closing force of no more than 30 lb required preventing the door from closing at all times.
 13. Overhead Roller Track: Shall be continuous anodized aluminum. Track shall be replaceable.
 1. Composition: Anodized aluminum, lined with rubber compound
 2. Mounting: Captured within extruded channel in header
 3. Isolation: Neoprene isolation member to reduce noise
 4. Warranty: Lifetime
 14. Overhead Rollers: Shall be manufacturer's standard carriage consisting of four 2" rollers, per leaf and two anti-rise rollers. Roller composition is manufactured from robust polymer and self-lubricating steel ball bearings.
 1. Minimum number of load bearing rollers per leaf: Four (4)
 2. Minimum diameter of rollers: 2"

3. Warranty: minimum 3 years

2.03 DOOR OPERATORS

- A. Door Operators - General Requirements: Comply with BHMA A156.10, BHMA A156.19, and UL 325, as applicable.
1. Select equipment to accommodate medium pedestrian traffic and weight of doors.
 2. Provide equipment capable of operating, holding open, and closing doors under positive and negative wind pressures calculated in accordance with applicable code.
 3. Operating Temperature Range: Minus 30 degrees Fahrenheit to 130 degrees Fahrenheit ambient.
 4. Provide operators that are fully adjustable for opening and closing speeds, checking speeds, and hold-open time.
 5. Sliding Door Operators: Provide for manual open, close, and break-away operation of door leaves in the event of power failure. Maximum Force for Break-Away Function: 50 lbf.
 - a. Sliding Door and Sidelites shall be capable of being swung out to 90 degrees from any position of slide movement and require no more than 50 lbf of force applied at the lock stile to open.
 6. Conform to applicable code for automatic release of control drive unit to permit manual opening of doors.

2.04 ACTUATORS

- A. Combined Activation and Safety Sensor System: Shall be 24 VDC, class II circuits; and shall be adjusted and installed in accordance with ANSI/BHMA A156.10. The installation shall be performed by an AADM Certified Technician with a minimum of one (1) year in the service related field.
1. Combined Activation and Presence Sensors: The combined activation and presence sensors shall consist of active infrared or microwave technology. The sensors shall be header mounted on each side of the door, centrally located in the opening. The sensor heads will be housed in one unit. The adjustments to the detection pattern should be completed by an AAADM certified technician in accordance with ANSI/BHMA 156.10 safety standards and compliance codes.
 2. Hold-Open Beams: Two infrared photoelectric beams to be mounted in vertical rails of the sidelite or in the vertical jamb, with the photoelectric beam wired directly to the micro processor. The photo eye beams are mounted at 24" and 48" respectively above finish floor. Breaking either emitter beam will cause the door to open, remain open until the path between the emitter and diodes beams are cleared. Once cleared, the signal is reinstated and the door will close and be fully functional.

2.05 HARDWARE

- A. Provide units in sizes and types recommended by automatic entrance door and hardware manufacturers for entrance and uses indicated.
- B. ANSI A156.5, Grade 1, 2-point locking provided and installed in the strike rail. Manufacturer's standard hook bolt lock operated by exterior cylinder and interior thumb turn.
 - 1. Hook Bolt Latch: Laminated steel, latching into jamb or strike rail.
 - 2. Two-Point Locking: Provide locking device that provide locking capability into the adjacent strike rail or jamb and extends a flush bolt into the overhead carriage assembly.
- C. Flush panic exit device, recessed in 5" muntin bar.
- D. Self monitoring panel: Provide manufacturer's standard jamb mounted control panel for complete control and reporting of the automatic sliding door. Control panel capabilities include, but are not limited to the following:
 - 1. Power on/off
 - 2. Full open/partial open
 - 3. Hold open/closed/automatic operation
 - 4. Daily safety check reminder
 - 5. Diagnostic reporting
 - 6. Door cycle count
 - 7. Planned maintenance Reminders
- E. Weather stripping to be along the perimeter all door panels and side-lites to reduce energy loss. Standard weather stripping includes the following:
 - 1. Adjustable nylon sweep in the bottom of sliding doors
 - 2. Double pile weather stripping on the strike rail of sliding door.
 - 3. Single pile weather stripping at the following locations:
 - a. Between the carriage and assembly and header
 - b. Lead stile of sidelite
 - c. Pivot stile of sidelite

2.06 ELECTRICAL CHARACTERISTICS AND COMPONENTS

- A. The automatic sliding door shall consume no more than 100W of electricity at full load power.
- B. Section 16 contractor to provide 120V, 1 phase, 5 amp dedicated circuit per automatic sliding entrance.
- C. Motors: NEMA MG 1.
- D. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box sized to NFPA 70.
- E. Disconnect Switch: Factory mount disconnect switch in control panel.

- F. 120V service to be roughed into header of sliding door package.
- G. Electrical rough in to be finished at the time of installation.

2.07 ACCESSORIES

- A. Steel Clips, Supports, and Steel Anchors: Galvanized to 1.25 oz/sq ft.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and openings and recesses are ready to receive work and dimensions are as indicated on shop drawings.
- B. Verify that electric power is available and is of the correct characteristics.

3.02 INSTALLATION

- A. Install equipment in accordance with manufacturer's instructions.
- B. Provide for thermal expansion and contraction of door and frame units and live and dead loads that may be transmitted to operating equipment.
- C. Provide for dimensional distortion of components during operation.
- D. Install pneumatic lines and door power units in a manner to prevent condensation or freezing.
- E. Coordinate installation of components with related and adjacent work; level and plumb.

3.03 ADJUSTING

- A. Adjust door equipment for correct function and smooth operation.
- B. Adjust force required for door panel breakout operation to meet current CBC and ADA requirements.

3.04 CLEANING

- A. Remove temporary protection, clean exposed surfaces.

3.05 CLOSEOUT ACTIVITIES

- A. Demonstrate operation, operating components, adjustment features, and lubrication requirements.
- B. Demonstrate breakout operation of each door panel.

3.06 MAINTENANCE

- A. Provide service and maintenance of operating equipment for one year from Date of Substantial Completion, at no extra charge to City of San Diego.

END OF SECTION

SECTION 08 7100
DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Door Hardware.
 - 2. Access control devices.
 - 3. Cylinders for doors fabricated with locking hardware.
- B. Related Sections:
 - 1. Section 07 9005 - Joint Sealers – exterior thresholds
 - 2. Section 08 1113 – Hollow Metal Doors and Frames
- C. Specific Omissions: Hardware for the following is specified or indicated elsewhere.
 - 1. Windows.
 - 2. Cabinets, including open wall shelving and locks.
 - 3. Signs, except where scheduled.
 - 4. Toilet accessories, including grab bars.
 - 5. Installation.
 - 6. Rough hardware.
 - 7. Conduit, junction boxes & wiring.
 - 8. Folding partitions, except cylinders where detailed.
 - 9. Sliding aluminum doors, except cylinders where detailed.
 - 10. Access doors and panels, except cylinders where detailed.
 - 11. Corner Guards.
 - 12. Wrought Iron railing gates and supports.

1.2 REFERENCES:

Use date of standard in effect as of Bid date.

- A. American National Standards Institute – ANSI 156.18 – Materials and Finishes.
- B. ICC/ANSI A117.1 - 1998 – Specifications for making buildings and facilities usable by physically handicapped people.
- C. ADA – Americans with Disabilities Act of 1990
- D. BHMA – Builders Hardware Manufacturers Association
- E. DHI – Door and Hardware Institute
- F. NFPA – National Fire Protection Association
 - 1. NFPA 80 – Fire Doors and Windows

2. NFPA 105 – Smoke and Draft Control Door Assemblies
3. NFPA 252 – Fire Tests of Door Assemblies
- G. UL – Underwriters Laboratories
 1. UL10C – Positive Pressure Fire Tests of Door Assemblies.
 2. UL 305 – Panic Hardware
- H. WHI – Warnock Hersey Incorporated State of California Building Code
- I. Local applicable codes
- J. SDI – Steel Door Institute
- K. WI – Woodwork Institute
- L. AWI – Architectural Woodwork Institute
- M. NAAMM – National Association of Architectural Metal Manufacturers

1.3 SUBMITTALS & SUBSTITUTIONS

- A. **SUBMITTALS:** Submit six copies of schedule per GREENBOOK and 2010 City Supplement, section 2-5.3. Only submittals printed one sided will be accepted and reviewed. Organize vertically formatted schedule into “Hardware Sets” with index of doors and headings, indicating complete designations of every item required for each door or opening. Include following information:
 1. Type, style, function, size, quantity and finish of hardware items.
 2. Use BHMA Finish codes per ANSI A156.18.
 3. Name, part number and manufacturer of each item.
 4. Fastenings and other pertinent information.
 5. Description of door location using space names and numbers as published in the drawings.
 6. Explanation of abbreviations, symbols, and codes contained in schedule.
 7. Mounting locations for hardware.
 8. Door and frame sizes, handing, materials, fire-rating and degrees of swing.
 9. List of manufacturers used and their nearest representative with address and phone number.
 10. Catalog cuts.
 11. Wiring Diagrams.
 12. Manufacturer’s technical data and installation instructions for electronic hardware.
- A. Bid and submit manufacturer’s updated/improved item if scheduled item is discontinued.
- B. **Deviations:** Highlight, encircle or otherwise identify deviations from “Schedule of Finish Hardware” on submittal with notations clearly designating those portions as deviating from this section.

- C. If discrepancy between drawings and scheduled material in this section, bid the more expensive of the two choices, note the discrepancy in the submittal and request direction from Architect for resolution.
- D. Substitutions per Division 1. Include product data and indicate benefit to the Project. Furnish operating samples on request.
- E. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, wiring diagrams, manufacturers' installation, adjustment and maintenance information, and supplier's final inspection report.

1.4 QUALITY ASSURANCE:

- A. Qualifications:
 - 1. Hardware supplier: direct factory contract supplier who employs a certified architectural hardware consultant (AHC), available at reasonable times during course of work for project hardware consultation to Owner, Resident Engineer and Contractor.
 - a) Responsible for detailing, scheduling and ordering of finish hardware. Detailing implies that the submitted schedule of hardware is correct and complete for the intended function and performance of the openings.
- B. Hardware: Free of defects, blemishes and excessive play. Obtain each kind of hardware (latch and locksets, exit devices, hinges and closers) from one manufacturer.
- C. Exit Doors: Operable from inside with single motion without the use of a key or special knowledge or effort.
- D. Fire-Rated Openings: NFPA 80 compliant. Hardware UL10C / California State Fire Marshal Standard 12-7-4 (positive pressure) compliant for given type/size opening and degree of label. Provide proper latching hardware, non-flaming door closers, approved-bearing hinges, and resilient seals. Coordinate with wood door section for required intumescent seals. Furnish openings complete.
 - 1. Note: scheduled resilient seals may exceed selected door manufacturer's requirements.
 - 2. See 2.6.E for added information regarding resilient and intumescent seals.
- E. Testing and Field inspection of Fire and Egress door installation shall be in compliance with Division 1 Testing 01400 - 01.04. Punch list shall be developed by a current member of CAFDI.org. CAFDI inspector shall not be an employee of Distributor, Supplier, or Mfg. of material on this project.
- F. Furnish hardware items required to complete the work in accordance with specified performance level and design intent, complying with manufacturers' instructions.

1.5 DELIVERY, STORAGE AND HANDLING:

- A. Delivery: coordinate delivery to appropriate locations (shop or field).
 - 1. Permanent keys and cores: secured delivery direct to Owner's representative.

- B. Acceptance at Site: Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.
- C. Storage: Provide securely locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, dust, excessive heat and cold, etc.

1.6 PROJECT CONDITIONS AND COORDINATION:

- A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical the same operation and quality as type specified, subject to Architect's approval.
- B. Coordination: Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated, as necessary for proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents. Furnish related trades with the following information:
 - 1. Location of embedded and attached items to concrete.
 - 2. Location of wall-mounted hardware, including wall stops.
 - 3. Location of finish floor materials and floor-mounted hardware.
 - 4. Locations for conduit and raceways as needed for electrical, electronic and electro-pneumatic hardware items. Fire/life-safety system interfacing. Point-to-point wiring diagrams plus riser diagrams to related trades.
 - 5. Manufacturer templates to door and frame fabricators.
- C. Check Shop Drawings for doors and entrances to confirm that adequate provisions will be made for proper hardware installation. Do not order hardware until the submittal has been reviewed by the frame and door suppliers for compatibility with their products.

1.7 WARRANTY:

- A. Part of respective manufacturers' regular terms of sale. Provide manufacturers' written warranties:

1.	Locksets:	Three years
2.	Extra Heavy Duty Cylindrical Lock:	Seven Years
3.	Exit Devices:	Three years mechanical One year electrical
4.	Closers:	Ten years mechanical Two years electrical
5.	Hinges:	One year
6.	Other Hardware	Two years

1.8 COMMISSIONING:

A. Conduct these tests prior to request for certificate of substantial completion:

1. With installer present, test door hardware operation with climate control system and stairwell pressurization system both at rest and while in full operation.
2. With installer, access control contractor and electrical contractor present, test electrical, electronic and electro-pneumatic hardware systems for satisfactory operation.
3. With installer and electrical contractor present, test hardware interfaced with fire/life-safety system for proper operation and release.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A.	Listed acceptable alternate manufacturers: submit for review products with equivalent function and features of scheduled products.	
ITEM:	MANUFACTURER:	ACCEPTABLE SUB:
Hinges	(IVE) Ives	Bommer
Key System	(BES) Best	
Locks	(SCH) Schlage	
Closers	(LCN) LCN	
Auto Flush Bolts	(IVE) Ives	DCI
Coordinators	(IVE) Ives	DCI
Silencers	(IVE) Ives	Rockwood
Push & Pull Plates	(IVE) Ives	Rockwood
Kickplates	(IVE) Ives	Rockwood

Stops & Holders	(IVE) Ives	Rockwood
Overhead Stops	(GLY) Glynn-Johnson	None available
Thresholds	(NGP) NGP	Zero
Seals & Bottoms	(NGP) NGP	Zero

B.	Manufacturers and their abbreviations used in this schedule:
IVE	H. B. Ives
GLY	Glynn-Johnson Hardware
LCN	LCN Closers
NGP	National Guard Products
SCH	Schlage Lock Company
BES	Best Locking Systems

2.2 HINGING METHODS

- A. Drawings typically depict doors at 90 degrees; doors will actually swing to maximum allowable. Use wide-throw conventional or continuous hinges as needed up to 8 inches in width to allow door to stand parallel to wall for true 180-degree opening. Advise architect if 8-inch width is insufficient.
- B. Conform to manufacturer's published hinge selection standard for door dimensions, weight and frequency, and to hinge selection as scheduled. Where manufacturer's standard exceeds the scheduled product, furnish the heavier of the two choices, notify Architect of deviation from scheduled hardware.
- C. Conventional Hinges: Steel or stainless steel pins and concealed bearings. Hinge open widths minimum, but of sufficient throw to permit maximum door swing.
1. Outswinging exterior doors: non-ferrous with non-removable (NRP) pins and security studs.
 2. Non-ferrous material exteriors and at doors subject to corrosive atmospheric conditions.

2.3 LOCKSETS, LATCHSETS, DEADBOLTS

- A. Mortise Locksets and Latchsets: as scheduled.
1. Chassis: cold-rolled steel, handing field-changeable without disassembly.

2. Latchbolts: 3/4 inch throws stainless steel anti-friction type.
3. Lever Trim: through-bolted, accessible design, cast lever or solid extruded bar type levers as scheduled. Filled hollow tube design unacceptable.
 - a) Spindles: security design independent breakaway. Breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.
4. Furnish solid cylinder collars with wave springs. Wall of collar to cover rim of mortise cylinder.
5. Thumbturns: accessible design not requiring pinching or twisting motions to operate.
6. Deadbolts: stainless steel 1-inch throw.
7. Electric operation: Manufacturer-installed continuous duty solenoid.
8. Strikes: 16 gage curved steel, bronze or brass with 1 inch deep box construction, lips of sufficient length to clear trim and protect clothing.
9. Scheduled Lock Series and Design: Schlage L series, 17A design.
10. Certifications:
 - a) ANSI A156.13, 1994, Grade 1 Operational, Grade 1 Security.
 - b) ANSI/ASTM F476-84 Grade 31 UL Listed.

2.4 CLOSERS

1. Surface Closers:
2. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body. Double heat-treated pinion shaft, single piece forged piston, chrome-silicon steel spring.
3. ISO 2000 certified. Units stamped with date-of-manufacture code.
4. Independent lab-tested 10,000,000 cycles.
5. Non-sized, non-handed, and adjustable. Place closer inside building, stairs, and rooms.
6. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.
7. Adjustable to open with not more than 5.0lbs pressure to open at exterior doors and 5.0lbs at interior doors. As allowed per California Building Code, Section 1133B.2.5, local authority may increase the allowable pressure for fire doors to achieve positive latching, but not to exceed 15lbs.
8. Separate adjusting valves for closing speed, latching speed and back check, fourth valve for delayed action where scheduled.
9. Extra-duty arms (EDA) at exterior doors scheduled with parallel arm units.
10. Exterior door closers: tested to 100 hours of ASTM B117 salt spray test, furnish data on request.
11. Exterior doors: seasonal adjustments not required for temperatures from 120 degrees F to -30 degrees F, furnish checking fluid data on request.

12. Non-flaming fluid, will not fuel door or floor covering fires.
13. Pressure Relief Valves (PRV) not permitted.

2.5 OTHER HARDWARE

- A. Automatic Flush Bolts: Low operating force design.
- B. Overhead Stops: Non-plastic mechanisms and finished metal end caps. Field-changeable hold-open, friction and stop-only functions.
- C. Kick Plates: Four beveled edges, .050 inches minimum thickness, height and width as scheduled. Sheet-metal screws of bronze or stainless steel to match other hardware.
- D. Door Stops: Provide stops to protect walls, casework or other hardware.
 1. Unless otherwise noted in Hardware Sets, provide floor type with appropriate fasteners. Where floor type cannot be used, provide wall type. If neither can be used, provide overhead type.
 2. Locate overhead stops for maximum possible opening. Consult with Owner for furniture locations. Minimum: 90deg stop / 95deg deadstop. Note degree of opening in submittal.
- E. Seals: Finished to match adjacent frame color. Resilient seal material: polyurethane, polypropylene, nylon brush, silicone rubber or solid high-grade neoprene as scheduled. Do not furnish vinyl seal material. UL label applied to seals on rated doors. Substitute products: certify that the products equal or exceed specified material's thickness and durability.
 1. Proposed substitutions: submit for approval.
 2. Solid neoprene: MIL Spec. R6855-CL III, Grade 40.
 3. Non-corroding fasteners at in-swinging exterior doors.
- F. Automatic door bottoms: low operating force units. Doors with automatic door bottoms plus head and jamb seals cannot require more than two pounds operating force to open when closer is disconnected.
- G. Thresholds: As scheduled and per details. Comply with CBC Section 1133B.2.4.1. Substitute products: certify that the products equal or exceed specified material's thickness. Proposed substitutions: submit for approval.
 1. Exteriors: Seal perimeter to exclude water and vermin. Use sealant complying with requirements in Division 7 "Thermal and Moisture Protection". Non-ferrous 1/4inch fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors (SS/FHSL).
 2. Plastic plugs with wood or sheet metal screws are not an acceptable substitute for specified fastening methods.
 3. Fasteners: Generally, exposed screws to be Phillips or Robertson drive. Pinned TORX drive at high security areas. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.

- H. Exposed Through-Bolts: Do not use SNB, grommet nuts, sleeve nuts or other such clamping type fasteners, intent is for minimal exposed hardware. Coordinate with wood doors; ensure provision of proper blocking to support wood screws for mounting panic hardware and door closers. Coordinate with metal doors and frames; ensure provision of proper reinforcement to support machine screws for mounting panic hardware and door closers.
- I. Silencers: Interior hollow metal frames, 3 for single doors, 4 for pairs of doors. Omit where adhesive mounted seal occurs. Leave no unfilled/uncovered pre-punched silencer holes.

2.6 FINISH

- A. Generally BHMA 630 Satin Stainless.
 - 1. Areas using BHMA 626 to have push-plates, pulls and protection plates of BHMA 630, Satin Stainless Steel, unless otherwise noted.
- B. Door closers: factory powder coated to match other hardware, unless otherwise noted.
- C. Aluminum items: match predominant adjacent material. Seals to coordinate with frame color.

2.7 KEYING REQUIREMENTS

- A. Key System: BEST existing small format interchangeable core. For estimate use factory GMK charge. Initiate and conduct meeting(s) with Owner to determine system structure and keybow styles, furnish Owner's written approval of the system. Owner will order and supply permanent cores.
- B. Keys
 - 1. Construction keying: furnish keyed-alike temporary cores plus 10 operating keys. Temporary cores and keys remain property of hardware supplier.
- C. Interchangeable Cores: 7-pin solid brass construction.

PART 3 EXECUTION

3.1 ACCEPTABLE INSTALLERS

- A. Can read and understand manufacturers' templates, suppliers' hardware schedules and printed installation instructions. Can readily distinguish drywall screws from manufacturers' furnished fasteners. Available to meet with manufacturers' representatives and related trades to discuss installation of hardware.

3.2 PREPARATION

- A. Ensure that walls and frames are square and plumb before hardware installation. Make corrections before commencing hardware installation.
- B. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.
 - 1. Notify Resident Engineer of code conflicts before ordering material.

2. Locate levers, key cylinders, t-turn pieces, touchbars and other operable portions of latching hardware between 30 inches to 44 inches above the finished floor, per CBC Section 1133B.2.5.1.
 3. Where new hardware is to be installed near existing doors/hardware scheduled to remain, match locations of existing hardware.
- C. Overhead stops: before installing, determine proposed locations of furniture items, fixtures, and other items to be protected by the overhead stop's action.

3.3 INSTALLATION

- A. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation. Remove and reinstall or replace work deemed defective by Architect.
1. Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc; fasten hardware over and through these seals. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.
 2. When hardware is to be attached to existing metal surface and insufficient reinforcement exists, use RivNuts, NutSerts or similar anchoring device for screws.
 3. Use manufacturers' fasteners furnished with hardware items, or submit Request for Substitution with Architect.
 4. Replace fasteners damaged by power-driven tools.
- B. Locate floor stops no more that 4 inches from walls and not within paths of travel. See paragraph 2.2 regarding hinge widths, door should be well clear of point of wall reveal. Point of door contact no closer to the hinge edge than half the door width. Where situation is questionable or difficult, contact Architect for direction.
- C. Core concrete for exterior door stop anchors. Set anchors in approved non-shrink grout.
- D. Locate overhead stops for minimum 90 degrees and maximum allowable degree of swing.
- E. Drill pilot holes for fasteners in wood doors and/or frames. Centerpunch hole locations before using self-drilling type screws to prevent skating. Replace screws that are not centered in their holes.
- F. Lubricate and adjust existing hardware scheduled to remain. Carefully remove and give to Owner items not scheduled for reuse.

3.4. ADJUSTING

- A. Adjust and check for proper operation and function. Replace units, which cannot be adjusted to operate freely and smoothly.
1. Hardware damaged by improper installation or adjustment methods: repair or replace to Owner's satisfaction.

2. Adjust doors to fully latch with no more than 1 pound of pressure.
 3. Adjust delayed-action closers on fire-rated doors to fully close from fully-opened position in no more than 10 seconds.
 4. Adjust door closers per 1.9 this section.
- B. Inspection: Use hardware supplier's consultant or consultant's agent. Include supplier's report with closeout documents.
- C. Final inspection: Installer to provide letter to Owner that upon completion installer has visited the Project and has accomplished the following:
1. Re-adjust hardware.
 2. Evaluate maintenance procedures and recommend changes or additions, and instruct Owner's personnel.
 3. Identify items that have deteriorated or failed.
 4. Submit written report identifying problems

3.5 DEMONSTRATION

- A. Demonstrate mechanical hardware and electrical, electronic and pneumatic hardware systems, including adjustment and maintenance procedures.

3.6 PROTECTION/CLEANING

- A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.
- B. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

3.7 SCHEDULE OF FINISH HARDWARE

- A. See door schedule in drawings for hardware set assignments.

B. Miscellaneous Material:

HW SET: 01

3	EA	HINGE	3CB1SH HW 4.5 X 4.5	630	IVE
1	EA	PRIVACY W/INDICATOR	L9496HD 17A L583-363	630	SCH
1	EA	CORE ONLY	PERMANENT INTERCHANGEABLE CORE BY OWNER	626	BES
1	EA	SURFACE CLOSER	4041 DEL SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	SET	SEALS	5050B	BRN	NGP
1	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	613 ADA (1/4" FLAT SADDLE)	AL	NGP
INSTALL ALL HARDWARE WITH TORX SCREWS					

END OF SECTION

SECTION 09 2216

NON-STRUCTURAL METAL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal partition, ceiling, and soffit framing.
- B. Framing accessories.

1.02 RELATED REQUIREMENTS

- A. Section 09 2900 – Gypsum Board: Gypsum panels.

1.03 REFERENCE STANDARDS

- A. 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)
- B. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2009a.
- C. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2009a.
- D. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2007.
- E. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings; 2002 (Ed. 2004).

1.04 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement; Section 2-5.3 for Shop Drawings and Submittals.
- B. Shop Drawings:
 - 1. Indicate prefabricated work, component details, stud layout, framed openings, and anchorage to structure, acoustic details, type and location of fasteners, accessories, and items of other related work.
 - 2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement of framing connections.
- C. Product Data: Provide data describing framing member materials and finish, product criteria, load charts, and limitations.
- D. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

PART 2 PRODUCTS

2.01 NON-LOAD BEARING STEEL FRAMING - GENERAL

- A. Recycled Content of Steel Product: Postconsumer recycled content plus one-half of pre-consumer recycled content not less than 25 percent.
- B. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
 - 1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal, unless otherwise indicated.
 - 2. Protective Coating: ASTM A 653/A 653M, G60, hot-dip galvanized, unless otherwise indicated.

2.02 FRAMING MATERIALS

- A. Steel Studs and Runners: ASTM C 645.
 - 1. Minimum Base-Metal Thickness: As indicated on Drawings, but not less than the following:
 - a. 20 gauge for full height walls.
 - b. 25 gauge for partial height walls with lateral braced kickers above ceiling.
 - 2. Depth: As indicated on Drawings.
- B. Slip-Type Head Joints: Where indicated, provide one of the following:
 - 1. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch-deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
 - 2. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - a. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Dietrich Metal Framing, "SLP-TRK" Slotted Track.
- C. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated, or if not indicated, in size, shape, gauge, and configuration to meet performance requirements for items supported from metal framing.
- D. Cold-Rolled Channel Bridging: 0.0538-inch bare-steel thickness, with minimum 1/2-inch- wide flanges.
 - 1. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch- thick, galvanized steel.
- E. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
 - 1. Minimum Base Metal Thickness: As indicated on Drawings.
 - 2. Depth: As indicated on Drawings.

- F. Resilient Furring Channels: 1/2-inch- deep, steel sheet members designed to reduce sound transmission.
 - 1. Configuration: Asymmetrical or hat shaped.
- G. Cold-Rolled Furring Channels: 0.0538-inch bare-steel thickness, with minimum 1/2-inch- wide flanges.
 - 1. Depth: As indicated on Drawings.
 - 2. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum bare-steel thickness of 0.0312 inch.
 - 3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch- diameter wire, or double strand of 0.0475-inch- diameter wire.
- H. Z-Shaped Furring: With slotted or non-slotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum bare-metal thickness of 0.0179 inch, and depth required to fit insulation thickness indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Verify that rough-in utilities are in proper location.

3.02 INSTALLATION - GENERAL

- A. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.
 - 1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C 841 that apply to framing installation.
 - 2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C 1063 that apply to framing installation.
 - 3. Gypsum Veneer Plaster Assemblies: Also comply with requirements in ASTM C 844 that apply to framing installation.
 - 4. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.
- D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.03 INSTALLATION – STEEL FRAMING

- A. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

- B. Install studs so flanges within framing system point in same direction.
 - 1. Space studs as follows:
 - a. Single-Layer Application: As indicated.
 - b. Multilayer Application: As indicated.
 - c. Tile backing panels: 16 inches o.c., unless otherwise indicated.
- C. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
 - 1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 - 2. Other Framed Openings: Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
- D. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.
- E. Align and secure top and bottom runners at maximum 24 inches on center.
- F. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
- G. Install studs vertically at 16 inches on center.
- H. Align stud web openings horizontally.
- I. Secure studs to tracks using crimping method. Do not weld.
- J. Stud splicing is not permissible.
- K. Fabricate corners using a minimum of three studs.
- L. Double stud at wall openings, door and window jambs, not more than 2 inches from each side of openings.
- M. Brace stud framing system rigid.
- N. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.
- O. Blocking: Use wood blocking secured to studs. Provide blocking for support of plumbing fixtures and piping.

3.04 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
 - 1. Compliance of seismic design.
- B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections and prepare test reports.
- C. Testing agency will report test results promptly and in writing to Contractor and Architect.

- D. Remove and replace work where test results indicated that it does not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.05 TOLERANCES

- A. Maximum Variation from True Position: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb: 1/8 inch in 10 feet.

END OF SECTION

SECTION 09 2900

GYPSUM BOARD

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior gypsum wallboard:
 - a. Impact-Resistant Gypsum Board, Type X.
- B. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 09 2216 – Non-Structural Metal Framing.
- B. Section 09 3000 – Tiling.
- C. Section 09 9000 – Painting and Coating.

1.03 REFERENCE STANDARDS

- A. ASTM C 475/C 475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2002 (Reapproved 2007).
- B. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board; 2008.
- C. ASTM C 954 - 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; 2007.
- D. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2007.
- E. ASTM C 1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2009.
- F. ASTM C 1396/C 1396M - Standard Specification for Gypsum Board; 2009a.
- G. ASTM C 1658/C 1658M - Standard Specification for Glass Mat Gypsum Panels; 2006.
- H. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2000 (Reapproved 2005).
- I. ASTM E 72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction; 2005.
- J. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association; 2010.

1.04 PERFORMANCE REQUIREMENTS

- A. Low Emitting Materials: For ceiling and wall assemblies, provide materials and construction identical to those tested in assembly and complying with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

1.05 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, Section 2-5.3 for Shop Drawings and Submittals.
- B. Product Data: Provide data on gypsum board, accessories, and joint finishing system.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing gypsum board application and finishing, with minimum 3 years of documented experience.
- B. Copies of Documents at Site: Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.08 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Unless using gypsum products that are specifically manufactured for limited exposure, do not install interior products until installations areas are protected from moisture.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

1.09 WARRANTY

- A. Special Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of weather-resistant sheathing paper system that fails in materials or workmanship within specified warranty period.
 - 1. Six months of coverage against in-place weather exposure damage (delamination, deterioration, U-V exposure, and decay)
 - 2. Three years against manufacturing defects.

PART 2 PRODUCTS

2.01 GYPSUM BOARD - GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.02 GYPSUM BOARD MATERIALS

- A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut.

1. Application: Use for vertical surfaces, unless otherwise indicated.
 2. Glass-mat-faced gypsum panels as defined in ASTM C 1658/C 1658M, suitable for paint finish, of the same core type and thickness may be substituted for paper-faced board.
 3. Mold Resistance: Score of 10, when tested in accordance with ASTM D 3273.
 - a. Mold-resistant board is required at all locations.
 4. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
 5. Mold-Resistant Paper-Faced Products:
 - a. American Gypsum; M-Bloc.
 - b. CertainTeed Corporation; ProRoc Brand Moisture & Mold Resistant Gypsum Board.
 - c. Lafarge North America Inc; Mold Defense Drywall.
 - d. Lafarge North America Inc; Protecta AR 100 with Mold Defense.
 - e. National Gypsum Company; Gold Bond Brand XP Gypsum Board.
 - f. National Gypsum Company; Gold Bond Hi-Abuse Brand XP Wallboard.
 - g. Pacific Coast Building Products, Inc; PABCO Mold Curb Gypsum Wallboard.
 - h. Temple-Inland Inc; ComfortGuard Mold Resistant Gypsum Board.
 - i. USG Corporation; Sheetrock Brand Mold Tough Gypsum Panels.
 - j. USG Corporation; Sheetrock Brand Mold Tough Gypsum Panels AR.
 - k. See GREENBOOK and 2010 City Supplement, section 4-1.6 for substitutions.
- B. Backing Board For Wet Areas:
1. Application: Surfaces behind tile in wet areas including both restrooms at areas of wall furring over masonry.
 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D 3273.
 3. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C 1325.
 - a. Thickness: 5/8 inch.
 - b. Products:
 - 1) Custom Building Products; Wonderboard.
 - 2) National Gypsum Company; PermaBase Brand Cement Board.
 - 3) National Gypsum Company; PermaBase Flex Brand Cement Board.
 - 4) USG Corporation; Durock Brand Cement Board.
 - 5) See GREENBOOK and 2010 City Supplement, section 4-1.6 for substitutions.
- C. Ceiling Board: Special sag-resistant gypsum ceiling board as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut.
1. Application: Ceilings, unless otherwise indicated.
 2. Thickness: 1/2 inch.
 3. Edges: Tapered.

4. Products:
 - a. American Gypsum; Interior Ceiling Board.
 - b. CertainTeed Corporation; ProRoc Interior Ceiling.
 - c. Georgia-Pacific Gypsum LLC; ToughRock CD Ceiling Board.
 - d. Lafarge North America Inc; Sagcheck.
 - e. National Gypsum Company; High Strength Brand Ceiling Board.
 - f. Pacific Coast Building Products, Inc; PABCO Ceiling Board.
 - g. Temple-Inland Inc; Span24 Ceiling Board.
 - h. USG Corporation; Sheetrock Brand Sag-Resistant Interior Gypsum Ceiling Board.
 - i. See GREENBOOK and 2010 City Supplement, section 4-1.6 for substitutions.

2.03 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
 1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
 2. Shapes:
 - a. Cornerbead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.
 - g. Curved-Edge Cornerbead: With notched or flexible flanges.
- B. Exterior Trim: ASTM C 1047.
 1. Material: Hot-dip galvanized steel sheet, plastic, or rolled zinc.
 2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

2.04 JOINT TREATMENT ACCESSORIES

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
 1. As recommended by panel manufacturer.
- C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
 1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 3. Fill Coat: For second coat, use setting-type, sandable topping compound.
 4. Finish Coat: For third coat, use setting-type, sandable topping compound.

5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.
- D. Joint Compound for Exterior Applications:
1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
 2. Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.

2.05 AUXILLIARY ACCESSORIES

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 APPLYING AND FINISHING PANELS - GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc., except in chases braced internally).

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 2. Fit gypsum panels around ducts, pipes, and conduits.
 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

3.03 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
1. Glass-Mat Interior Gypsum Board Type X:
 - a. Vertical and horizontal surfaces installed prior to completion of building envelope.
 - b. At wet walls in toilet rooms not indicated to receive ceramic tile.
 2. Impact-Resistant Gypsum Board Type X: Vertical surfaces at walls in toilet rooms.
 3. Type X: Vertical and horizontal surfaces unless otherwise indicated.
- B. Single-Layer Application:
1. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At high walls, install panels horizontally unless otherwise indicated.
 2. Fastening Methods: Apply gypsum panels to supports with steel drill screws.
- C. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
1. Exception: Tapered edges to receive joint treatment at right angles to framing.
- D. Installation on Metal Framing: Use screws for attachment of all gypsum board.
- E. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board with sealant.

3.04 INSTALLATION OF TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

- B. Control Joints: Install control joints at locations indicated on Drawings, according to ASTM C 840 (with Architect approval of locations), and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 1. Cornerbead: Use at outside corners.
 2. LC-Bead: Use at exposed panel edges.
 3. L-Bead: Use where indicated.
 4. U-Bead: Use at exposed panel edges.
 5. Curved-Edge Cornerbead: Use at curved openings.
- D. Exterior Trim: Install in the following locations:
 1. Cornerbead: Use at outside corners.
 2. LC-Bead: Use at exposed panel edges.

3.05 JOINT TREATMENT

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Pre-fill open joints and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 1. Level 2: Ceiling plenum areas, concealed areas, and panels that are substrates for tile.
 2. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in other Division 09 Sections.
 3. Level 5: Provide at the following locations:
 - a. All exposed gypsum board surfaces in spaces open to the public, including, but not limited to the following: lobbies, atriums, corridors and hallways exceeding 30 feet in length, and where indicated.
 - b. Primer and its application to surfaces are specified in other Division 09 Sections.
- E. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.
- F. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.
- G. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.06 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

3.07 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09 3000

TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Tile for floor applications.
- B. Tile for wall applications.
- C. Ceramic accessories.
- D. Ceramic trim.

1.02 RELATED REQUIREMENTS

- A. Section 09 2116 - Gypsum Board Assemblies: Installation of tile backer board.

1.03 REFERENCE STANDARDS

- A. ANSI A108 Series/A118 Series/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2005.
- B. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2005.
- C. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar; 1999 (R2005).
- D. ANSI A108.1c - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex Portland Cement Mortar; 1999 (R2005).
- E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive; 1999 (R2005).
- F. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1999 (R2005).
- G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy; 1999 (R2005).
- H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (R2005).
- I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999 (R2005).
- J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 1999 (R2005).
- K. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units; 1999 (R2005).

- L. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005.
- M. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 1999 (R2005).
- N. ANSI A118.7 - American National Standard Specifications for Polymer Modified Cement Grouts for Tile Installation; 1999 (R2005).
- O. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2008.
- P. ASTM C 847 - Standard Specification for Metal Lath; 2010.
- Q. TCNA (HB) - Handbook for Ceramic Tile Installation; 2010.

1.04 PERFORMANCE REQUIREMENTS

- A. Static Coefficient of Friction: Tile on walkway surfaces shall be provided with the following values as determined by testing in conformance with ASTM C 1028.
 1. Level Surfaces (up to 2% grade): Minimum of 0.60 in wet condition.
 2. Step Treads: Minimum of 0.60 in wet condition.
 3. Ramp Surfaces: Minimum of 0.80 in wet condition.

1.05 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, Section 2-5.3 for Shop Drawings and Submittals.
- 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. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

1.06 QUALITY ASSURANCE

- A. Maintain one copy of The Tile Council of North America Handbook and ANSI A108 Series/A118 Series on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum 5 years of documented experience.
- C. Installer Qualifications: Company specializing in performing tile installation, with minimum of 5 years of documented experience.
- D. Single Source Responsibility: Obtain each type and color of tile from a single source. Obtain each type and color of mortar, adhesive and grout from the same source.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.
- B. Deliver and store products in manufacturer's unopened packaging until ready for installation.
- C. Store tile and setting materials on elevated platforms, under cover and in a dry location and protect from contamination, dampness, freezing or overheating.

1.08 FIELD CONDITIONS

- A. Do not install adhesives in an unventilated environment.
- B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE

- A. Manufacturers: All products by the same manufacturer.
 - 1. Dal-Tile Corporation: www.daltile.com.
 - 2. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.
- B. Glazed Wall Tile: ANSI A137.1, and as follows:
 - 1. Semi-Gloss manufactured by DalTile or approved equivalent product.
 - 2. Moisture Absorption: less than 20%. ASTM C 373.
 - 3. Size and Shape: To match existing.
 - 4. Thickness: To match existing.
 - 5. Grout Joint Recommendation: Match existing.
 - 6. Edges: Match existing.
 - 7. Surface Finish: Match existing.
 - 8. Colors: To match existing.
 - 9. Pattern: To match existing.
 - 10. VERIFY EXISTING CHARACTERISTICS IN FIELD PRIOR TO SUBMITTAL OF PRODUCT INFORMATION.
- C. Paver Tile: ANSI A137.1, and as follows:
 - 1. Moisture Absorption: 0 to 0.5 percent. ASTM C 373.
 - 2. Size and Shape: size and shape to match existing.
 - 3. Thickness: thickness to match existing.
 - 4. Face: to match existing.
 - 5. Edges: to match existing.
 - 6. Surface Finish: to match existing.
 - 7. Colors: to match existng.
 - 8. VERIFY EXISTING CHARACTERISTICS IN FIELD PRIOR TO SUBMITTAL OF PRODUCT INFORMATION.

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. Manufacturer: Same as for tile.
- C. Non-Ceramic Trim: Satin natural anodized extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.
 - 1. Applications: Use in the following locations:
 - a. Thresholds at door openings.
 - b. Open edges of floor tile.
 - c. Transition between floor finishes of different heights.
 - d. Expansion and control joints, floor and wall.
 - 2. Manufacturer:
 - a. Schluter-Systems: www.schluter.com.
 - 3. See GREENBOOK and 2010 City Supplement, section 4-1.6 for substitutions.

2.03 ADHESIVE MATERIALS

- A. Manufacturers:
 - 1. Bonsal American, Inc; StayFlex 590: www.prospec.com.
 - 2. Bostik Inc: www.bostik-us.com.
 - 3. Mapei Corporation: www.mapei.com.
 - 4. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.
- B. Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.

2.04 MORTAR BED MATERIALS

- A. Portland Cement: ASTM C 150, type 1, gray or white.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Sand: ASTM C 144, fine.
- D. Latex Adhesive: As approved.
- E. Water: Clean and potable.

2.05 MORTAR BOND COAT MATERIALS

- A. Dry-Set Portland Cement type: ANSI 118.1.
- B. Latex-Portland Cement type: ANSI 118.4.
- C. Epoxy: ANSI A118.3, 100 percent solids.

2.06 GROUT MATERIALS

- A. Manufacturers:
 - 1. Bonsal American, Inc; ProSpec Sanded Tile Grout 700: www.prospec.com
 - 2. Bostik Inc: www.bostik-us.com.
 - 3. Custom Building Products: www.custombuildingproducts.com
 - 4. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.

- B. Standard Grout: Any type specified in ANSI A118.6 or A118.7.
 - 1. Colors: To match existing grout color.
- C. Epoxy Grout: ANSI A118.8, 100 percent solids, color as selected

2.07 ACCESSORY MATERIALS

- A. Cleavage Membrane: 4 mil thick polyethylene film. ASTM D 4397.
- B. Uncoupling Membrane: 1/8 inch thick polyurethane matting with three-dimensional grid structure with dovetail shaped cavities and fleece webbing laminated to the underside to provide a mechanical bond to the substrate adhesive (DITRA).
 - 1. Acceptable Product: Schluter Systems "DITRA."
 - 2. See GREENBOOK and 2010 City Supplement, section 4-1.6 for substitutions.
- C. Waterproofing Membrane at Floors: Membrane in accordance with ANSI 118.10 and as follows:
 - 1. Fabric-reinforced, Fluid-Applied elastomeric membrane.
- D. Membrane at Walls: Match existing, patch as necessary for continuous membrane.
- E. Metal Lath: ASTM C 847, flat expanded diamond mesh, not less than 2.5 lbs/SY, galvanized finish.
- F. Cementitious Backer Board: ANSI A118.9; High density, cementitious, glass fiber reinforced, 5/8 inch thick; 2 inch wide coated glass fiber tape for joints and corners.
- G. Mesh Tape: 2-inch wide self-adhesive fiberglass mesh tape.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.
- B. 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.
- C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of setting materials to sub-floor surfaces.
- D. Verify that required floor-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 cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.

- E. Install tile backer board in strict accordance with manufacturer's instructions, using galvanized roofing nails or corrosion-resistant bugle head drywall screws. Bed fiberglass self-adhesive tape at all joints and corners with material used to set tiles.
- F. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

- A. Match existing method of installation for seamless and flush installation on floor and walls. See below for specifications on each common method. Use installation methods as matches existing installation.
- B. Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and The Tile Council of North America Handbook recommendations.
- C. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- D. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- E. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- F. Form internal angles square and external angles bullnosed.
- G. Install ceramic accessories rigidly in prepared openings.
- H. Sound tile after setting. Replace hollow sounding units.
- I. Keep expansion joints free of adhesive or grout. Apply sealant to joints.
- J. Allow tile to set for a minimum of 48 hours prior to grouting.
- K. Grout tile joints. Use standard grout unless otherwise indicated.
- L. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

- A. Match existing method of installation for seamless and flush installation.
- B. Over interior concrete substrates, install in accordance with The Tile Council of North America Handbook Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.
 - 1. Use uncoupling membrane under all tile unless other underlayment is indicated.
 - 2. Where waterproofing membrane is indicated, install in accordance with The Tile Council of North America Handbook Method F122, with latex-Portland cement grout.
 - 3. Where epoxy bond coat and grout are indicated, install in accordance with The Tile Council of North America Handbook Method F131.
 - 4. Where furan bond coat and grout are indicated, install in accordance with The Tile Council of North America Handbook Method F133.

5. Where epoxy or furan grout is indicated, but not epoxy or furan bond coat, install in accordance with The Tile Council of North America Handbook Method F115.

3.05 INSTALLATION - FLOORS - MORTAR BED METHODS

- A. Over interior concrete substrates, install in accordance with The Tile Council of North America Handbook Method F111, with cleavage membrane, unless otherwise indicated.
 1. Where waterproofing membrane is indicated, with standard grout or no mention of grout type, install in accordance with The Tile Council of North America Handbook Method F121.
 2. Where epoxy bond coat and grout are indicated, install in accordance with The Tile Council of North America Handbook Method F132, bonded.
 3. Where epoxy or furan grout is indicated, but not epoxy or furan bond coat, install in accordance with The Tile Council of North America Handbook Method F114, with cleavage membrane.
- B. Cleavage Membrane: Lap edges and ends.
- C. Waterproofing Membrane: Install as specified in ANSI A108.13.
- D. Mortar Bed Thickness: 1-1/4 inch, unless otherwise indicated.

3.06 INSTALLATION - SHOWERS

- A. At tiled shower receptors install in accordance with The Tile Council of North America Handbook Method B415, mortar bed floor, and W244, thin-set over cementitious backer unit walls.
- B. Grout with standard grout as specified above.
- C. Seal joints between tile work and other work with sealant Type E specified in Section 07 9005.

3.07 INSTALLATION - WALL TILE

- A. Over cementitious backer units on studs, install in accordance with The Tile Council of North America Handbook Method W244, using membrane at toilet rooms and locker rooms.
- B. Over interior concrete and masonry install in accordance with The Tile Council of North America Handbook Method W202, thin-set with dry-set or latex-Portland cement bond coat.
- C. Over wood studs without backer install in accordance with The Tile Council of North America Handbook Method W231, mortar bed, with membrane where indicated.
- D. Over metal studs without backer install in accordance with The Tile Council of North America Handbook Method W241, mortar bed, with membrane where indicated.
- E. Over gypsum wall board on wood or metal studs install in accordance with TCA Handbook Method W243, thin-set with dry-set or latex-portland cement bond coat, unless otherwise indicated.
 1. Where mortar bed is indicated, install in accordance with TCA Handbook Method W222, one coat method.

2. Where waterproofing membrane is indicated other than at showers and bathtub walls, install in accordance with TCA Handbook Method W222, one coat method.

3.08 CLEANING

- A. Clean tile and grout surfaces.

3.09 PROTECTION

- A. Do not permit traffic over finished floor surface for 4 days after installation.
- B. Cover floor with kraft paper and protect from dirt and residue from other trades.
- C. Where floor will be exposed for prolonged periods cover with plywood or other similar type walkways.

END OF SECTION

SECTION 09 9000

PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints and other coatings.
- C. Scope: Finish all interior and 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. Mechanical and Electrical:
 - a. In finished areas, paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
 - b. In all areas, paint shop-primed items.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items fully factory-finished unless specifically so 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, and lead items.
 - 6. Marble, granite, slate, and other natural stones.
 - 7. Floors, unless specifically so indicated.
 - 8. Ceramic and other tiles.
 - 9. Brick, architectural concrete, cast stone, integrally colored plaster and stucco.
 - 10. Glass.
 - 11. Concrete masonry in utility, mechanical, and electrical spaces.
 - 12. Acoustical materials, unless specifically so indicated.
 - 13. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 05 5000 - Metal Fabrications: Shop-primed items.

1.03 DEFINITIONS

- A. Conform to ASTM D 16 for interpretation of terms used in this section.

1.04 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2008.
- C. GreenSeal GS-11 - Paints; 1993.

1.05 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, Section 2-5.3 for Shop Drawings and Submittals.
- B. Product Data: Provide data on all finishing products and special coatings, including VOC content.
- C. Samples: Submit two paper chip samples, 8-1/2x11 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.
- D. Certification: By manufacturer that all paints and coatings comply with VOC limits specified.
- E. Certification: By manufacturer that all paints and coatings do not contain any of the prohibited chemicals specified; GreenSeal GS-11 certification is not required but if provided shall constitute acceptable certification.
- F. Manufacturer's Instructions: Indicate special surface preparation procedures and substrate conditions requiring special attention.
- G. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.
- H. Maintenance Materials: Furnish the following for Resident Engineer's use in maintenance of project.
 - 1. Extra Paint and Coatings: 1 gallon of each color; store where directed.
 - 2. Label each container with color in addition to the manufacturer's label.
- I. Submit Manufacturer Qualifications, as noted below in 1.05 Quality Assurance, line C.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

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 temperature ranges required by the paint product manufacturer.
- 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 coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.
- F. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Provide all paint and coating products from the same manufacturer to the greatest extent possible.
- C. Paints:
 - 1. Base Manufacturer: Dunn Edwards. www.dunnedwards.com.
- D. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.

2.02 PAINTS AND COATINGS - GENERAL

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
 - 1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 - 3. Supply each coating material in quantity required to complete entire project's work from a single production run.
 - 4. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Volatile Organic Compound (VOC) Content:
 - 1. Provide coatings that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Architectural coatings VOC limits of California.
 - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

- D. Flammability: Comply with applicable code for surface burning characteristics.
- E. Colors: As indicated on drawings
 1. Extend colors to surface edges; colors may change at any edge as directed by Architect.
 2. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.
 3. In utility areas, finish equipment, piping, conduit, and exposed duct work in colors according to the color coding scheme indicated.

2.03 PAINT SYSTEMS - INTERIOR

- A. Paint MI-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:
 1. One coat of alkyd primer.
 2. Semi-gloss: Two coats of alkyd enamel; ECOSHIELD (W 603).
- B. Paint MI-OP-2A - Ferrous Metals, Primed, Alkyd, 2 Coat:
 1. Touch-up with alkyd primer.
 2. Semi-gloss: Two coats of alkyd enamel; ECOSHIELD (W 603).
- C. Paint MgI-OP-3A - Galvanized Metals, Alkyd, 3 Coat:
 1. One coat galvanize primer.
 2. Semi-gloss: Two coats of alkyd enamel; ECOSHIELD (W 603).
- D. Paint GI-OP-3LA - Gypsum Board/Plaster, Latex-Acrylic, 3 Coat:
 1. One coat of alkyd primer sealer.
 2. Semi-gloss: Two coats of latex-acrylic enamel; ECOSHIELD (W 603).
 3. Eggshell: Two coats of latex-acrylic enamel; ECOSHIELD (W 602).

2.04 ACCESSORY MATERIALS

- A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of coatings until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
 1. Gypsum Wallboard: 12 percent.

2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to coating 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 repair existing coatings that exhibit surface defects.
- D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- E. Seal surfaces that might cause bleed through or staining of topcoat.
- F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- G. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- H. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
- I. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- J. Corroded Steel and Iron Surfaces to be Painted: Prepare using at least SSPC-PC 2 (hand tool cleaning) or SSPC-SP 3 (power tool cleaning) followed by SSPC-SP 1 (solvent cleaning).
- K. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand or power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
- L. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
- M. Metal Doors to be painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's instructions.
- C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

- E. Apply each coat to uniform appearance.
- F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.
- G. Sand metal surfaces lightly between coats to achieve required finish.
- H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

- A. Resident Engineer will provide field inspection.

3.05 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 PROTECTION

- A. Protect finished coatings until completion of project.
- B. Touch-up damaged coatings after Substantial Completion.

3.07 SCHEDULE - COLORS

- A. Colors are indicated on architectural drawings.

END OF SECTION

SECTION 10 1400

SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Etched Metal Room and Door signs.
- B. Directional and informational signs.

1.02 RELATED REQUIREMENTS

- A. Section 08 1113 – Hollow Metal Doors and Frames

1.03 REFERENCE STANDARDS

- A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2003.
- B. ATBCB ADAAG - Americans with Disabilities Act Accessibility Guidelines; 2010.

1.04 DEFINITIONS

- A. Braille: California ‘Contracted Grade 2 Braille’ including 189 part-word or whole word contractions in addition to Grade 1 Braille 63 characters. Tactile is required whenever braille is required.
- B. Letters and numbers: characters on signs with width-to-height ratio between 3:5 and 1:1 and stroke width ratio between 1:5 and 1:10 using upper case "X" to calculate ratios. Use typestyles with medium weight; upper and lower case lettering are permitted; serif typestyles are permitted.
- C. Symbols: Symbol itself is not required to be tactile but equivalent verbal description is required both in tactile letters and braille.
- D. Tactile: In addition to requiring Braille, 1/32" raised capital letters and numbers without serifs at least 5/8" height and not more than 2" height.

1.05 SYSTEM DESCRIPTION

- A. Signage under this section is intended to include items for identification, direction, control, and information of building where installed as complete integrated system from a single manufacturer.
- B. Access code and ADA design requirements:
 - 1. Signage requiring tactile graphics:
 - a. Wall mounted signs designating permanent rooms and spaces such as, room numbers and restroom, department, office, and fire exit identifications.
 - b. Individually applied characters are prohibited.
 - 2. Signage not requiring tactile graphics but require compliance to other ADA requirements: All other signs providing direction to or information about function of space such as, directional signs (signs with arrow), informational signs (operating hours, policies, etc.), regulatory signs (no smoking, do not enter), ceiling and projected wall mount signs and International Symbol of

Accessibility signs denoting the compliance of certain building features with current access code.

- C. ADA performance requirements:
 - 1. Tactile graphics signs mounting requirements:
 - a. Single doors: Mount 60" to sign centerline above finish floor and on wall adjacent to latch side of door.
 - b. Openings: Mount 60" to sign centerline above finish floor adjacent opening.
 - c. No wall space adjacent latch side of door, opening, or double doors: Mount 60" to sign centerline above finish floor on nearest adjacent wall.

1.06 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, Section 2-5.3 for Shop Drawings and Submittals.
- B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.
- C. 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, colors and location.
 - 1. When content of signs is indicated to be determined later, request such information from Resident Engineer at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
 - 2. Submit for approval by Resident Engineer prior to fabrication.
- D. Shop Drawings:
 - 1. Indicate materials, sizes, configurations and applicable substrate mountings.
 - 2. Typography sample for copy, for each sign.
 - 3. Dimensions showing spacing of symbol, text and Braille blocks on each sign.
- E. Samples: Submit one sample, of size similar to that required for project, illustrating sign style, font, and method of attachment.
- F. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.
- G. Verification Samples: Submit samples showing colors specified.
- H. Manufacturer's Installation Instructions: Include installation templates and attachment devices.
- I. Closeout Submittal: Maintenance data and cleaning requirements for exterior surfaces.

1.07 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.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Flat Signs:
 - 1. APCO; Metal Etch Signs; 388 Grant Street SE, Atlanta, Georgia, 30312, USA; Phone 404-688-9000; www.apcosigns.com.
 - 2. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions.

2.02 SIGNAGE APPLICATIONS

- A. Accessibility Compliance: All signs are required to comply with ADAAG and ANSI/ICC A 117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.
- B. Room/Area Identification 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: Type A - Flat metal signs with etched metal panel media.
 - 2. Provide "tactile" signage, with letters raised minimum 1/32 inch and California Contracted Grade II Braille.
 - 3. Copy Contents: Identify with Room Name, copy content to be verified at time of submittal and approved by Resident Engineer prior to fabrication.
 - 4. Character Height: 1 inch.
 - 5. Sign Height: 6 inches, unless otherwise indicated.
 - 6. See signage details on Drawings for more specific information on copy and preferred sign layout.
- C. Restroom/Locker Room/ Shower Room Identification Signs - WALL: Provide a sign for every room that can be identified by WOMENS, MENS or UNISEX.
 - 1. Sign Type: Type A - Flat metal signs with etched metal panel media.
 - 2. Provide "tactile" signage, with letters raised minimum 1/32 inch and California Contracted Grade II Braille.
 - 3. Copy Contents: Identify with male and female pictograms, International Symbol of Accessibility, the name WOMEN, MEN or UNISEX as applies; and Braille.
 - 4. Character Height: 1 inch.
 - 5. Sign Height: 6 inches, unless otherwise indicated.
 - 6. See signage details on Drawings for more specific information on copy and preferred sign layout.
- D. Restroom/Locker Room/ Shower Room Identification Signs - DOOR: Provide a sign for every room that can be identified by WOMENS, MENS or UNISEX.
 - 1. Sign Type: Type B - Flat signs, cast acrylic with sub-surface printing.
 - 2. NON-tactile Signs: No raised characters, symbols or Braille to be used on restroom door signs. Surface of sign to be completely flush.
 - 3. Copy Contents: Identify with male and female pictograms, International Symbol of Accessibility and the name WOMEN, MEN or UNISEX as applies.
 - 4. Character Height: 1 inch.
 - 5. Sign Height/Shape: Provide geometric shape as described in CBC Section 1115B.6.

6. See signage details on Drawings for more specific information on copy and preferred sign layout.
- E. Interior Directional and Informational Signs:
1. Sign Type: Type A - Flat metal signs with etched metal panel media.
 2. Exit Wall Signs: Identify with the word EXIT and Braille.
 3. See signage details on Drawings for more specific information on copy and preferred sign layout.
- F. International Symbol of Accessibility (ISA):
1. Sign Type: Type A - Flat metal sign.
 2. Locations:
 - a. At each primary entrance to facility. This will include main entry gates as well as building entry doors.
 - b. At each partition door to each accessible stall or compartment in toilet or changing rooms.
 - c. At area of reception counter meeting current access code requirements.
 - d. At other work counters or phone counters meeting current access code requirements.
 - e. At each locker door to locker meeting current access code requirements, IF the locker does not already have a manufacturer-applied ISA.
 - f. Where exterior entrances to single-user accessible restrooms occur. One sign at each entrance.

2.03 SIGN TYPES

- A. Flat Signs – Type A: Metal signage media without frame, etched copy.
1. Material: Light weight zinc metal alloy, suitable for chemical etch.
 2. Thickness: 1/8 inch.
 3. Edges: Eased.
 4. Corners: Radiused to eliminate any sharp edges or points.
 5. Wall Mounting of One-Sided Signs: Tape adhesive AND vandal-proof concealed or exposed screws.
- B. Flat Signs – Type B: Cast acrylic media without frame.
1. Material: Clear non-glare, optically corrected, cast virgin acrylic sheet ready for second surface (backside) graphics application.
 2. Thickness: 1/4 inch.
 3. Edges: Eased.
 4. Corners: Radiused to eliminate any sharp edges or points.
 5. Graphics Media: 0.015" thickness clear non-glare optically correct scuff resistant plastic with computer generated photo screen printing chemically bonded to back surface with background surface subsequently applied.
 6. Door Mounting of One-Sided Signs: Tape adhesive AND vandal-proof concealed or exposed screws.
- C. Color and Font:
1. Character Font: as chosen from manufacturer's standard sans-serif fonts.
 2. Character Case: Upper case only.
 3. Background Color: as chosen from manufacturer's standard colors, to contrast with substrate and adjacent finish color.

4. Character Color: as chosen from manufacturer's standard colors, to contrast with sign background color.

2.04 ACCESSORIES

- A. Concealed Screws: Stainless steel, galvanized steel, chrome plated, or other non-corroding metal. Vandal-proof.
- B. Exposed Screws: Stainless steel. Vandal-proof.
- C. 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 where indicated:
 1. Tactile Room and Exit Signs: Locate on wall at latch side of door with centerline of sign at 60 inches above finished floor.
 2. Door Signs: Center on door with centerline of sign at 60 inches above finished floor.
 3. If no location is indicated obtain Resident Engineer's instructions.
- D. Protect from damage until Substantial Completion; repair or replace damage items.

END OF SECTION

SECTION 10 2113.19

PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Solid plastic toilet compartments.

1.02 RELATED REQUIREMENTS

- A. Section 10 2800 - Toilet, Bath, and Laundry Accessories.

1.03 REFERENCE STANDARDS

- A. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2003.

1.04 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, section 2-5.3 for shop drawings and submittals.
- B. Shop Drawings: Indicate project specific partition plan, elevation views, dimensions, details of wall and floor supports, door swings.
- C. Product Data: Provide data on panel construction, hardware, and accessories.
- D. Color Samples: Submit two samples of partition panels, 4x4 inch in size illustrating panel finish, color, and sheen. To be submitted upon request of Resident Engineer.
- E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- F. Manufacturers Certificate: Signed by toilet partitions manufacturer stating that partition materials meets or exceeds requirements specified in Performance Requirements article.

1.05 PERFORMANCE REQUIREMENTS

- A. Fire Resistance: Partition materials shall comply with the following requirements, when tested in accordance with ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 1. Smoke Developed Index: Not to exceed 450.
 - 2. Flame Spread Index: Not to exceed 75.
 - 3. Material Fire Ratings:
 - a. National Fire Protection Association (NFPA): Class B
 - b. International Code Council (ICC): Class B

1.06 QUALITY ASSURANCE

- A. Manufacturers Qualifications: A company regularly engaged in manufacture of products specified in this section, and whose products have been in satisfactory use under similar service conditions for not less than 5 years.
- B. Installer Qualifications: A Company or Individual, regularly engaged in installation of products specified in this section, with a minimum of 5 years experience.

1.07 WARRANTY

- A. Warranty guaranteeing plastic against breakage, corrosion and delamination under normal conditions for 25 years from date of Substantial Completion. If materials are found to be defective during that period for reasons listed above, the materials will be replaced free of charge.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Plastic Toilet Compartments:
 - 1. Scranton Products (Santanta/Comtec/Capital): www.scrantonproducts.com.
 - 2. See GREENBOOK and 2010 City Supplement, section 4-1.6 for substitutions.

2.02 COMPONENTS

- A. Toilet Compartments: Floor-mounted headrail-braced.
 - 1. Materials: Doors, panel and pilasters to be 1 inch thick constructed of High Density Polyethylene (HDPE) resins. Partitions shall be fabricated from polymer resins compounded under high pressure, forming a single component which is waterproof, nonabsorbent and has a self-lubricating surface that resists marks from pens, pencils, markers and other writing instruments. All plastic components shall be delivered with a protective plastic masking.
 - 2. Color and Pattern: To be selected from manufacturer's full range of colors.
- B. Door, Panel and Pilaster Dimensions:
 - 1. Thickness of doors, panels and pilasters: 1 inch, all edges rounded to a radius.
 - 2. Door Width: 24 inch.
 - 3. Door Width for Accessible Use: 36 inch.
 - 4. Door and Panel Height: 55 inch, mounted at 14 inches above finished floor.
 - 5. Pilaster Height: 82 inches, mounted into a 3 inch high pilaster shoe
 - 6. Accessory: Aluminum heat sink shall be fastened to the bottom of all exposed horizontal edges.

2.03 HARDWARE AND ACCESSORIES

- A. Pilaster Shoes: Formed ASTM A 666, Type 304 stainless steel with No. 4 finish, 20 gauge, 3 in high, concealing floor fastenings.
 - 1. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.
- B. Head Rails: Heavy-duty extruded aluminum (6463-T5 alloy) with anti-grip design, clear anodized finish, fastened to headrail bracket and top of pilaster with vandal-proof stainless steel fasteners. Head Rail Brackets shall be stainless steel, 20 gauge, satin finish and secured to wall with vandal proof stainless steel fasteners.
- C. Wall and Pilaster Brackets: 54 inch continuous stainless steel bracket, double ear.
- D. Attachments, Screws, and Bolts: Stainless steel, vandal proof type.
 - 1. For attaching panels and pilasters to brackets: Vandal proof, stainless steel Torx-head sex bolts.

- E. Hinges: 54 inch continuous stainless steel helix hinge.
- F. Door Strike/Keeper: 54 inch continuous aluminum (6463-T5 alloy) strike. Bumper shall be made of extruded black vinyl.
- G. Door Latch and Housing: Latch and Housing to be stainless steel.
- H. Coat hook and Bumper: Each door shall be supplied with one coat hook/bumper. At accessible compartment, bumper should be of dimension so that door does not strike grab bar.
- I. Door Pull: Each door to be supplied with a door pull as indicated in drawings. At accessible compartments, loop-style door pull to be supplied for inside and outside of door. Door pulls to be fabricated of stainless steel and fastened with vandal proof stainless steel fasteners.
- J. Install an International Symbol of Accessibility plaque on exterior face of accessible compartment door. Symbol to be centered on door and centered at 60 inches above finish floor surface. ISA plaque per Section 10 1400 – Signage.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated on shop drawings.
- B. Verify correct spacing of and between plumbing fixtures.
- C. Verify correct location of built-in framing, anchorage, and bracing.

3.02 INSTALLATION

- A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.
- B. Maintain 3/8 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.
- E. Field touch-up of scratches or damaged finish will not be permitted. Replace damaged or scratched materials with new materials.
- F. No evidence of cutting, drilling and/or patching shall be visible on the finished work.

3.03 TOLERANCES

- A. Maximum Variation from True Position: 1/4 inch.
- B. Maximum Variation from Plumb: 1/8 inch.

3.04 ADJUSTING AND CLEANING

- 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.
- D. Finished surfaces shall be cleaned after installation and left free of all imperfections.

END OF SECTION

SECTION 10 2800

TOILET, BATH AND UTILITY ROOM ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Accessories for toilet rooms.
- B. Accessories for bath and shower rooms.
- C. Accessories for utility rooms.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Placement of reinforcement for backing plate reinforcement.
- B. Section 09 2900 - Gypsum Board: Concealed supports for accessories, including in wall framing and plates and above ceiling framing.
- C. Section 09 3000 - Tiling: Ceramic washroom accessories.
- D. Section 10 2113.19 - Plastic Toilet Compartments.

1.03 REFERENCE STANDARDS

- A. ASTM A 269 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2008.
- B. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2003.

1.04 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, Section 2-5.3 for Shop Drawings and Submittals.
- B. Product Data: Product Data: For each type of product indicated. Include the following:
 - 1. Construction details and dimensions.
 - 2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
 - 3. Material and finish descriptions.
 - 4. Features that will be included for Project.
 - 5. Manufacturer's warranty.
- C. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.
 - 1. Identify locations using room designations indicated.
 - 2. Identify products using designations indicated.
- D. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.
- E. Manufacturer's Cleaning and Maintenance Instructions: For toilet accessories to include in maintenance manuals.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Toilet Accessories:
 - 1. Bobrick Washroom Equipment, Inc.: www.bobrick.com and as indicated on Restroom Accessory Schedule on Drawings.
 - 2. See GREENBOOK and 2010 City Supplement, section 4-1.6 for substitutions.
- B. All items of each type to be made by the same 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.
 - 1. Grind welded joints smooth.
 - 2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.
- B. Keys: Provide 4 keys for each accessory to Resident Engineer; master key all lockable accessories.
- C. Stainless Steel Sheet: ASTM A 666, Type 304, 0.031-inch minimum nominal thickness unless otherwise indicated.
- D. Stainless Steel Tubing: ASTM A 269, Type 304 or 316.
- E. Brass: ASTM B 19, flat products; ASTM B 16/B 16M, rods, shapes, forgings, and flat products with finished edges; or ASTM B 30, castings.
- F. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.036-inch minimum nominal thickness.
- G. Galvanized-Steel Sheet: ASTM A 653/A 653M, with G60 hot-dip zinc coating.
- H. Galvanized-Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.
- I. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.
- J. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).
- K. Adhesive: Two component epoxy type, waterproof.
- L. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.03 FINISHES

- A. Stainless Steel: No. 4 satin brushed finish, unless otherwise noted.
- B. Back paint components where contact is made with building finishes to prevent electrolysis.

2.04 TOILET ROOM ACCESSORIES

- A. Accessories as indicated on drawings. See Restroom Accessory Schedule.
- B. Grab Bars: Stainless steel, 1-1/4 inches outside diameter, minimum 0.05 inch wall thickness, nonslip grasping surface finish, concealed flange mounting; 1-1/2 inches clearance between wall and inside of grab bar, satin finish.
 - 1. Provide per schedule on plans, custom lengths fabricated where indicated.
 - 2. Compliance: Barrier-free accessibility guidelines, including ADA-ABA and ICC/ANSI. for structural strength.
 - a. Capacity: Designed to support 900 lbs in compliant installations.
 - 3. Description: Grab bar with 90 degree return to flange. Clearance between grab bar and finished wall is 1-1/2 inches.
 - 4. Grab Bar Materials: 18-8 S, Type 304, 18 gauge stainless steel tubing with satin finish, ends of grab bar pass through flanges and are heliarc welded to flanges to form one structural unit, outside diameter 1-1/2 inches.
 - 5. Mounting Flanges: Concealed, 18-8 S, Type 304, 1/8 inch thick, stainless steel plate.
 - a. End Flanges: 2 inches x 3-1/8 inches with two holes for attachment to wall.
 - b. Intermediate Flanges: 2-5/8 inches x 3-1/8 inches wide x 3-1/8 inch diameter.
 - 6. Snap Flange Covers: 18-8 S, Type 304, 22 gauge drawn stainless steel with satin finish, 3-1/4 inch diameter x 1/2 inches deep; snap over mounting flange to conceal mounting screws.
 - 7. Mounting Accessories: Provide the following optional mounting accessories as scheduled and indicated on the Drawings and as required for complete installation.
 - a. Mounting Kits: Provide Bobrick Mounting Kit appropriate for project conditions and substrate.
- C. Diaper Changing Station: Wall-mounted folding diaper changing station for use in commercial toilet facilities, meeting or exceeding ASTM F 2285.
 - 1. Style: Horizontal.
 - 2. Material: Stainless steel.
 - 3. Mounting: Surface.
 - 4. Minimum Rated Load: 250 lbs.
 - 5. Manufacturers:
 - a. Koala Kare Products: www.koalabear.com. Model: KB110-SSWM for surface mount applications and KB110-SSRE for recessed applications.
 - b. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions
- D. Mirrors: Stainless steel framed, 6 mm thick tempered glass mirror.
 - 1. Size: As indicated on drawings.
 - 2. Frame: 0.05 inch angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; No.4 finish.
- E. Other Accessories: See Restroom Accessories Schedule on drawings.

2.05 SHOWER AND TUB ACCESSORIES

- A. Shower Curtain Rod: Stainless steel tube, 1 inch outside diameter, 0.04 inch wall thickness, satin-finished, with 3 inch outside diameter, minimum 0.04 inch thick satin-finished stainless steel flanges, for installation with exposed fasteners.
- B. Shower Curtain:
 - 1. Material: Cotton, machine washable, and mildew-resistant.
 - 2. Shower curtain hooks: Chrome-plated or stainless steel spring wire designed for snap closure.
- C. Folding Shower Seat: Wall-mounted recessed; welded tubular seat frame, structural support members, hinges and mechanical fasteners of Type 304 stainless steel, L-shaped, right-hand seat.
 - 1. Seat: Phenolic or polymeric composite one-piece seat or seat slats, of color as selected.
 - 2. Size: ADA compliant.

2.06 UNDER LAVATORY GUARD

- A. Lavatory Trap and Water Supply Protection: Insulated coverings for under lavatory waste and supply piping and valves.
 - 1. Material: Soft flexible 100% PVC cover.
 - a. Anti-microbial / Anti-fungal: Interior and exterior result of 0, ASTM G21.
 - b. Water Absorption: ASTM D 570.
 - c. Tensile Strength and Elongation: ASTM D 412.
 - d. Weatherization and UV: ASTM G 153.
 - e. Density: 21.61 pcf.
 - 2. Color: White.
 - 3. Mounting: Smooth non-abrasive snap-lock fasteners and Velcro, tamper-resistant.
 - 4. Insulation: Complies with ASTM E-84.
 - a. Flame and Smoke Spread: 25 Flame Spread/450 Smoke Index, ASTM E 84-07.
 - b. Thermal: Conductivity of 0.028 (K value), Resistance of 0.504 (R value); ASTM C 177.
 - c. Thermal: Conductivity of 0.358 (avg), Resistance of 0.346 (avg), Resistance of 2.790 ("R" per inch); ASTM C 518.
 - 5. Manufacturers:
 - a. Trap Gear: www.plumberex.com. Model: #396. 3-PART SET with P-Trap cover and 2 Valve and Supply covers.
 - b. See GREENBOOK and 2010 City Supplement, Section 4-1.6 for Substitutions

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.
- C. Verify that field measurements are as indicated on drawings.

- D. See Sections 05 5000 – Metal Fabrications and/or 06 1000 - Rough Carpentry for installation of blocking, reinforcing plates, and concealed anchors in walls, and ceilings.

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. Install products in strict compliance with manufacturer’s written instructions and recommendations, including the following:
 - 1. Verify blocking has been installed properly.
 - 2. Verify location does not interfere with door swings or use of fixtures.
 - 3. Comply with manufacturer’s recommendations for backing and proper support.
 - 4. Use fasteners and anchors suitable for substrate and project conditions
 - 5. Install units’ rigid, straight, plumb, and level, in accordance with manufacturer’s installation instructions and approved shop drawings.
 - 6. Conceal evidence of drilling, cutting, and fitting to room finish.
 - 7. Test for proper operation.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights and Locations: As required by CBC, ADAAG, City of San Diego Accessibility Guidelines, as indicated on drawings, and as follows:
 - 1. Bottom of Mirrors: Top of Sink Backsplash, or 40 inches Max above finished floor.
 - 2. Grab Bars at Barrier-Free Stalls: 33 inches above finished floor to centerline.
 - 3. No operable part of any accessory to be mounted greater than 40 inches above finished floor.

3.04 CLEANING AND PROTECTION

- A. Clean exposed surfaces of compartments, hardware, and fittings using methods acceptable to the manufacturer.
- B. Touch-up, repair or replace damaged products until Substantial Completion.

3.05 SCHEDULE

- A. As indicated on architectural drawings.

END OF SECTION

SECTION 10 5100

LOCKERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Accessible Locker units with hinged doors, ADA compliant.
- B. Metal tops and filler panels.

1.02 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, section 2-5.3 for shop drawings and submittals.
- B. Product Data: Provide data on locker types, sizes and accessories.
- C. Shop Drawings: Indicate locker plan layout.
- D. Manufacturer's Installation Instructions: Indicate component installation assembly.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Protect locker finish and adjacent surfaces from damage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Lockers:
 - 1. Tensco Corp.; Product ADA Compliant Lockers.
 - 2. See GREENBOOK and 2010 City Supplement, section 4-1.6 for substitutions.

2.02 MATERIALS

- A. Sheet Steel: ASTM A 653/A 653M SS Grade 33/230, with G60/Z180 coating, stretcher leveled; to the following minimum thicknesses:
 - 1. Body and Shelf: 16 gage.
 - 2. Door Outer Face: 16 gage.
 - 3. Door Inner Face: 16 gage.
 - 4. Door Frame: 16 gage, 0.060 inch.
 - 5. Hinges: 14 gage, 0.075 inch.
 - 6. Base: 16 gage.
 - 7. Sloping Top: 20 gage, 0.036 inch.
 - 8. Trim: 20 gage, 0.036 inch.

2.03 LOCKER UNITS – SINGLE TIER

- A. Locker Room Units:
 - 1. Width: 12 inches MIN, MATCH EXISTING.
 - 2. Depth: 12 inches MIN, MATCH EXISTING.
 - 3. Height: 60 inches MIN, MATCH EXISTING.
 - 4. Configuration: single tier.
 - 5. Mounting: Free standing.
 - 6. Base: Provide Closed Base, steel, if applicable.
 - a. Base Height: Match existing.

7. Top: Sloping Top Filler with closures or to match existing.
8. Locking: Equipped with manufacturer's ADA compliant lock option that allows one handed opening of the locker door.
9. Ventilation Method: louvered top and bottom of door.
10. Class: Quiet.
11. Locker Body: Formed and flanged; with steel stiffener ribs; electric spot welded.
12. Frames: Formed channel shape, welded and ground flush, welded to body, resilient gaskets and latching for quiet operation.
13. Doors: Hollow channel edge construction, 1-3/16 inch thick; welded construction, channel reinforced top and bottom with intermediate stiffener ribs, grind and finish edges smooth. Provide rubber bumpers on door for quiet operation.
14. Hinges: Two for doors under 42 inches high; three for doors over 42 inches high; weld securely to locker body and door.
15. Number Plates: Provide rectangular shaped aluminum plates. Form numbers 5/8 inch high of block font style with ADA designation, in contrasting color.
16. Provide ventilation openings at door edge perimeter.
17. Finish edges smooth without burrs.
18. Provide Sloping Top Boxed End Panel at all exposed side faces of new lockers.
19. Provide fully pre-assembled locker units.
20. Provide manufacturer's standard International Symbol of Accessibility at lockers indicated to be accessible.
21. Provide 1 coat hook per locker.
22. Provide stainless steel recessed cup at locking mechanism.

2.04 FINISHING

- A. Clean, degrease, and neutralize metal; prime and finish with one coat of baked enamel.
- B. Paint locker units 1 color, to match existing lockers.
 1. Color: To be selected from manufacturer's standard colors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that prepared bases are in correct position and configuration.
- B. Verify bases are properly sized.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install lockers plumb and square.
- C. Place and secure on prepared base.
- D. Secure lockers with anchor devices to suit substrate materials. Minimum Pullout Force: 100 lb.
- E. Bolt adjoining locker units together to provide rigid installation.

- F. Install end panels, filler panels, and sloped tops.
- G. Replace components that do not operate smoothly.

3.03 CLEANING

- A. Clean locker interiors and exterior surfaces.

3.04 SCHEDULES

- A. As indicated below, see drawings for locker location and location of Accessible Lockers within bank.
- B. Men's and Women's Changing Rooms: 1 lockers total each room, 1 bay, single tier; identified with Universal Symbol of Accessibility.

END OF SECTION

SECTION 12 3600

COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall-hung counters and vanity tops.

1.02 RELATED REQUIREMENTS

- A. Section 06 6510 – Solid Surfacing: Solid Surfacing materials.
- B. Section 22 4000 - Plumbing Fixtures: Sinks.

1.03 REFERENCE STANDARDS

- A. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2010.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2009.
- C. ISSFA-2 - Classification and Standards for Solid Surfacing Material; International Solid Surface Fabricators Association; 2001 (2007).
- D. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- E. PS 1 - Structural Plywood; 2007.

1.04 SUBMITTALS

- A. See GREENBOOK and 2010 City Supplement, Section 2-5.3 for Shop Drawings and Submittals.
- 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. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation.
- D. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
- F. Test Reports: Chemical resistance testing, showing compliance with specified requirements.
- G. Installation Instructions: Manufacturer's installation instructions and recommendations.
- H. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.06 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOP ASSEMBLIES

- A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI Architectural Woodwork Standards.
- B. Solid Surfacing Countertops: Solid surfacing sheet over continuous substrate.
 - 1. Per Section 06 6510 – Solid Surfacing, for horizontal applications.

2.02 ACCESSORY MATERIALS

- A. Wood-Based Components:
 - 1. Wood fabricated from old growth timber is not permitted.
- B. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch thick; join lengths using metal splines.
- C. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- D. Joint Sealant: Mildew-resistant silicone sealant, clear; or as recommended by Manufacturer of solid surfacing materials.

2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 - 1. Join lengths of tops using best method recommended by manufacturer.
 - 2. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 - 1. Height: 4 inches, unless otherwise indicated.
- C. Solid Surfacing: Fabricate tops up to 144 inches long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.
- D. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

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 Resident Engineer of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 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.

3.03 INSTALLATION

- A. Securely attach countertops to cabinets and/or supports using concealed fasteners. Make flat surfaces level; shim where required.
- B. Seal joint between back/end splashes and vertical surfaces.

3.04 CLEANING

- A. Clean countertops surfaces thoroughly.

3.05 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 22 0000

PLUMBING, GENERAL PURPOSE

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)

AHRI 1010 (2002) Self-Contained, Mechanically Refrigerated Drinking-Water Coolers

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z21.10.1/CSA 4.1 (2009; Addenda 2009) Gas Water Heaters Vol. I, Storage Water Heaters with Input Ratings of 75,000 Btu Per Hour or Less

ANSI Z21.10.3/CSA 4.3 (2004; Addenda A 2007; Addenda B 2008) Gas Water Heaters Vol.III, Storage Water Heaters with Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous

ANSI Z21.22/CSA 4.4 (1999; Addenda A 2000, Addenda B 2001; R 2004) Relief Valves for Hot Water Supply Systems

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 146 (2006) Method of Testing and Rating Pool Heaters

ASHRAE 90.1 - IP (2010) Energy Standard for Buildings Except Low-Rise Residential Buildings

ASHRAE 90.1 - SI (2007; Supplement 2008; Errata 2009; Errata 2009; INT 1-3 2009; Errata 2010) Energy Standard for Buildings Except Low-Rise Residential Buildings

AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)

ASSE 1001 (2008) Performance Requirements for Atmospheric Type Vacuum Breakers (ANSI approved 2009)

ASSE 1003 (2009) Performance Requirements for Water Pressure Reducing Valves for Domestic Water Distribution Systems - (ANSI approved 2010)

ASSE 1005	(1999) Water Heater Drain Valves 3/4 Inch Size
ASSE 1010	(2004) Performance Requirements for Water Hammer Arresters (ANSI approved 2004)
ASSE 1011	(2004; Errata 2004) Performance Requirements for Connection Vacuum Breakers (ANSI approved 2004)
ASSE 1012	(2009) Performance Requirements for Backflow Preventer with an Intermediate Atmospheric Vent - (ANSI approved 2009)
ASSE 1013	(2009) Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers - (ANSI approved 2010)
ASSE 1018	(2001) Performance Requirements for Trap Seal Primer Valves - Potable Water Supplied (ANSI Approved 2002)
ASSE 1019	(2004; Errata 2005) Performance Requirements for Vacuum Breaker Wall Hydrants, Freeze Resistant, Automatic Draining Type (ANSI Approved 2004)
ASSE 1020	(2004; Errata 2004; Errata 2004) Performance Requirements for Pressure Vacuum Breaker Assembly (ANSI Approved 2004)
ASSE 1037	(1990) Performance Requirements for Pressurized Flushing Devices (Flushometers) for Plumbing Fixtures

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA 10084	(2005) Standard Methods for the Examination of Water and Wastewater
AWWA B300	(2010) Hypochlorites
AWWA B301	(2010) Liquid Chlorine
AWWA C203	(2008) Coal-Tar Protective Coatings and Linings for Steel Water Pipelines - Enamel and Tape - Hot-Applied
AWWA C606	(2006) Grooved and Shouldered Joints
AWWA C651	(2005; Errata 2005) Standard for Disinfecting Water Mains

AWWA C652	(2002) Disinfection of Water-Storage Facilities
AWWA C700	(2009) Standard for Cold Water Meters - Displacement Type, Bronze Main Case
AWWA C701	(2007) Standard for Cold-Water Meters - Turbine Type for Customer Service
AWWA D100	(2005; Errata 2007) Welded Steel Tanks for Water Storage

AMERICAN WELDING SOCIETY (AWS)

AWS A5.8/A5.8M	(2004) Specification for Filler Metals for Brazing and Braze Welding
AWS B2.2/B2.2M Performance Qualification	(2010) Specification for Brazing Procedure and Performance Qualification

ASME INTERNATIONAL (ASME)

ASME A112.1.2	(2004) Standard for Air Gaps in Plumbing Systems (For Plumbing Fixtures and Water-Connected Receptors)
ASME A112.14.1	(2003; R 2008) Backwater Valves
ASME A112.19.1/CSA B45.2	(2008) Enameled Cast Iron and Enameled Steel Plumbing Fixtures
ASME A112.19.17	(2010) Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems
ASME A112.19.2/CSA B45.1	(2008; Update 2009) Standard for Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals
ASME A112.19.3/CSA B45.4	(2008) Stainless Steel Plumbing Fixtures
ASME A112.19.4M	(1994; Supplement 1-1998; Supplement 2-2000; R 2009) Porcelain Enameled Formed Steel Plumbing Fixtures
ASME A112.19.5	(2005) Trim for Water-Closet Bowls, Tanks and Urinals
ASME A112.19.8	(2007; Addenda A 2008; Addenda B 2009) Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, And Hot Tubs

ASME A112.36.2M	(1991; R 2008) Cleanouts
ASME A112.6.1M	(1997; R 2008) Floor Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use
ASME A112.6.3	(2001; R 2007) Standard for Floor and Trench Drains
ASME A112.6.4	(2003; R 2008) Roof, Deck and Balcony Drains
ASME B1.20.1	(1983; R 2006) Pipe Threads, General Purpose (Inch)
ASME B16.12	(2009) Cast Iron Threaded Drainage Fittings
ASME B16.15	(2006) Cast Bronze Alloy Threaded Fittings Classes 125 and 250
ASME B16.18	(2001; R 2005) Cast Copper Alloy Solder Joint Pressure Fittings
ASME B16.21	(2005) Nonmetallic Flat Gaskets for Pipe Flanges
ASME B16.22	(2001; R 2010) Standard for Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
ASME B16.23	(2002; R 2006) Cast Copper Alloy Solder Joint Drainage Fittings - DWV
ASME B16.24	(2006) Cast Copper Alloy Pipe Flanges and Flanged Fittings: Classes 150, 300, 600, 900, 1500, and 2500
ASME B16.29	(2007) Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV
ASME B16.3	(2006) Malleable Iron Threaded Fittings, Classes 150 and 300
ASME B16.34	(2009) Valves - Flanged, Threaded and Welding End
ASME B16.39	(2009) Standard for Malleable Iron Threaded Pipe Unions; Classes 150, 250, and 300
ASME B16.4	(2006) Standard for Gray Iron Threaded Fittings; Classes 125 and 250
ASME B16.5	(2009) Pipe Flanges and Flanged Fittings: NPS 1/2 Through NPS 24 Metric/Inch Standard

ASME B31.1 Piping	(2007; Addenda a 2008; Addenda b 2009) Power Piping
ASME B31.5	(2010) Refrigeration Piping and Heat Transfer Components
ASME B40.100	(2005) Pressure Gauges and Gauge Attachments
ASME BPVC SEC IX	(2010) BPVC Section IX-Welding and Brazing Qualifications
ASME BPVC SEC VIII D1	(2007; Addenda 2008; Addenda 2009) BPVC Section VIII-Rules for Construction of Pressure Vessels Division 1
ASME CSD-1	(2009) Control and Safety Devices for Automatically Fired Boilers
ASTM INTERNATIONAL (ASTM)	
ASTM A 105/A 105M	(2010) Standard Specification for Carbon Steel Forgings for Piping Applications
ASTM A 183	(2003; R 2009) Standard Specification for Carbon Steel Track Bolts and Nuts
ASTM A 193/A 193M	(2010a) Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service and Other Special Purpose Applications
ASTM A 47/A 47M	(1999; R 2009) Standard Specification for Ferritic Malleable Iron Castings
ASTM A 515/A 515M	(2003; R 2007) Standard Specification for Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service
ASTM A 516/A 516M	(2010) Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service
ASTM A 518/A 518M	(1999; R 2008) Standard Specification for Corrosion-Resistant High-Silicon Iron Castings
ASTM A 53/A 53M	(2010) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

ASTM A 536	(1984; R 2009) Standard Specification for Ductile Iron Castings
ASTM A 733	(2003; R 2009e1) Standard Specification for Welded and Seamless Carbon Steel and Austenitic Stainless Steel Pipe Nipples
ASTM A 74	(2009) Standard Specification for Cast Iron Soil Pipe and Fittings
ASTM A 888	(2009) Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications
ASTM B 111/B 111M	(2009) Standard Specification for Copper and Copper-Alloy Seamless Condenser Tubes and Ferrule Stock
ASTM B 117	(2009) Standing Practice for Operating Salt Spray (Fog) Apparatus
ASTM B 152/B 152M	(2009) Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar
ASTM B 306	(2009) Standard Specification for Copper Drainage Tube (DWV)
ASTM B 32	(2008) Standard Specification for Solder Metal
ASTM B 370	(2009) Standard Specification for Copper Sheet and Strip for Building Construction
ASTM B 42	(2010) Standard Specification for Seamless Copper Pipe, Standard Sizes
ASTM B 43	(2009) Standard Specification for Seamless Red Brass Pipe, Standard Sizes
ASTM B 584	(2009a) Standard Specification for Copper Alloy Sand Castings for General Applications
ASTM B 75	(2002) Standard Specification for Seamless Copper Tube
ASTM B 75M	(1999; R 2005) Standard Specification for Seamless Copper Tube (Metric)
ASTM B 813	(2010) Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube

ASTM B 828	(2002) Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings
ASTM B 88	(2009) Standard Specification for Seamless Copper Water Tube
ASTM B 88M	(2005) Standard Specification for Seamless Copper Water Tube (Metric)
ASTM C 1053	(2000; R 2010) Standard Specification for Borosilicate Glass Pipe and Fittings for Drain, Waste, and Vent (DWV) Applications
ASTM C 564	(2009a) Standard Specifications for Rubber Gaskets for Cast Iron Soil Pipe and Fittings
ASTM C 920	(2010) Standard Specification for Elastomeric Joint Sealants
ASTM D 1004	(2009) Initial Tear Resistance of Plastic Film and Sheeting
ASTM D 1248	(2005) Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
ASTM D 1785	(2006) Standard Specification for Poly(Vinyl Chloride) (PVC), Plastic Pipe, Schedules 40, 80, and 120
ASTM D 2000	(2008) Standard Classification System for Rubber Products in Automotive Applications
ASTM D 2235	(2004) Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings
ASTM D 2239	(2003) Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter
ASTM D 2241	(2009) Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)
ASTM D 2447	(2003) Standard Specification for Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter

ASTM D 2464	(2006) Standard Specification for Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D 2466	(2006) Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
ASTM D 2467	(2006) Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D 2564	(2004; R 2009e1) Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems
ASTM D 2657	(2007) Heat Fusion Joining Polyolefin Pipe and Fittings
ASTM D 2661	(2008) Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40, Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D 2665	(2009) Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D 2672	(1996a; R 2009) Joints for IPS PVC Pipe Using Solvent Cement
ASTM D 2683	(2010) Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing
ASTM D 2737	(2003) Polyethylene (PE) Plastic Tubing
ASTM D 2822	(2005) Asphalt Roof Cement
ASTM D 2846/D 2846M	(2009b) Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems
ASTM D 2855	(1996; R 2010) Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings
ASTM D 2996	(2001; R 2007e1) Filament-Wound "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
ASTM D 3035	(2008) Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter
ASTM D 3122	(1995; R 2009) Solvent Cements for Styrene-Rubber (SR) Plastic Pipe and Fittings

ASTM D 3138	(2004) Solvent Cements for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Non-Pressure Piping Components
ASTM D 3139	(1998; R 2005) Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
ASTM D 3212	(2007) Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
ASTM D 3261	(2010a) Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
ASTM D 3311	(2009a) Drain, Waste, and Vent (DWV) Plastic Fittings Patterns
ASTM D 4101	(2010) Standard Specification for Polypropylene Injection and Extrusion Materials
ASTM D 4551	(1996; R 2008e1) Poly(Vinyl Chloride)(PVC) Plastic Flexible Concealed Water-Containment Membrane
ASTM D 638	(2010) Standard Test Method for Tensile Properties of Plastics
ASTM E 1	(2007) Standard Specification for ASTM Liquid-in-Glass Thermometers
ASTM E 96/E 96M	(2005) Standard Test Methods for Water Vapor Transmission of Materials
ASTM F 1290	(1998a; R 2004) Electrofusion Joining Polyolefin Pipe and Fittings
ASTM F 1760	(2001; R 2005e1) Coextruded Poly(Vinyl Chloride) (PVC) Non-Pressure Plastic Pipe Having Reprocessed-Recycled Content
ASTM F 2387	(2004) Standard Specification for Manufactured Safety Vacuum Release Systems (SVRS) for Swimming Pools, Spas, and Hot Tubs
ASTM F 2389	(2010) Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems

ASTM F 409	(2002; R 2008) Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings
ASTM F 437	(2009) Standard Specification for Threaded Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
ASTM F 438	(2009) Standard Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40
ASTM F 439	(2009) Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
ASTM F 441/F 441M	(2009) Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80
ASTM F 442/F 442M	(2009) Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)
ASTM F 477	(2010) Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F 493	(2010) Solvent Cements for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe and Fittings
ASTM F 628	(2008) Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core
ASTM F 877	(2007) Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems
ASTM F 891	(2010) Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core
CAST IRON SOIL PIPE INSTITUTE (CISPI)	
CISPI 301	(2009) Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications
CISPI 310	(2009) Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications

COPPER DEVELOPMENT ASSOCIATION (CDA)

CDA A4015 (1994; R 1995) Copper Tube Handbook

INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO)

IAPMO PS 117 (2005) Press Type Or Plain End Rub Gasketed W/ Nail CU & CU Alloy Fittings for Install On CU Tubing

IAPMO UPC (2003) Uniform Plumbing Code

IAPMO Z124.1.2 (2005) Plastic Bathtub and Shower Units

IAPMO Z124.8 (1990) Plastic Bathtub Liners

INTERNATIONAL CODE COUNCIL (ICC)

ICC IPC (2009) International Plumbing Code

ICC/ANSI A117.1 (2003; Errata 2007) Accessible and Usable Buildings and Facilities

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)

ANSI/ISEA Z358.1 (2009) American National Standard for Emergency Eyewash and Shower Equipment

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)

MSS SP-110 (2010) Ball Valves Threaded, Socket- Welding, Solder Joint, Grooved and Flared Ends

MSS SP-25 (2008) Standard Marking System for Valves, Fittings, Flanges and Unions

MSS SP-44 (2010) Steel Pipeline Flanges

MSS SP-58 (2009) Pipe Hangers and Supports - Materials, Design and Manufacture, Selection, Application, and Installation

MSS SP-67 (2002a) Butterfly Valves

MSS SP-69 (2003) Pipe Hangers and Supports - Selection and Application (ANSI Approved American National Standard)

MSS SP-70 (2006) Gray Iron Gate Valves, Flanged and Threaded Ends

MSS SP-71 Threaded Ends	(2005) Gray Iron Swing Check Valves, Flanged and
MSS SP-72	(2010) Ball Valves with Flanged or Butt-Welding Ends for General Service
MSS SP-73	(2003) Brazing Joints for Copper and Copper Alloy Pressure Fittings
MSS SP-78	(2005a) Cast Iron Plug Valves, Flanged and Threaded Ends
MSS SP-80	(2008) Bronze Gate, Globe, Angle and Check Valves
MSS SP-83	(2006) Class 3000 Steel Pipe Unions Socket Welding and Threaded
MSS SP-85	(2002) Gray Iron Globe & Angle Valves Flanged and Threaded Ends

NACE INTERNATIONAL (NACE)

NACE SP0169	(1992; R 2007) Control of External Corrosion on Underground or Submerged Metallic Piping Systems
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NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA 250	(2008) Enclosures for Electrical Equipment (1000 Volts Maximum)
NEMA MG 1	(2009) Motors and Generators
NEMA MG 11	(1977; R 2007) Energy Management Guide for Selection and Use of Single Phase Motors

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 31	(2006; Errata 06-1; Errata 07-2; Errata 10-3) Standard for the Installation of Oil-Burning Equipment
NFPA 54	(2009; TIA 10-3) National Fuel Gas Code
NFPA 90A	(2009; Errata 09-1) Standard for the Installation of Air Conditioning and Ventilating Systems

NSF INTERNATIONAL (NSF)

NSF/ANSI 14	(2010) Plastics Piping System Components and Related Materials
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NSF/ANSI 61 (2010a) Drinking Water System Components - Health Effects

PLASTIC PIPE AND FITTINGS ASSOCIATION (PPFA)

PPFA-01 (2004) Firestopping: Plastic Pipe in Fire Resistive Construction

PLUMBING AND DRAINAGE INSTITUTE (PDI)

PDI G 101 (2010) Testing and Rating Procedure for Hydro Mechanical Grease Interceptors with Appendix of Installation and Maintenance

PDI WH 201 (2010) Water Hammer Arresters Standard

SAE SOCIETY OF AUTOMOTIVE ENGINEERS INTERNATIONAL (SAE)

SAE J1508 (2009) Hose Clamp Specifications

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA SM 9223 (2004) Enzyme Substrate Coliform Test

Energy Star (1992; R 2006) Energy Star Energy Efficiency Labeling System

PL 93-523 (1974; A 1999) Safe Drinking Water Act

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED (2002; R 2005) Leadership in Energy and Environmental Design(tm) Green Building Rating System for New Construction (LEED-NC)

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

10 CFR 430 Energy Conservation Program for Consumer Products

21 CFR 175 Indirect Food Additives: Adhesives and Components of Coatings

40 CFR 50.12 National Primary and Secondary Ambient Air Quality Standards for Lead

PL 109-58 Energy Policy Act of 2005 (EPAct05)

UNDERWRITERS LABORATORIES (UL)

UL 174	(2004; Reprint Apr 2009) Household Electric Storage Tank Water Heaters
UL 1951	(1994; Reprint Jun 2010) Electric Plumbing Accessories
UL 430	(2009) Standard for Waste Disposers
UL 499	(2005; Reprint Nov 2009) Electric Heating Appliances
UL 732	(1995; Reprint Apr 2010) Oil-Fired Storage Tank Water Heaters

1.2 SUBMITTALS

The following shall be submitted:

SD-02 Shop Drawings

Plumbing System;

Detail drawings consisting of schedules, performance charts, instructions, diagrams, and other information to illustrate the requirements and operations of systems that are not covered by the Plumbing Code. Detail drawings for the complete plumbing system including piping layouts and locations of connections; dimensions for roughing-in, foundation, and support points; schematic diagrams and wiring diagrams or connection and interconnection diagrams. Detail drawings shall indicate clearances required for maintenance and operation. Where piping and equipment are to be supported other than as indicated, details shall include loadings and proposed support methods. Mechanical drawing plans, elevations, views, and details, shall be drawn to scale.

SD-03 Product Data

Fixtures; (LEED)

List of installed fixtures with manufacturer, model, and flow rate.

Flush valve water closets

Flush valve urinals

Flush tank water closets Wall hung lavatories Countertop lavatories

Service sinks

Drinking-water coolers;

Pumps;

Backflow prevention assemblies;

Plumbing System

Diagrams, instructions, and other sheets proposed for posting. Manufacturer's recommendations for the installation of bell and spigot and hubless joints for cast iron soil pipe (if necessary).

SD-06 Test Reports

Tests, Flushing and Disinfection

Test reports in booklet form showing all field tests performed to adjust each component and all field tests performed to prove compliance with the specified performance criteria, completion and testing of the installed system. Each test report shall indicate the final position of controls.

Test of Backflow Prevention Assemblies;

Certification of proper operation shall be as accomplished in accordance with state regulations by an individual certified by the state to perform such tests. If no state requirement exists, the Contractor shall have the manufacturer's representative test the device, to ensure the unit is properly installed and performing as intended. The Contractor shall provide written documentation of the tests performed and signed by the individual performing the tests.

SD-07 Certificates

Materials and Equipment

Where equipment is specified to conform to requirements of the ASME Boiler and Pressure Vessel Code, the design, fabrication, and installation shall conform to the code.

Bolts

Written certification by the bolt manufacturer that the bolts furnished comply with the specified requirements.

1.3 STANDARD PRODUCTS

Specified materials and equipment shall be standard products of a manufacturer regularly engaged in the manufacture of such products. Specified equipment shall essentially duplicate equipment that has performed satisfactorily at least two years prior to bid opening. Standard products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year use shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been for sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2 year period.

1.3.1 Alternative Qualifications

Products having less than a two-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturer's factory or laboratory tests, can be shown.

1.3.2 Service Support

The equipment items shall be supported by service organizations. Submit a certified list of qualified permanent service organizations for support of the equipment which includes their addresses and qualifications. These service organizations shall be reasonably convenient to the equipment installation and able to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

1.3.3 Manufacturer's Nameplate

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

1.3.4 Modification of References

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 resident engineer.

1.3.4.1 Definitions

For the International Code Council (ICC) Codes referenced in the contract documents, advisory provisions shall be considered mandatory, the word "should" shall be interpreted as "shall." Reference to the "code official" shall be interpreted to mean the "Resident Engineer." For leased facilities, references to the "owner" shall be interpreted to mean the "leasers." References to the "permit holder" shall be interpreted to mean the "Contractor."

1.3.4.2 Administrative Interpretations

For ICC Codes referenced in the contract documents, the provisions of Chapter 1, "Administrator," do not apply. References in the ICC Codes to sections of Chapter 1, shall be applied appropriately by the resident engineer as authorized by his administrative cognizance.

1.4 DELIVERY, STORAGE, AND HANDLING

Handle, store, and protect equipment and materials to prevent damage before and during installation in accordance with the manufacturer's recommendations, and as approved by the Contracting Officer. Replace damaged or defective items.

1.5 REGULATORY REQUIREMENTS

Unless otherwise required herein, plumbing work shall be in accordance with ICC IPC. Energy consuming products and systems shall be in accordance with PL 109-58 and ASHRAE 90.1 - SI ASHRAE 90.1 - IP

1.6 PROJECT/SITE CONDITIONS

The Contractor shall become familiar with details of the work, verify dimensions in the field, and advise the resident engineer of any discrepancy before performing any work.

1.7 INSTRUCTION TO PERSONNEL

When specified in other sections, furnish the services of competent instructors to give full instruction to the designated personnel in the adjustment, operation, and maintenance, including pertinent safety requirements, of the specified equipment or system. Instructors shall be thoroughly ` changes or modifications.

1.8 ACCESSIBILITY OF EQUIPMENT

Install all work so that parts requiring periodic inspection, operation, maintenance, and repair are readily accessible. Install concealed valves, expansion joints, controls, dampers, and equipment requiring access, in locations freely accessible through access doors.

PART 2 PRODUCTS

2.1 MATERIALS

Materials for various services shall be in accordance with TABLES I and II. PVC pipe shall contain a minimum of 25 percent recycled content in accordance with ASTM F 1760. HDPE pipe shall contain a minimum of 50 percent post-consumer recycled content. Cement pipe shall contain recycled content. Steel pipe shall contain a minimum of 25 percent recycled content, with a minimum of 16 percent post-consumer recycled content. Pipe schedules shall be selected based on service requirements. Pipe fittings shall be compatible with the applicable pipe materials. Plastic pipe, fittings, and solvent cement shall meet NSF/ANSI 14 and shall be NSF listed for the service intended. Plastic pipe, fittings, and solvent cement used for potable hot and cold water service shall bear the NSF seal "NSF-PW." Polypropylene pipe and fittings shall conform to dimensional requirements of Schedule 40, Iron Pipe size and shall comply with NSF/ANSI 14, NSF/ANSI 61 and ASTM F 2389. Polypropylene piping that will be exposed to UV light shall be provided with a Factory applied UV resistant coating. Pipe threads (except dry seal) shall conform to ASME B1.20.1. Grooved pipe couplings and fittings shall be from the same manufacturer. Material or equipment containing lead shall not be used in any potable water system. In line devices such as water meters, building valves, check valves, meter stops, valves, fittings and back flow preventers shall comply with PL 93-523 and NSF/ANSI 61, Section 8. End point devices such as drinking water fountains, lavatory faucets, kitchen and bar faucets, residential ice makers, supply stops and end point control valves used to dispense water for drinking must meet the requirements of NSF/ANSI 61, Section 9. Hubless cast-iron soil pipe shall not be installed underground, under concrete floor slabs, or in crawl spaces below kitchen floors. Plastic pipe shall not be installed in air plenums. Plastic pipe shall not be installed in a pressure piping system in buildings greater than three stories including any basement levels.

2.1.1 Pipe Joint Materials

Grooved pipe and hubless cast-iron soil pipe shall not be used underground. Solder containing lead shall not be used with copper pipe. Cast iron soil pipe and fittings shall be

marked with the collective trademark of the Cast Iron Soil Institute. Joints and gasket materials shall conform to the following:

- a. Coupling for Cast-Iron Pipe: for hub and spigot type ASTM A 74, AWWA C606. For hubless type: CISPI 310
- b. Coupling for Steel Pipe: AWWA C606.
- c. Couplings for Grooved Pipe: Ductile Iron ASTM A 536 (Grade 65-45-12), Malleable Iron ASTM A 47/A 47M, Grade 32510 or Copper ASTM A 536.
- d. Flange Gaskets: Gaskets shall be made of non-asbestos material in accordance with ASME B16.21. Gaskets shall be flat, 1/16 inch thick, and contain Aramid fibers bonded with Styrene Butadiene Rubber (SBR) or Nitro Butadiene Rubber (NBR). Gaskets shall be the full face or self centering flat ring type. Gaskets used for hydrocarbon service shall be bonded with NBR.
- e. Brazing Material: Brazing material shall conform to AWS A5.8/A5.8M, BCuP-5.
- f. Brazing Flux: Flux shall be in paste or liquid form appropriate for use with brazing material. Flux shall be as follows: lead-free; have a 100 percent flushable residue; contain slightly acidic reagents; contain potassium borides; and contain fluorides.
- g. Solder Material: Solder metal shall conform to ASTM B 32.
- h. Solder Flux: Flux shall be liquid form, non-corrosive, and conform to ASTM B 813, Standard Test 1.
- i. PTFE Tape: PTFE Tape, for use with Threaded Metal or Plastic Pipe.
- j. Rubber Gaskets for Cast-Iron Soil-Pipe and Fittings (hub and spigot type and hubless type): ASTM C 564.
- k. Rubber Gaskets for Grooved Pipe: ASTM D 2000, maximum temperature 230 degrees F.
- l. Flexible Elastomeric Seals: ASTM D 3139, ASTM D 3212 or ASTM F 477.
- m. Bolts and Nuts for Grooved Pipe Couplings: Heat-treated carbon steel, ASTM A 183.
- n. Solvent Cement for Transition Joints between ABS and PVC Nonpressure Piping Components: ASTM D 3138.
- o. Plastic Solvent Cement for ABS Plastic Pipe: ASTM D 2235.
- p. Plastic Solvent Cement for PVC Plastic Pipe: ASTM D 2564 and ASTM D 2855.
- q. Plastic Solvent Cement for CPVC Plastic Pipe: ASTM F 493.
- r. Flanged fittings including flanges, bolts, nuts, bolt patterns, etc., shall be in accordance with ASME B16.5 class 150 and shall have the manufacturer's trademark affixed in accordance with MSS SP-25. Flange material shall conform to ASTM A 105/A 105M. Blind flange material shall conform to ASTM A 516/A 516M cold service and ASTM A 515/A 515M for hot service. Bolts shall be high strength or intermediate strength with material conforming to ASTM A 193/A 193M.

- s. Plastic Solvent Cement for Styrene Rubber Plastic Pipe: ASTM D 3122.
- t. Press fittings for Copper Pipe and Tube: Copper press fittings shall conform to the material and sizing requirements of ASME B16.18 or ASME B16.22 and performance criteria of IAPMO PS 117. Sealing elements for copper press fittings shall be EPDM, FKM or HNBR. Sealing elements shall be factory installed or an alternative supplied fitting manufacturer. Sealing element shall be selected based on manufacturer's approved application guidelines.
- u. Copper tubing shall conform to ASTM B 88M ASTM B 88, Type K, L or M.
- v. Heat-fusion joints for polypropylene piping: ASTM F 2389.

2.1.2 Miscellaneous Materials

Miscellaneous materials shall conform to the following:

- a. Water Hammer Arrester: PDI WH 201.
- b. Copper, Sheet and Strip for Building Construction: ASTM B 370.
- c. Asphalt Roof Cement: ASTM D 2822.
- d. Hose Clamps: SAE J1508.
- e. Supports for Off-The-Floor Plumbing Fixtures: ASME A112.6.1M.
- f. Metallic Cleanouts: ASME A112.36.2M.
- g. Plumbing Fixture Setting Compound: A preformed flexible ring seal molded from hydrocarbon wax material. The seal material shall be nonvolatile nonasphaltic and contain germicide and provide watertight, gastight, odor proof and verminproof properties.
- h. Coal-Tar Protective Coatings and Linings for Steel Water Pipelines: AWWA C203.
- i. Hypochlorites: AWWA B300.
- j. Liquid Chlorine: AWWA B301.
- k. Gauges - Pressure and Vacuum Indicating Dial Type - Elastic Element: ASME B40.100.
- l. Thermometers: ASTM E 1. Mercury shall not be used in thermometers.

2.2 PIPE HANGERS, INSERTS, AND SUPPORTS

Pipe hangers, inserts, and supports shall conform to MSS SP-58 and MSS SP-69.

2.3 FIXTURES AND FIXTURE TRIMMINGS

Fixtures shall be water conservation type, in accordance with ICC IPC. Fixtures for use by the physically handicapped shall be in accordance with ICC/ANSI A117.1. ASME A112.19.3/CSA B45.4 302 stainless steel or Vitreous China, nonabsorbent, hard-burned, and vitrified throughout the body shall be provided. Porcelain enameled ware shall have specially selected, clear white, acid-resisting enamel coating evenly applied on surfaces. No fixture will be accepted that shows cracks, crazes, blisters, thin spots, or other flaws. Fixtures shall be equipped with appurtenances such as traps, faucets, stop valves, and drain fittings. Each fixture and piece of equipment requiring connections to the drainage system, except grease interceptors, shall be equipped with a trap. Brass expansion or toggle bolts capped with acorn nuts shall be provided for supports, and polished chromium-plated pipe, valves, and fittings shall be provided where exposed to view. Fixtures with the supply discharge

below the rim shall be equipped with backflow preventers. Internal parts of flush and/or flushometer valves, shower mixing valves, shower head face plates, pop-up stoppers of lavatory waste drains, and pop-up stoppers and overflow tees and shoes of bathtub waste drains may contain acetal resin, fluorocarbon, nylon, acrylonitrile-butadiene-styrene (ABS) or other plastic material, if the material has provided satisfactory service under actual commercial or industrial operating conditions for not less than 2 years or shall be copper alloy with all visible surfaces chrome plated. Plastic in contact with hot water shall be suitable for 180 degrees F water temperature.

2.3.1 WATER CLOSETS

2.3.1.1 Wall Mounted Water Closet

ASME A112.19.2/CSA B45.1, white vitreous china, siphon jet, elongated bowl, wall mounted. Top of toilet seat height above floor shall be 14 to 15 inches, except 17 to 19 inches for wheelchair water closets. Provide wax bowl ring including plastic sleeve. Provide white solid plastic elongated open-front seat.

Water flushing volume of the water closet and flush valve combination shall not exceed 1.6 gallons per flush.

Provide large diameter flush valve including angle control-stop valve, vacuum breaker, tail pieces, slip nuts, and wall plates; exposed to view components shall be chromium-plated or polished stainless steel. Flush valves shall be non hold-open type. Mount flush valves not less than 11 inches above the fixture. Mounted height of flush valve shall not interfere with the hand rail in ADA stalls.

2.3.1.2 Floor Mounted Water Closet

ASME A112.19.2/CSA B45.1, white vitreous china, siphon jet, elongated bowl, floor-mounted. Top of toilet seat height above floor shall be 17 to 19 inches. Provide wax bowl ring including plastic sleeve. Provide white solid plastic elongated open-front seat.

Water flushing volume of the water closet and flush valve combination shall not exceed 1.6 gallons per flush.

Provide large diameter flush valve including angle control-stop valve, vacuum breaker, tail pieces, slip nuts, and wall plates; exposed to view components shall be chromium-plated or polished stainless steel. Flush valves shall be non hold-open type. Mount flush valves not less than 11 inches above the fixture. Mounted height of flush valve shall not interfere with the hand rail in ADA stalls.

2.3.1.3 Institutional Type Water Closet

ASME A112.19.3/CSA B45.4 302 Stainless Steel, siphon jet, elongated bowl, wall mounted. Top of toilet seat height above floor shall be 19 inches for wheelchair water closets.

Water flushing volume of the water closet and flush valve combination shall not exceed 1.6 gallons per flush.

29 inches minimum clearance from bottom of the counter face to floor. Provide top mounted washerless centers at lavatory faucets. Provide top-mounted solenoid-activated lavatory faucets including electrical-operated light-beam-sensor to energize the solenoid.

2.3.3.3 Battery Operated Countertop Lavatories

ASME A112.19.2/CSA B45.1, white vitreous china, self-rimming, minimum dimensions of 19 inches wide by 17 inches front to rear, with supply openings for use with top mounted center set faucets. Furnish template and mounting kit by lavatory manufacturer. Provide aerator with faucet. Water flow rate shall not exceed 2.2 gpm when measured at a flowing water pressure of 60 psi. Mount counter with the top surface 34 inches above floor and with 29 inches minimum clearance from bottom of the counter face to floor. Provide top mounted washerless centers at lavatory faucets. Provide top-mounted solenoid-activated lavatory faucets including electrical-operated light-beam-sensor to energize the solenoid.

2.3.3.3 Institutional Wall Hung Lavatories

ASME A112.19.3/CSA B45.4 302 stainless steel, straight back type, minimum dimensions of 19 inches, wide by 17 inches front to rear, with supply openings for use with top mounted center set faucets, and openings for concealed arm carrier installation. Provide aerator with faucet. Water flow rate shall not exceed 2.2 gpm when measured at a flowing water pressure of 60 psi. Provide ASME A112.6.1M concealed chair carriers with vertical steel pipe supports and concealed arms for the lavatory. Mount lavatory with the front rim 34 inches above floor and with 29 inches minimum clearance from bottom of the front rim to floor. Provide top mounted washerless center set lavatory faucets. Provide push button self closing metering valve.

2.3.4 Service Sinks

ASME A112.19.3/CSA B45.4 302 stainless steel with integral back and wall hanger supports, minimum dimensions of 22 inches wide by 20 inches front to rear, with two supply openings in 10 inch high back or as specified on the drawings. Provide floor supported wall outlet cast iron P-trap and stainless steel rim guards as recommended by service sink manufacturer. Provide back mounted washerless service sink faucets with vacuum breaker and 0.75 inch external hose threads.

2.3.5 Drinking Water-Coolers

AHRI 1010 with more than a single thickness of metal between the potable water and the refrigerant in the heat exchanger, wall-hung, bubbler style air-cooled condensing unit, 4.75 gph minimum capacity, stainless steel splash receptor and basin, and stainless steel cabinet. Bubblers shall be controlled by push levers or push bars, front mounted or side mounted near the front edge of the cabinet. Bubbler spouts shall be mounted at maximum of 36 inches above floor and at front of unit basin. Spouts shall direct water flow at least 4 inches above unit basin and trajectory parallel or nearly parallel to the front of unit. Provide ASME A112.6.1M concealed steel pipe chair carriers. Provide sensor activated bottle filling station with automatic 30 seconds shut off.

2.3.6 Shower Faucets

Provide single control pressure equalizing shower faucets with body mounted from behind the wall with threaded connections. Provide ball joint self-cleaning shower heads. Provide shower heads which deliver a maximum of 2.2 GPM at 80 PSI per Energy Star requirements.

Provide separate globe valves or angle valves with union connections in each supply to faucet. Provide shower valve with ball type control handle. ADA type showers shall comply ADA requirements.

2.3.7 Floor Drains

Floor drains shall consist of a galvanized body, integral seepage pan, and adjustable perforated or slotted chromium-plated bronze, nickel-bronze, or nickel-brass strainer, consisting of grate and threaded collar. Floor drains shall be cast iron except where metallic waterproofing membrane is installed. Drains shall be of double drainage pattern for embedding in the floor construction. The seepage pan shall have weep holes or channels for drainage to the drainpipe. The strainer shall be adjustable to floor thickness. A clamping device for attaching flashing or waterproofing membrane to the seepage pan without damaging the flashing or waterproofing membrane shall be provided when required. Drains shall be provided with threaded connection. Between the drain outlet and waste pipe, a neoprene rubber gasket conforming to ASTM C 564 may be installed, provided that the drain is specifically designed for the rubber gasket compression type joint. Floor and shower drains shall conform to ASME A112.6.3. Provide drain with trap primer connection, trap primer, and connection piping. Primer shall meet ASSE 1018.

2.3.8 Water Hammer Arresters

Commercial-type water hammer arresters shall be provided on hot- and cold-water supplies and shall be located as generally indicated, with precise location and sizing to be in accordance with PDI WH 201. Water hammer arresters, where concealed, shall be accessible by means of access doors or removable panels. Commercial-type water hammer arresters shall conform to ASSE 1010. Vertical capped pipe columns will not be permitted.

PART 3 EXECUTION

3.1 General Installation Requirements

Piping located in air plenums shall conform to NFPA 90A requirements. Piping located in shafts that constitute air ducts or that enclose air ducts shall be noncombustible in accordance with NFPA 90A. Installation of plastic pipe where in compliance with NFPA may be installed in accordance with PPFA-01. The plumbing system shall be installed complete with necessary fixtures, fittings, traps, valves, and accessories. Water and drainage piping shall be extended 5 feet outside the building, unless otherwise indicated. A gate valve and drain shall be installed on the water service line inside the building approximately 6 inches above the floor from point of entry. Piping shall be connected to the exterior service lines or capped or plugged if the exterior service is not in place. Sewer and water pipes shall be laid in separate trenches, except when otherwise shown. Exterior underground utilities shall be at least 12 inches below the finish grade or as indicated on the drawings. If trenches are closed or the pipes are otherwise covered before being connected to the service lines, the location of the end of each plumbing utility shall be marked with a stake or other acceptable means. Valves shall be installed with control no lower than the valve body.

3.1.1 Water Pipe, Fittings, and Connections

3.1.1.1 Utilities

The piping shall be extended to fixtures, outlets, and equipment. The hot-water and cold-water piping system shall be arranged and installed to permit draining. The supply line to

each item of equipment or fixture, except faucets, flush valves, or other control valves which are supplied with integral stops, shall be equipped with a shutoff valve to enable isolation of the item for repair and maintenance without interfering with operation of other equipment or fixtures. Supply piping to fixtures, faucets, hydrants, shower heads, and flushing devices shall be anchored to prevent movement.

3.1.1.2 Cutting and Repairing

The work shall be carefully laid out in advance, and unnecessary cutting of construction shall be avoided. Damage to building, piping, wiring, or equipment as a result of cutting shall be repaired by mechanics skilled in the trade involved.

3.1.1.3 Protection of Fixtures, Materials, and Equipment

Pipe openings shall be closed with caps or plugs during installation. Fixtures and equipment shall be tightly covered and protected against dirt, water, chemicals, and mechanical injury. Upon completion of the work, the fixtures, materials, and equipment shall be thoroughly cleaned, adjusted, and operated. Safety guards shall be provided for exposed rotating equipment.

3.1.1.4 Water Hammer Arresters

Commercial-type water hammer arresters shall be provided on hot- and cold-water supplies and shall be located as generally indicated, with precise location and sizing to be in accordance with PDI WH 201. Water hammer arresters, where concealed, shall be accessible by means of access doors or removable panels. Commercial-type water hammer arresters shall conform to ASSE 1010. Vertical capped pipe columns will not be permitted.

3.1.2 Joints

Installation of pipe and fittings shall be made in accordance with the manufacturer's recommendations. Mitering of joints for elbows and notching of straight runs of pipe for tees will not be permitted. Joints shall be made up with fittings of compatible material and made for the specific purpose intended.

3.1.2.1 Threaded

Threaded joints shall have American Standard taper pipe threads conforming to ASME B1.20.1. Only male pipe threads shall be coated with graphite or with an approved graphite compound, or with an inert filler and oil, or shall have a polytetrafluoroethylene tape applied.

3.1.3 Dissimilar Pipe Materials

Connections between ferrous and non-ferrous copper water pipe shall be made with dielectric unions or flange waterways. Dielectric waterways shall have temperature and pressure rating equal to or greater than that specified for the connecting piping. Waterways shall have metal connections on both ends suited to match connecting piping. Dielectric waterways shall be internally lined with an insulator specifically designed to prevent current flow between dissimilar metals. Dielectric flanges shall meet the performance requirements described herein for dielectric waterways. Connecting joints between plastic and metallic pipe shall be made with transition fitting for the specific purpose.

3.1.4 Structural Attachments

Attachment to building structure concrete and masonry shall be by cast-in concrete inserts, built-in anchors, or masonry anchor devices. Inserts and anchors shall be applied with a safety factor not less than 5. Supports shall not be attached to metal decking. Supports shall not be attached to the underside of concrete filled floor or concrete roof decks unless approved by the resident engineer. Masonry anchors for overhead applications shall be constructed of ferrous materials only.

3.2 Fixtures and Fixture Trimmings

Polished chromium-plated pipe, valves, and fittings shall be provided where exposed to view. Angle stops, straight stops, stops integral with the faucets, or concealed type of lock-shield, and loose-key pattern stops for supplies with threaded, sweat or solvent weld inlets shall be furnished and installed with fixtures. Where connections between copper tubing and faucets are made by rubber compression fittings, a beading tool shall be used to mechanically deform the tubing above the compression fitting. Exposed traps and supply pipes for fixtures and equipment shall be connected to the rough piping systems at the wall, unless otherwise specified under the item. Floor and wall escutcheons shall be as specified. Drain lines and hot water lines of fixtures for handicapped personnel shall be insulated and do not require polished chrome finish. Plumbing fixtures and accessories shall be installed within the space shown.

3.2.1 Fixture Connections

Where space limitations prohibit standard fittings in conjunction with the cast-iron floor flange, special short-radius fittings shall be provided. Connections between earthenware fixtures and flanges on soil pipe shall be made gastight and watertight with a closet-setting compound or neoprene gasket and seal. Use of natural rubber gaskets or putty will not be permitted. Fixtures with outlet flanges shall be set the proper distance from floor or wall to make a first-class joint with the closet-setting compound or gasket and fixture used.

3.2.2 Flushometer Valves

Flushometer valves shall be secured to prevent movement by anchoring the long finished top spud connecting tube to wall adjacent to valve with approved metal bracket. Flushometer valves for water closets shall be installed 39 inches above the floor, except at water closets intended for use by the physically handicapped where flushometer valves shall be mounted at approximately 30 inches above the floor and arranged to avoid interference with grab bars. In addition, for water closets intended for handicap use, the flush valve handle shall be installed on the wide side of the enclosure. Bumpers for water closet seats shall be installed on the wall.

3.2.3 Height of Fixture Rims Above Floor

Lavatories shall be mounted with rim 31 inches above finished floor. Wall-hung drinking fountains and water coolers shall be installed with rim 42 inches above floor. Wall-hung service sinks shall be mounted with rim 28 inches above the floor. Installation of fixtures for use by the physically handicapped shall be in accordance with ICC/ANSI A117.1.

3.2.4 Fixture Supports

Fixture supports for off-the-floor lavatories, urinals, water closets, and other fixtures of similar size, design, and use, shall be of the chair-carrier type. The carrier shall provide the necessary means of mounting the fixture, with a foot or feet to anchor the assembly to the floor slab. Adjustability shall be provided to locate the fixture at the desired height and in proper relation to the wall. Support plates, in lieu of chair carrier, shall be fastened to the wall structure only where it is not possible to anchor a floor-mounted chair carrier to the floor slab.

3.2.4.1 Support for Concrete-Masonry Wall Construction

Chair carrier shall be anchored to floor slab. Where a floor-anchored chair carrier cannot be used, a suitable wall plate shall be fastened to the concrete wall using through bolts and a back-up plate.

3.2.4.2 Support for Steel Stud Frame Partitions

Chair carrier shall be used. The anchor feet and tubular uprights shall be of the heavy duty design; and feet (bases) shall be steel and welded to a square or rectangular steel tube upright. Wall plates, in lieu of floor-anchored chair carriers, shall be used only if adjoining steel partition studs are suitably reinforced to support a wall plate bolted to these studs.

3.2.4.3 Wall-Mounted Water Closet Gaskets

Where wall-mounted water closets are provided, reinforced wax, treated felt, or neoprene gaskets shall be provided. The type of gasket furnished shall be as recommended by the chair-carrier manufacturer.

3.2.5 Backflow Prevention Devices

Plumbing fixtures, equipment, and pipe connections shall not cross connect or interconnect between a potable water supply and any source of nonpotable water. Backflow preventers shall be installed where indicated and in accordance with ICC IPC or IAPMO UPC at all other locations necessary to preclude a cross-connect or interconnect between a potable water supply and any nonpotable substance. In addition backflow preventers shall be installed at all locations where the potable water outlet is below the flood level of the equipment, or where the potable water outlet will be located below the level of the nonpotable substance. Backflow preventers shall be located so that no part of the device will be submerged. Backflow preventers shall be of sufficient size to allow unrestricted flow of water to the equipment, and preclude the backflow of any nonpotable substance into the potable water system. Bypass piping shall not be provided around backflow preventers. Access shall be provided for maintenance and testing. Each device shall be a standard commercial unit.

3.2.6 Access Panels

Access panels shall be provided for concealed valves and controls, or any item requiring inspection or maintenance. Access panels shall be of sufficient size and located so that the concealed items may be serviced, maintained, or replaced.

3.2.8 Traps

Each trap shall be placed as near the fixture as possible, and no fixture shall be double-trapped. Traps installed on cast-iron soil pipe shall be cast iron. Traps installed on steel pipe or copper tubing shall be recess-drainage pattern, or brass-tube type. Traps installed on plastic pipe may be plastic conforming to ASTM D 3311. Traps for acid-resisting waste shall be of the same material as the pipe.

3.3 Identification Systems

3.3.1 Identification Tags

Identification tags made of brass, engraved laminated plastic, or engraved anodized aluminum, indicating service and valve number shall be installed on valves, except those valves installed on supplies at plumbing fixtures. Tags shall be 1-3/8 inch minimum diameter, and marking shall be stamped or engraved. Indentations shall be black, for reading clarity. Tags shall be attached to valves with No. 12 AWG, copper wire, chrome-plated beaded chain, or plastic straps designed for that purpose.

3.4 Escutcheons

Escutcheons shall be provided at finished surfaces where bare or insulated piping, exposed to view, passes through floors, walls, or ceilings, except in boiler, utility, or equipment rooms. Escutcheons shall be fastened securely to pipe or pipe covering and shall be satin-finish, corrosion-resisting steel, polished chromium-plated zinc alloy, or polished chromium-plated copper alloy. Escutcheons shall be either one-piece or split-pattern, held in place by internal spring tension or setscrew.

3.5 Tests, Flushing And Disinfection

3.5.1 Plumbing System

The following tests shall be performed on the plumbing system in accordance with ICC IPC or IAPMO UPC, except that the drainage and vent system final test shall include the smoke test. The Contractor has the option to perform a peppermint test in lieu of the smoke test. If a peppermint test is chosen, the Contractor must submit a testing procedure to the resident engineer for approval.

- a. Drainage and Vent Systems Test. The final test shall include a smoke test.
- b. Building Sewers Tests.
- c. Water Supply Systems Tests.

3.5.2 Defective Work

If inspection or test shows defects, such defective work or material shall be replaced or repaired as necessary and inspection and tests shall be repeated. Repairs to piping shall be made with new materials. Caulking of screwed joints or holes will not be acceptable.

3.5.3 System Flushing

3.5.3.1 During Flushing

Before operational tests or disinfection, potable water piping system shall be flushed with [hot] potable water. Sufficient water shall be used to produce a water velocity that is capable of entraining and removing debris in all portions of the piping system. This requires simultaneous operation of all fixtures on a common branch or main in order to produce a flushing velocity of approximately 4 fps through all portions of the piping system. In the event that this is impossible due to size of system, the Contracting Officer (or the designated representative) shall specify the number of fixtures to be operated during flushing. Contractor shall provide adequate personnel to monitor the flushing operation and to ensure that drain lines are unobstructed in order to prevent flooding of the facility. Contractor shall be responsible for any flood damage resulting from flushing of the system. Flushing shall be continued until entrained dirt and other foreign materials have been removed and until discharge water shows no discoloration. All faucets and drinking water fountains, to include any device considered as an end point device by NSF/ANSI 61, Section 9, shall be flushed a minimum of 1 L 0.25 gallons per 24 hour period, ten times over a 14 day period.

3.5.3.2 After Flushing

System shall be drained at low points. Strainer screens shall be removed, cleaned, and replaced. After flushing and cleaning, systems shall be prepared for testing by immediately filling water piping with clean, fresh potable water. Any stoppage, discoloration, or other damage to the finish, furnishings, or parts of the building due to the Contractor's failure to properly clean the piping system shall be repaired by the Contractor. When the system flushing is complete, the hot-water system shall be adjusted for uniform circulation. Flushing devices and automatic control systems shall be adjusted for proper operation according to manufacturer's instructions. Comply with ASHRAE 90.1 - SI ASHRAE 90.1 - IP for minimum efficiency requirements. Unless more stringent local requirements exist, lead levels shall not exceed limits established by 40 CFR 50.12 Part 141.80(c)(1). The water supply to the building shall be tested separately to ensure that any lead contamination found during potable water system testing is due to work being performed inside the building.

3.5.4 Operational Test

Upon completion of flushing and prior to disinfection procedures, the Contractor shall subject the plumbing system to operating tests to demonstrate satisfactory installation, connections, adjustments, and functional and operational efficiency. Such operating tests shall cover a period of not less than 8 hours for each system and shall include the following information in a report with conclusion as to the adequacy of the system:

- a. Time, date, and duration of test.
- b. Water pressures at the most remote and the highest fixtures.
- c. Operation of each fixture and fixture trim.
- d. Operation of each valve, hydrant, and faucet.
- e. Pump suction and discharge pressures.

- f. Temperature of each domestic hot-water supply.
- g. Operation of each floor and roof drain by flooding with water.
- h. Operation of each vacuum breaker and backflow preventer.
- i. Complete operation of each water pressure booster system, including pump start pressure and stop pressure.
- j. Compressed air readings at each compressor and at each outlet. Each indicating instrument shall be read at 1/2 hour intervals. The report of the test shall be submitted in quadruplicate. The Contractor shall furnish instruments, equipment, and personnel required for the tests; the Government will furnish the necessary water and electricity.

3.5.5 Disinfection

After all system components are provided and operational tests are complete, the entire domestic hot- and cold-water distribution system shall be disinfected. Before introducing disinfecting chlorination material, entire system shall be flushed with potable water until any entrained dirt and other foreign materials have been removed.

Water chlorination procedure shall be in accordance with AWWA C651 and AWWA C652 as modified. The chlorinating material shall be hypochlorites or liquid chlorine. The chlorinating material shall be fed into the water piping system at a constant rate at a concentration of at least 50 parts per million (ppm).

Test the chlorine residual level in the water at 6 hour intervals for a continuous period of 24 hours. If at the end of a 6 hour interval, the chlorine residual has dropped to less than 25 ppm, flush the piping including tanks with potable water, and repeat the above chlorination procedures. During the chlorination period, each valve and faucet shall be opened and closed several times.

After the second 24 hour period, verify that no less than 25 ppm chlorine residual remains in the treated system. The 24 hour chlorination procedure must be repeated until no less than 25 ppm chlorine residual remains in the treated system.

Upon the specified verification, the system including tanks shall then be flushed with potable water until the residual chlorine level is reduced to less than one part per million. During the flushing period, each valve and faucet shall be opened and closed several times.

Take addition samples of water in disinfected containers, for bacterial examination, at locations specified by the resident engineer Test these samples for total coliform organisms (coliform bacteria, fecal coliform, streptococcal, and other bacteria) in accordance with EPA SM 9223 or AWWA 10084. The testing method used shall be EPA approved for drinking water systems and shall comply with applicable local and state requirements.

Disinfection shall be repeated until bacterial tests indicate the absence of coliform organisms (zero mean coliform density per 100 milliliters) in the samples for at least 2 full days. The system will not be accepted until satisfactory bacteriological results have been obtained.

3.6 Waste Management

Place materials defined as hazardous or toxic waste in designated containers. Return solvent and oil soaked rags for contaminant recovery and laundering or for proper disposal. Close and seal tightly partly used sealant and adhesive containers and store in protected, well-ventilated, fire-safe area at moderate temperature. Place used sealant and adhesive tubes and containers in areas designated for hazardous waste. Separate copper and ferrous pipe waste in accordance with the Waste Management Plan and place in designated areas for reuse.

3.7 Posted Instructions

Framed instructions under glass or in laminated plastic, including wiring and control diagrams showing the complete layout of the entire system, shall be posted where directed. Condensed operating instructions explaining preventive maintenance procedures, methods of checking the system for normal safe operation, and procedures for safely starting and stopping the system shall be prepared in typed form, framed as specified above for the wiring and control diagrams and posted beside the diagrams. The framed instructions shall be posted before acceptance testing of the systems.

3.8 Tables

**TABLE I
PIPE AND FITTING MATERIALS FOR
DRAINAGE, WASTE, AND VENT PIPING SYSTEMS**

Item #	Pipe and Fitting Materials F	SERVICE				
		A	B	C	D	E
1	Cast iron soil pipe and fittings, hub and spigot, ASTM A 74 with compression gaskets. Pipe and fittings shall be marked with the CISPI trademark.	X	X	X	X	X
2	Cast iron soil pipe and fittings hubless, CISPI 301 and ASTM A 888. Pipe and fittings shall be marked with the CISPI trademark.		X	X	X	X
3	Cast iron drainage fittings, threaded, ASME B16.12 for use with Item 10	X		X	X	
4	Cast iron screwed fittings (threaded) ASME B16.4 for use with Item 10				X	X
5	Grooved pipe couplings, ferrous and non-ferrous pipe ASTM A 536 and ASTM A 47/A 47M	X	X		X	X
6	Ductile iron grooved joint fittings for ferrous pipe ASTM A 536 and ASTM A 47/A 47M for use with Item 5	X	X		X	X

Item #	Pipe and Fitting Materials F	SERVICE				
		A	B	C	D	E
7	Bronze sand casting grooved joint pressure fittings for non-ferrous pipe ASTM B 584, for use with Item 5	X	X		X	X
8	Wrought copper grooved joint pressure fittings for non-ferrous pipe ASTM B 75M ASTM B 75 C12200, ASTM B 152/B 152M, C11000, ASME B16.22 ASME B16.22 for use with Item 5	X	X			
9	Malleable-iron threaded fittings, galvanized ASME B16.3 for use with Item 10				X	X
10	Steel pipe, seamless galvanized, ASTM A 53/A 53M, Type S, Grade B	X			X	
11	Seamless red brass pipe, ASTM B 43		X	X		
12	Bronzed flanged fittings, ASME B16.24 for use with Items 11 and 14				X	X
13	Cast copper alloy solder joint pressure for use with Item 14 fittings, ASME B16.18				X	X
14	Seamless copper pipe, ASTM B 42				X	
15	Cast bronze threaded fittings, ASME B16.15				X	X
16	Copper drainage tube, (DWV), ASTM B 306	X*	X	X*	X	X
17	Wrought copper and wrought alloy solder-joint drainage fittings. ASME B16.29	X	X	X	X	X

Item #	Pipe and Fitting Materials F	SERVICE				
		A	B	C	D	E
18	Cast copper alloy solder joint drainage fittings, DWV, ASME B16.23	X	X	X	X	X
19	Acrylonitrile-Butadiene-Styrene (ABS) plastic drain, waste, and vent pipe and fittings ASTM D 2661,	X	X	X	X	X
20	Polyvinyl Chloride plastic drain, waste and vent pipe and fittings, ASTM D 2665, ASTM F 891, (Sch 40) ASTM F 1760	X	X	X	X	X
21	Process glass pipe and fittings, ASTM C 1053					X
22	High-silicon content cast iron pipe and fittings (hub and spigot, and mechanical joint), ASTM A 518/A 518M		X		X	X
23	Polypropylene (PP) waste pipe and fittings, ASTM D 4101					X
24	Filament-wound reinforced thermosetting resin (RTRP) pipe, ASTM D 2996					X

Legend:

Services =

- A - Underground Building Soil, Waste and Storm Drain
- B - Aboveground Soil, Waste, Drain In Buildings
- C - Underground Vent
- D - Aboveground Vent
- E - Interior Rainwater Conductors Aboveground
- F - Corrosive Waste and Vent Above And Belowground
- * - Hard Temper

**TABLE II
PIPE AND FITTING MATERIALS FOR PRESSURE PIPING SYSTEMS**

Item #	Pipe and Fitting Materials	Grade	SERVICE			
		A or B	A	B	C	D
1	Malleable-iron threaded fittings, a. Galvanized, ASME B16.3 for use with Item 4a b. Same as "a" but not galvanized X for use with Item 4b		X	X	X	X
2	Grooved pipe couplings, ferrous pipe ASTM A 536 and ASTM A 47/A 47M, non-ferrous pipe, ASTM A 536 and ASTM A 47/A 47M		X	X	X	
3	Ductile iron grooved joint fittings for ferrous pipe ASTM A 536 and ASTM A 47/A 47M, for use with Item 2		X	X	X	
4	Steel pipe: a. Seamless, galvanized, ASTM A 53/A 53M, Type S, b. Seamless, black, ASTM A 53/A 53M, Type S	Grade B	X	X	X	X
		Grade B			X	
5	Seamless red brass pipe, ASTM B 43		X	X		X
6	Bronze flanged fittings, ASME B16.24 for use with Items 5 and 7		X	X		X
7	Seamless copper pipe, ASTM B 4 2		X	X		X
8	Seamless copper water tube, ASTM B 88, ASTM B 88M		X**	X**	X**	X***
9	Cast bronze threaded fittings, ASME B16.15 for use with Items 5 and 7		X	X		X
10	Wrought copper and bronze solder-joint pressure fittings, ASME B16.22 for use with Items 5, 7 and 8		X	X	X	X
11	Cast copper alloy solder-joint pressure fittings, ASME B16.18 for use with Item 8		X	X	X	X

**TABLE II
PIPE AND FITTING MATERIALS FOR PRESSURE PIPING SYSTEMS**

Item #	Pipe and Fitting Materials	Grade	SERVICE			
		A or B	A	B	C	D
12	Bronze and sand castings grooved joint pressure fittings for non-ferrous pipe ASTM B 584, for use with Item 2		X	X	X	
13	Polyethylene (PE) plastic pipe,		X			X
14	Socket-type chlorinated polyvinyl chloride (CPVC) plastic pipe fittings Schedule 80, ASTM F 439 for use with Items 20, 21, and 22		X	X	X	
15	Polyvinyl chloride (PVC) plastic pipe, Schedules 40, 80, and 120, ASTM D 1785			X		X
16	Polyvinyl chloride (PVC) pressure-rated pipe (SDR Series), ASTM D 2241			X		X
17	Polyvinyl chloride (PVC) plastic pipe fittings, Schedule 40, ASTM D 2466			X		X
18	Socket-type polyvinyl chloride (PVC) plastic pipe fittings, schedule 80, ASTM D 2467 for use with Items 26 and 27		X			X
19	Threaded polyvinyl chloride (PVC) plastic pipe fittings, schedule 80, ASTM D 2464		X			X
20	Joints for IPS PVC pipe using solvent cement, ASTM D 2672		X			X
21	Polypropylene (PP) plastic pipe and fittings; ASTM F 2389		X	X		X
22	Steel pipeline flanges, MSS SP-44		X	X		
23	Fittings: brass or bronze; ASME B16.15, and ASME B16.18 ASTM B 828		X	X		
24	Carbon steel pipe unions, socket-welding and threaded, MSS SP-83		X	X	X	
25	Malleable-iron threaded pipe unions ASME B16.39		X	X		

Item #	Pipe and Fitting Materials	Grade	SERVICE			
		A or B	A	B	C	D
26	Nipples, pipe threaded ASTM A 733		X	X	X	
27	Crosslinked Polyethylene (PEX) Plastic Pipe ASTM F 877		X	X		X
28	Press Fittings		X	X		

A - Cold Water Service Aboveground

B - Hot and Cold Water Distribution 82 degrees C 180 degrees F Maximum

Aboveground

C - Compressed Air Lubricated

D - Cold Water Service Belowground

Indicated types are minimum wall thicknesses.

** - Type L - Hard

*** - Type K - Hard temper with brazed joints only or type K-soft temper
without joints in or under floors

**** - In or under slab floors only brazed joints

END OF SECTION

SECTION 22 1336

PNEUMATIC SEWAGE EJECTORS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C115/A21.15 (2005) Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges

AWWA C203 (2008) Coal-Tar Protective Coatings and Linings for Steel Water Pipelines - Enamel and Tape - Hot-Applied

ASME INTERNATIONAL (ASME)

ASME B1.20.1 (1983; R 2006) Pipe Threads, General Purpose (Inch)

ASME B1.20.2M (2006) Pipe Threads, 60 Deg. General Purpose (Metric)

ASME B16.1 (2005) Gray Iron Threaded Fittings; Classes 25, 125 and 250

ASME B16.3 (2006) Malleable Iron Threaded Fittings, Classes 150 and 300

ASME B16.39 (2009) Standard for Malleable Iron Threaded Pipe Unions; Classes 150, 250, and 300

ASME BPVC SEC VIII D1 (2007; Addenda 2008; Addenda 2009) BPVC Section VIII-Rules for Construction of Pressure Vessels Division 1

ASTM INTERNATIONAL (ASTM)

ASTM A 153/A 153M (2009) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM A 53/A 53M (2010) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

COMPRESSED AIR AND GAS INSTITUTE (CAGI)

CAGI B19.1 (2010) Safety Standard for Compressor Systems

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)

MSS SP-58 (2009) Pipe Hangers and Supports - Materials, Design and Manufacture, Selection, Application, and Installation.

MSS SP-69 (2003) Pipe Hangers and Supports - Selection and Application (ANSI Approved American National Standard)

MSS SP-70 (2006) Gray Iron Gate Valves, Flanged and Threaded Ends

MSS SP-80 (2008) Bronze Gate, Globe, Angle and Check Valves

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA 250 (2008) Enclosures for Electrical Equipment (1000 Volts Maximum)

NEMA ICS 2 (2000; R 2005; Errata 2008) Standard for Controllers, Contactors, and Overload Relays Rated 600 V

NEMA MG 1 (2009) Motors and Generators

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC PS 11.01 (1982; E 2004) Black (or Dark Red) Coal Tar Epoxy Polyamide Painting System

1.2 SYSTEM DESCRIPTION

Provide sewage ejectors of the duplex pump type complete with electric motors, control equipment and all necessary accessories. Capacities of all equipment and materials shall be not less than those specified or indicated. Ejector shall be able to pass through maximum sphere size of 3 inch diameter.

1.3 SUBMITTALS

Submit the following:

SD-02 Shop Drawings

Equipment Installation

Drawings containing complete wiring and schematic diagrams and any other details required to demonstrate that the system has been coordinated and will function as a unit. Drawings shall show proposed layout and anchorage of equipment and appurtenances, and equipment relationship to other parts of the work including clearances for maintenance and operation.

SD-03 Product Data

Materials and Equipment
Sewage Receiver
Air Compressor
Air Reservoir
Electric Motor
Controls

Data consisting of manufacturer's descriptive and technical literature, catalog cuts, performance charts and curves, and installation instructions.

Spare Parts
Spare Parts data, as specified. SD-10 Operation and Maintenance Data
Operation and Maintenance Manuals

Six copies of operation and six copies of maintenance manuals are required for the equipment furnished. One complete set shall be furnished prior to performance testing and the remainder shall be furnished upon acceptance. Manuals shall be approved prior to the field training course. Operating manuals shall detail the step-by-step procedures required for system start-up, operation, and shut-down. Operating manuals shall include the manufacturer's name, model number, parts list, and a brief description of all equipment and their basic operating features. Maintenance manuals shall list routine maintenance procedures, possible breakdowns and repairs, and troubleshooting guides. Maintenance manuals shall include piping and equipment layout and simplified wiring and control diagrams of the system as installed.

1.4 DELIVERY, STORAGE, AND HANDLING

Protect equipment delivered and placed in storage from the weather, excessive humidity and excessive temperature variation; and dirt, dust, or other contaminants.

1.5 EXTRA MATERIALS

Submit spare parts data for each different item of material and equipment specified and include a complete list of parts and supplies, with current unit prices and source of supply. Provide one set of special tools, calibration devices, and instruments required for operation, calibration, and maintenance of the equipment.

PART 2 PRODUCTS

2.1 GENERAL MATERIAL AND EQUIPMENT REQUIREMENTS

2.1.1 Standard Products

Provide materials and equipment which are the standard products of a manufacturer regularly engaged in the manufacture of such products and that essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening. Equipment shall be supported by a service organization that is, in the opinion of the resident engineer, reasonably convenient to the site.

2.1.2 Nameplates

Each major item of equipment shall have the manufacturer's name, address, type or style, model or serial number, and catalog number on a plate secured to the item of equipment.

2.1.3 Protection from Moving Parts

Fully enclose or guard belts, pulleys, chains, couplings, projecting setscrews, keys, and other rotating parts located so that any person can come in close proximity thereto.

2.2 MATERIALS AND EQUIPMENT

Materials and equipment shall conform to the following requirements:

2.2.1 Check Valves

Check valves shall conform to MSS SP-80, Type 3 or 4, Class 125, except that valves on the discharge side of the receivers shall be provided with replaceable valve seats.

2.2.2 Cast Iron Gate Valves

Cast iron gate valves shall conform to MSS SP-70, Type I, II, or III, Class 125, threaded or flanged ends.

2.2.3 Bronze Gate Valves

Bronze gate valves shall conform to MSS SP-80, Type 1, Class 125.

2.2.4 Motor Controls

Motor controls shall conform to NEMA ICS 2.

2.2.5 Cast Iron Pipe

Cast iron pipe shall conform to AWWA C115/A21.15, Class 150, as applicable to pipe barrel only; ASME B16.1, Class 125, for pipe flange.

2.2.6 Steel Pipe

Steel pipe shall conform to ASTM A 53/A 53M, standard weight, zinc coated.

2.2.7 Cast Iron Pipe Fittings

Cast iron pipe fittings shall conform to ASME B16.1.

2.2.8 Malleable Iron Fittings

Malleable iron fittings shall conform to ASME B16.3.

2.2.9 Malleable Iron Unions

Malleable iron unions shall conform to ASME B16.39, Type B.

2.2.10 Pipe Hangers and Supports

Pipe hangers and supports shall conform to MSS SP-58 and MSS SP-69.

2.2.11 Bolts, Nuts, Anchors, and Washers

Bolts, nuts, anchors, washers, and all other types of support necessary for the installation of the equipment shall be furnished and shall be of steel galvanized according to ASTM A 153/A 153M.

2.6 ELECTRIC MOTOR

Each electric motor shall conform to NEMA MG 1 and shall be suitable for operation of 460-volt 60-Hz 3-phase alternating current. Motor frames shall be of the totally enclosed type. Temperature rise shall be based on minus 40 degrees F ambient temperature.

2.7 CONTROLS

Provide an automatic-control system for each ejector. The controls shall consist of suitable devices for regulating the cycle of each sewage receiver and each compressor. Valves and accessories as required to control the flow of air to the sewage receiver, to exhaust the residual air, and to vent the receiver to the outside shall be provided. Automatic controls shall be enclosed in a NEMA 250, Type 3R panel and shall be completely wired and tested with internal connections being made on terminal blocks. Sensor, motor control, and motor shall be factory pre-connected. Local or remote alarm signaling shall be provided as required. The ejection cycle shall be controlled by a fully transistorized solid-state electronic liquid level control device. The liquid level control device shall sense liquid level by use of a stainless steel probe mounted in the receiver. Controls shall include manual-off-automatic three-way switch.

2.8 ELECTRICAL WORK

Provide electric motor driven equipment specified complete with motor, motor starter, wiring, and controls. Electrical characteristics shall be as indicated. Motor starters shall be provided complete with properly sized thermal overload protection and other appurtenances necessary for the motor control specified. Starters shall be furnished in watertight enclosures. Motors shall be of sufficient capacity to drive the equipment at the specified capacity without exceeding the nameplate rating on the motor. Manual or automatic control and protective or signal devices required for the operation specified and any control wiring required for controls and devices but not shown shall be provided.

2.9 FACTORY PAINTING

The equipment shall be thoroughly cleaned, primed, and given two finish coats of paint at the factory in accordance with the recommendations of the manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

After becoming familiar with all details of the work, verify all dimensions in the field, and advise the Contracting Officer of any discrepancy before performing the work.

3.2 VALVE INSTALLATION

Valves installed in the steel pipeline shall be bronze with screwed ends, and valves installed in the cast-iron pipeline shall have bronze-mounted iron bodies with flanged ends. Each valve shall have the year of manufacture cast in the body. Remove and replace, at no additional cost to the Government, any valve that does not seat tightly or does not operate satisfactorily.

3.2.1 Gate Valves

Open gate valves by turning counterclockwise. The operating nut shall have an arrow cast in the metal, indicating the direction of opening. Before the valve is installed, the stuffing boxes shall be tightened and the valve operated to see that all parts are in working condition.

3.2.2 Check Valves

Provide check valves with freely operating, positively seating flaps, and easily removable covers.

3.3 EQUIPMENT INSTALLATION

Unless otherwise indicated, install all equipment in accordance with manufacturer's recommendations.

3.4 TESTS

Either furnish the manufacturer's report of ejector capacity determined by shop tests or make such tests as may be necessary to determine the capacity, and perform such other tests as will ensure that the ejectors have been installed in accordance with the specifications.

3.5 MANUFACTURER'S FIELD SERVICES

Provide services of a manufacturer's representative who is experienced in the installation, adjustment, and operation of the equipment specified. The representative shall supervise the installation, adjustment, and testing of the equipment in accordance with the approved Operation and Maintenance Manuals.

END OF SECTION

SECTION 23 8202

UNITARY HEATING AND COOLING EQUIPMENT

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)

AHRI 320	(1998) Water-Source Heat Pumps
AHRI 325	(1998) Ground Water-Source Heat Pumps
AHRI 350	(2009) Sound Rating of Non-Ducted Indoor Air-Conditioning Equipment
AHRI 410	(2001; Addendum 1-2002; Addendum 2-2005) Forced-Circulation Air-Cooling and Air-Heating Coils
AHRI 490	(2003) Remote Mechanical-Draft Evaporatively-Cooled Refrigerant Condensers
AHRI 540	(2004) Performance Rating Of Positive Displacement Refrigerant Compressors and Compressor Units
AHRI 700	(2006; Addendum 1 2009) Specifications for Fluorocarbon Refrigerants
ANSI/AHRI 210/240	(2008) Performance Rating of Unitary Air-Conditioning & Air-Source Heat Pump Equipment
ANSI/AHRI 270	(2009) Sound Rating of Outdoor Unitary Equipment
ANSI/AHRI 340/360	(2007) Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment
ANSI/AHRI 370	(2001) Sound Rating of Large Outdoor Refrigerating and Air-Conditioning Equipment

ANSI/AHRI 460 (2005) Performance Rating of Remote Mechanical-Draft Air-Cooled Refrigerant Condensers

ANSI/AHRI 495 (2005) Performance Rating of Refrigerant Liquid Receivers

ANSI/AHRI/CSA 310/380 (2004) Standard for Packaged Terminal Air-Conditioners and Heat Pumps

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ANSI/ASHRAE 15 & 34 (2010; Std 15 Addenda a, b, d; Std 34 Addenda a, b, d) ANSI/ASHRAE Standard 15-Safety Standard for Refrigeration Systems and ANSI/ASHRAE Standard 34-Designation and Safety Classification of Refrigerants

ASHRAE 127 (2007) Method of Testing for Rating Computer and Data Processing Room Unitary Air-Conditioners

ASHRAE 52.1 (1992; Interpretation 1 2007) Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter

ASHRAE 64 (2005) Methods of Testing Remote Mechanical-Draft Evaporative Refrigerant Condensers

AMERICAN WELDING SOCIETY (AWS)

AWS Z49.1 (2005) Safety in Welding and Cutting and Allied Processes

ASME INTERNATIONAL (ASME)

ASME BPVC SEC IX (2010) BPVC Section IX-Welding and Brazing Qualifications

ASME BPVC SEC VIII D1 (2010) BPVC Section VIII-Rules for Construction of Pressure Vessels Division

ASSOCIATION OF HOME APPLIANCE MANUFACTURERS (AHAM)

AHAM RAC-1 (2005) Directory of Certified Room Air Conditioners

ASTM INTERNATIONAL (ASTM)

ASTM A 123/A 123M	(2009) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 153/A 153M	(2009) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 307	(2007b) Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
ASTM B 117	(2009) Standing Practice for Operating Salt Spray (Fog) Apparatus
ASTM C 1071	(2005e1) Standard Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material)
ASTM D 520	(2000; R 2005) Zinc Dust Pigment
ASTM E 84	(2010) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM F 104	(2003; R 2009) Standard Classification System for Nonmetallic Gasket Materials

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA ICS 6	(1993; R 2001; R 2006) Enclosures
NEMA MG 1	(2009) Motors and Generators
NEMA MG 2	(2001; Rev 1 2007) Safety Standard for Construction and Guide for Selection, Installation and Use of Electric Motors and Generators

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 54	(2009; TIA 09-1; TIA 09-2; Errata 09-3) National Fuel Gas Code
NFPA 70	(2011) National Electrical Code
NFPA 90A	(2009; Errata 09-1) Standard for the Installation of Air Conditioning and Ventilating Systems

UNDERWRITERS LABORATORIES (UL)

UL 1995	(2005; R 2009) Heating and Cooling Equipment
UL 207	(2009) Refrigerant-Containing Components and Accessories, Nonelectrical
UL 484	(2007; R 2009) Standard for Room Air Conditioners
UL 586	(2009) Standard for High-Efficiency Particulate, Air Filter Units
UL 900	(2004; R 2007; R 2009) Standard for Air Filter Units

1.2 SYSTEM DESCRIPTION

Provide electrical equipment, motors, motor efficiencies, and wiring. Electrical motor driven equipment specified shall be provided complete with motors, motor starters, and controls. Electrical characteristics shall be as shown, and unless otherwise indicated, all motors of 1 horsepower and above with open, drip proof, totally enclosed, or explosion proof fan cooled enclosures, shall be the premium efficiency type in accordance with NEMA MG 1. Field wiring shall be in accordance with manufacturer's instructions. Each motor shall conform to NEMA MG 1 and NEMA MG 2 and be of sufficient size to drive the equipment at the specified capacity without exceeding the nameplate rating of the motor. Motors shall be continuous duty with the enclosure specified. Motor starters shall be provided complete with thermal overload protection and other appurtenances necessary for the motor control indicated. Motors shall be furnished with a magnetic across-the-line or reduced voltage type starter as required by the manufacturer. Motor duty requirements shall allow for maximum frequency start-stop operation and minimum encountered interval between start and stop. Motors shall be sized for the applicable loads. Motor torque shall be capable of accelerating the connected load within 20 seconds with 80 percent of the rated voltage maintained at motor terminals during one starting period. Motor bearings shall be fitted with grease supply fittings and grease relief to outside of enclosure. Manual or automatic control and protective or signal devices required for the operation specified and any control wiring required for controls and devices specified, but not shown, shall be provided.

1.3 SUBMITTALS

Contractor shall submit the following:

SD-02 Shop Drawings

Drawings

Drawings provided in adequate detail to demonstrate compliance with contract requirements, as specified.

SD-03 Product Data

Materials and Equipment

Manufacturer's standard catalog data, at least 5 weeks prior to the purchase or installation of a particular component, highlighted to show material, size, options, performance charts and curves, etc. in adequate detail to demonstrate compliance with contract requirements. Data shall include manufacturer's recommended installation instructions and procedures. If vibration isolation is specified for a unit, vibration isolator literature shall be included containing catalog cuts and certification that the isolation characteristics of the isolators provided meet the manufacturer's recommendations. Data shall be submitted for each specified component.

Spare Parts

Spare parts data for each different item of equipment specified.

Posted Instructions - Posted instructions, at least 2 weeks prior to construction completion, including equipment layout, wiring and control diagrams, piping, valves and control sequences, and typed condensed operation instructions. The condensed operation instructions shall include preventative maintenance procedures, methods of checking the system for normal and safe operation, and procedures for safely starting and stopping the system. The posted instructions shall be framed under glass or laminated plastic and be posted where indicated by the resident engineer.

Verification of Dimensions

A letter, at least 2 weeks prior to beginning construction, including the date the site was visited, confirmation of existing conditions, and any discrepancies found.

Coil Corrosion Protection

Product data on the type coating selected the coating thickness, the application process used, the estimated heat transfer loss of the coil, and verification of conformance with the salt spray test requirement.

System Performance Tests

A schedule, at least 2 weeks prior to the start of related testing, for the system performance tests. The schedules shall identify the proposed date, time, and location for each test.

Demonstrations

A schedule, at least 2 weeks prior to the date of the proposed training course, which identifies the date, time, and location for the training.

SD-06 Test Reports

Refrigerant Tests, Charging, and Start-Up

Six copies of each test containing the information described below in bound 8-1/2 by 11 inch booklets. Individual reports shall be submitted for the refrigerant system tests.

- a. The date the tests were performed.
- b. A list of equipment used, with calibration certifications.
- c. Initial test summaries.
- d. Repairs/adjustments performed.
- e. Final test results.

System Performance Tests

Six copies of the report provided in bound 8-1/2 by 11 inch booklets. The report shall document compliance with the specified performance criteria upon completion and testing of the system. The report shall indicate the number of days covered by the tests and any conclusions as to the adequacy of the system.

SD-07 Certificates

Materials and Equipment

Where the system, components, or equipment are specified to comply with requirements of AHRI, ASHRAE, ASME, or UL, proof of such compliance shall be provided. The label or listing of the specified agency shall be acceptable evidence. In lieu of the label or listing, a written certificate from an approved, nationally recognized testing organization equipped to perform such services, stating that the items have been tested and conform to the requirements and testing methods of the specified agency may be submitted. When performance requirements of this project's drawings and specifications vary from standard AHRI rating conditions, computer printouts, catalog, or other application data certified by AHRI or a nationally recognized laboratory as described above shall be included. If AHRI does not have a current certification program that encompasses such application data, the manufacturer may self certify that his application data complies with project performance requirements in accordance with the specified test standards.

Service Organization - A certified list of qualified permanent service organizations, which includes their addresses and qualifications, for support of the equipment. The service organizations shall be reasonably convenient to the equipment installation and be able to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

SD-10 Operation and Maintenance Data

Operation and Maintenance Manuals

Six complete copies of an operation manual in bound 8-1/2 by 11 inch booklets listing step-by-step procedures required for system startup, operation, abnormal shutdown, emergency shutdown, and normal shutdown at least 4 weeks prior to the first training course. The booklets shall include the manufacturer's name, model number, and parts list. The manuals shall include the manufacturer's name, model number, service manual, and a brief description of all equipment and their basic operating features. Six complete copies of maintenance manual in bound 8-1/2 by 11 inch booklets listing routine maintenance procedures, possible breakdowns and repairs, and a trouble shooting guide. The manuals shall include piping and equipment layouts and simplified wiring and control diagrams of the system as installed.

1.4 QUALITY ASSURANCE

Because of the small scale of the drawings, it is not possible to indicate all offsets, fittings, and accessories that may be required. Carefully investigate the plumbing, fire protection, electrical, structural and finish conditions that would affect the work to be performed and arrange such work accordingly, furnishing required offsets, fittings, and accessories to meet such conditions. Submit drawings consisting of:

- a. Equipment layouts which identify assembly and installation details.
- b. Plans and elevations which identify clearances required for maintenance and operation.
- c. Wiring diagrams which identify each component individually and interconnected or interlocked relationships between components.
- d. Foundation drawings, bolt-setting information, and foundation bolts prior to concrete foundation construction for equipment indicated or required to have concrete foundations.
- e. Details, if piping and equipment are to be supported other than as indicated, which include loadings and type of frames, brackets, stanchions, or other supports.
- f. Automatic temperature control diagrams and control sequences.
- g. Installation details which include the amount of factory set superheat and corresponding refrigerant pressure/temperature.

1.5 DELIVERY, STORAGE, AND HANDLING

Stored items shall be protected from the weather, humidity and temperature variations, dirt and dust, or other contaminants. Proper protection and care of all material both before and during installation shall be the Contractor's responsibility. Replace any materials found to be damaged at the Contractor's expense. During installation, piping and similar openings shall be capped to keep out dirt and other foreign matter.

1.6 EXTRA MATERIALS

Submit spare parts data for each different item of equipment specified, after approval of detail drawings and not later than 1 month prior to the date of beneficial occupancy. Include in the data a complete list of parts and supplies, with current unit prices and source of supply, a recommended spare parts list for 1 year of operation, and a list of the parts recommended by the manufacturer to be replaced on a routine basis.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

2.1.1 Standard Products

Provide Materials and equipment that are standard products of a manufacturer regularly engaged in the manufacturing of such products, which are of a similar material, design and workmanship. The standard products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2 year use shall include applications of equipment and materials under similar circumstances and of similar size. The 2 years experience shall be satisfactorily completed by a product which has been sold or is offered for sale on the commercial market through advertisements, manufacturer's catalogs, or

brochures. 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 manufacturer's factory tests, can be shown. Products shall be supported by a service organization. System components shall be environmentally suitable for the indicated locations.

2.1.2 Nameplates

Major equipment shall have the manufacturer's name, address, type or style, model or serial number, and catalog number on a plate secured to the item of equipment. Plates shall be durable and legible throughout equipment life and made of anodized aluminum. Plates shall be fixed in prominent locations with nonferrous screws or bolts.

2.1.3 Safety Devices

Exposed moving parts, parts that produce high operating temperature, parts which may be electrically energized, and parts that may be a hazard to operating personnel shall be insulated, fully enclosed, guarded, or fitted with other types of safety devices. Safety devices shall be installed so that proper operation of equipment is not impaired. Welding and cutting safety requirements shall be in accordance with AWS Z49.1.

2.2 UNITARY EQUIPMENT, SPLIT SYSTEM

2.2.1 Outdoor Unit

Unit shall be applicable Underwriters Laboratories (UL) standards including UL 1995. Unit shall be rated in accordance with ANSI/AHRI 210/240 or ANSI/AHRI 340/360.

The outdoor unit shall be equipped with multiple circuit boards that interface to the M-NET controls system and shall perform all functions necessary for operation. Each outdoor unit module shall be completely factory assembled, piped, wired and run tested at the factory. Outdoor unit shall have a sound rating no higher than 60 dB(A) individually. Units shall have a sound rating no higher than 50 dB(A) individually while in night mode operation. Outdoor unit shall be able to connect to multiple indoor units depending upon model. Both refrigerant lines from the outdoor unit to indoor units shall be insulated. The outdoor unit shall have an accumulator with refrigerant level sensors and controls. The outdoor unit shall have a high pressure safety switch, over-current protection and DC bus protection. The outdoor unit shall have the ability to operate with a maximum height difference of 164 feet (294 feet optional) and have a total refrigerant tubing length of 3280 feet. The greatest length is not to exceed 541 feet between the outdoor unit and the indoor units without the need for line size changes or traps. The outdoor unit shall be capable of operating in heating mode down to -4°F ambient temperature or cooling mode down to 23°F ambient temperature, without additional low ambient controls. The outdoor unit shall have a high efficiency oil separator plus additional logic controls to ensure adequate oil volume in the compressor is maintained.

2.2.1.1 Unit Cabinet

The casing(s) shall be fabricated of galvanized steel, bonderized and finished. Units cabinets shall be able to withstand 960 hours per ASTM B117 criteria for seacoast protected models.

2.2.1.2 Unit Fans

Each outdoor unit module shall be furnished with one direct drive, variable speed propeller type fan. The fan motor shall have inherent protection, have permanently lubricated bearings, and be completely variable speed. The fan shall be factory set for operation under 0 in. WG external static pressure, but capable of normal operation under a maximum of 0,24 in. WG external static pressure via dipswitch. The fan motor shall be mounted for quiet operation. The fan shall be provided with a raised guard to prevent contact with moving parts. The outdoor unit shall have vertical discharge airflow.

2.2.1.3 Refrigerant

R410A refrigerant shall be required for outdoor unit systems. Refrigerant-containing components shall comply with ANSI/ASHRAE 15 & 34 and be factory tested, cleaned, dehydrated, charged, and sealed. Refrigerant charging valves and connections, and pump down valves shall be provided for each circuit.

Refrigerant signs shall be provided for each refrigerant system. Refrigerant signs shall be a medium-weight aluminum type with a baked enamel finish. Signs shall be suitable for indoor or outdoor service. Signs shall have a white background with red letters not less than 0.5 inches in height. Signs shall indicate the following as a minimum:

- a. Contractor's name.
- b. Refrigerant number and amount of refrigerant.
- c. The lubricant identity and amount.
- d. Field test pressure applied.

2.2.1.3.1 Refrigerant Leak Detector

Detector shall be the continuously-operating, halogen-specific type. Detector shall be appropriate for the refrigerant in use. Detector shall be specifically designed for area monitoring and shall include a single sampling point installed per manufacturer's recommendations. Detector design and construction shall be compatible with the temperature, humidity, barometric pressure and voltage fluctuations of the operating area. Detector shall have an adjustable sensitivity such that it can detect refrigerant at or above 3 parts per million (ppm). Detector shall be supplied factory-calibrated for the appropriate refrigerant(s). Detector shall be provided with an alarm relay output which energizes when the detector detects a refrigerant level at or above the TLV-TWA (or toxicity measurement consistent therewith) for the refrigerant in use. The detector's relay shall be capable of initiating corresponding alarms and ventilation system. Detector shall be provided with a failure relay output that energizes when the monitor detects a fault in its operation.

2.2.1.3.1 Refrigerant Relief Valve/Rupture Disc Assembly

The assembly shall be a combination pressure relief valve and rupture disc designed for refrigerant usage. The assembly shall be in accordance with ASME BPVC SEC VIII D1 and ANSI/ASHRAE 15 & 34. The assembly shall be provided with a pressure gauge assembly which will provide local indication if a rupture disc is broken. Rupture disc shall be the non-fragmenting type.

2.2.1.4 Coil

The outdoor coil shall be of nonferrous construction with lanced or corrugated plate fins on copper tubing. The coil fins shall have a factory applied corrosion resistant blue-fin finish. The coil shall be protected with an integral metal guard. Refrigerant flow from the outdoor unit shall be controlled by means of an inverter driven compressor. The outdoor coil shall include 4 circuits with two position valves for each circuit, except for the last stage. Coils shall be tested in accordance with ANSI/ASHRAE 15 & 34 at the factory and be suitable for the working pressure of the installed system. Each coil shall be dehydrated and sealed after testing and prior to evaluation and charging.

2.2.1.5 Compressor

Each outdoor unit module shall be equipped with one inverter driven scroll hermetic compressor. Non inverter-driven compressors shall not be allowed. Compressor shall be capable of continuous operation down to the lowest step of unloading as specified. A crankcase heater(s) shall be factory mounted on the compressor(s). The outdoor unit compressor shall have an inverter to modulate capacity. The capacity shall be completely variable with a turndown of 18%-4% of rated capacity, depending upon unit size. The compressor shall be equipped with an internal thermal overload. The compressor shall be mounted to avoid the transmission of vibration.

2.2.1.6 Electrical

The outdoor unit electrical power shall be 208/230 or 460 volts, 3-phase, 60 hertz. The unit shall be capable of satisfactory operation within voltage limitations of 187-228 volts (208V/60Hz) or 207-253 volts (230V/60Hz) or 414-506V (460V/60Hz). The outdoor unit shall be controlled by integral microprocessors. The control circuit between the indoor units and the outdoor unit shall be 24VDC completed using a 2-conductor, non-polar twisted pair shielded cable to provide total integration of the system.

2.2.2 Indoor Unit

2.2.2.1 Wall Mounted Indoor Unit

The indoor unit shall be a wall-mounted indoor unit section and shall have a modulating linear expansion device and a flat front. The indoor unit shall support individual control using M-NET DDC controllers. The indoor unit shall be factory assembled, wired and run tested. Contained within the unit shall be all factory wiring, piping, electronic modulating linear expansion device, control circuit board and fan motor. The unit shall have a self-diagnostic function, 3-minute time delay mechanism, an auto restart function, and a test run switch. Indoor unit and refrigerant pipes shall be charged with dehydrated air before shipment from the factory.

2.2.2.1.1 Unit Cabinet

The casing shall have a white finish. For wall mounted units, Multi directional drain and refrigerant piping offering four (4) directions for refrigerant piping and two (2) directions for draining shall be standard. There shall be a separate back plate which secures the unit firmly to the wall.

2.2.2.1.2 Fans

The indoor fan shall be an assembly with one or two line-flow fan(s) direct driven by a single motor. The indoor fan shall be statically and dynamically balanced to run on a motor with permanently lubricated bearings.

A manual adjustable guide vane shall be provided with the ability to change the airflow from side to side (left to right). A motorized air sweep louver shall provide an automatic change in airflow by directing the air up and down to provide uniform air distribution.

For ceiling suspended type units, the fan shall consist of four (4) speeds, Low, Mid1, Mid2, and High.

2.2.2.1.3 Filters

Return air shall be filtered by means of an easily removable, washable filter.

2.2.2.1.4 Coil

The indoor coil shall be of nonferrous construction with smooth plate fins on copper tubing. The tubing shall have inner grooves for high efficiency heat exchange. All tube joints shall be brazed with phos-copper or silver alloy. The coils shall be pressure tested at the factory. A condensate pan and drain shall be provided under the coil. Both refrigerant lines to indoor units shall be insulated. Coils shall be tested in accordance with ANSI/ASHRAE 15 & 34 at the factory and be suitable for the working pressure of the installed system.

2.2.2.1.5 Electrical

The unit electrical power shall be 208/230 volts, 1 phase, 60 hertz. The system shall be capable of satisfactory operation within voltage limits of 187-228 volts (208V/60Hz) or 207-253 volts (230V/60Hz).

2.2.2.1.6 Controls

This unit shall use controls to perform functions necessary to operate the system. Please refer to section 2.2.3 for details on controllers and other control options. The unit shall be able to control external backup heat. The unit shall have a factory built in receiver for wireless remote control Indoor unit shall compensate for the higher temperature sensed by the return air sensor compared to the temperature at level of the occupant when in HEAT mode. Disabling of compensation shall be possible for individual units to accommodate instances when compensation is not required. Control board shall include contacts for control of external heat source. External heat may be energized as second stage with 1.8 degree F dead band from set point.

2.2.2.2.1-Way Ceiling Recessed Cassette with Grille Indoor Unit

The indoor unit shall be a one-way cassette indoor unit that recesses into the ceiling with a ceiling grille and shall have a modulating linear expansion device. The indoor shall support individual control using M-NET DDC controllers. The indoor unit shall be factory assembled, wired and run tested. Contained within the unit shall be all factory wiring,

pipng, electronic modulating linear expansion device, control circuit board and fan motor. The unit shall have a self-diagnostic function, 3-minute time delay mechanism, an auto restart function, an emergency operation function and a test run switch. Indoor unit and refrigerant pipes shall be charged with dehydrated air before shipment from the factory.

2.2.2.2.1 Unit Cabinet

The cabinet shall be space-saving ceiling recessed. The cabinet panel shall have provisions for a field installed filtered outside air intake. Branch ducting shall be allowed from cabinet. The one-way grille shall be fixed to bottom of cabinet allowing for one-way airflow.

2.2.2.2.2 Fans

The indoor fan shall be an assembly with one line-flow fan direct driven by a single motor. The indoor fan shall be statically and dynamically balanced to run on a motor with permanently lubricated bearings. The indoor fan shall consist of four (4) speeds, Low, Mid1, Mid2, and High.

2.2.2.2.3 Filters

Return air shall be filtered by means of an easily removable, washable filter.

2.2.2.2.4 Coil

The indoor coil shall be of nonferrous construction with smooth plate fins on copper tubing. The tubing shall have inner grooves for high efficiency heat exchange. All tube joints shall be brazed with phos-copper or silver alloy. The coils shall be pressure tested at the factory. A condensate pan and drain shall be provided under the coil. The unit shall be provided with an integral condensate lift mechanism able to raise drain water 23 inches above the condensate pan. Both refrigerant lines to indoor units shall be insulated. Coils shall be tested in accordance with ANSI/ASHRAE 15 & 34 at the factory and be suitable for the working pressure of the installed system.

2.2.2.2.5 Electrical

The unit electrical power shall be 208/230 volts, 1 phase, 60 hertz. The system shall be capable of satisfactory operation within voltage limits of 187-228 volts (208V/60Hz) or 207-253 volts (230V/60Hz).

2.2.2.2.6 Controls

This unit shall use controls to perform functions necessary to operate the system. Please refer to section 2.2.3 for details on controllers and other control options. Indoor unit shall compensate for the higher temperature sensed by the return air sensor compared to the temperature at level of the occupant when in HEAT mode. Disabling of compensation shall be possible for individual units to accommodate instances when compensation is not required. Control board shall include contacts for control of external heat source. External heat may be energized as second stage with 1.8 degree F dead band from set point.

2.2.2.3 Ceiling-Suspended Indoor Unit

The indoor unit shall be ceiling-suspended indoor unit section and have a modulating linear expansion device. The indoor unit shall support individual control using M-NET DDC controllers. The indoor unit shall be factory assembled, wired and run tested. Contained within the unit shall be all factory wiring, piping, electronic modulating linear expansion device, control circuit board and fan motor. The unit shall have a self-diagnostic function, 3-minute time delay mechanism, an auto restart function, and a test run switch. The unit shall have an auto-swing function for the horizontal vane. Indoor unit and refrigerant pipes shall be charged with dehydrated air before shipment from the factory.

2.2.2.3.1 Unit Cabinet

The casing shall have a white finish.

2.2.2.3.2 Fans

The indoor unit fan shall be an assembly with two, three, or four fan(s) direct driven by a single motor. The indoor fan shall be statically and dynamically balanced to run on a motor with permanently lubricated bearings. The indoor fan shall consist of four (4) speeds, Low, Mid1, Mid2, and High, and Auto fan function.

2.2.2.3.3 Filter

Return air shall be filtered by means of an easily removable, washable filter.

2.2.2.3.4 Coil

The indoor coil shall be of nonferrous construction with smooth plate fins on copper tubing. The tubing shall have inner grooves for high efficiency heat exchange. All tube joints shall be brazed with phos-copper or silver alloy. The coils shall be pressure tested at the factory. A condensate pan and drain shall be provided under the coil. Both refrigerant lines to indoor units shall be insulated. Coils shall be tested in accordance with ANSI/ASHRAE 15 & 34 at the factory and be suitable for the working pressure of the installed system.

2.2.2.3.5 Electrical

The unit electrical power shall be 208/230 volts, 1 phase, 60 hertz.

The system shall be capable of satisfactory operation within voltage limits of 187-228 volts (208V/60Hz) or 207-253 volts (230V/60Hz)

2.2.2.3.6 Controls

This unit shall use controls to perform functions necessary to operate the system. Please refer to section 2.2.3 for details on controllers and other control options. Units shall have the ability to control supplemental heat via connector CN24 and a 12 VDC output Control board shall include contacts for control of external heat source. External heat may be energized as second stage with 1.8 degree F deadband from set point.

2.2.3 Unit Controls

2.2.3.1 Electrical Characteristics & Wiring

The controller shall operate at 24VDC. Controller power and communications shall be via a common non-polar communications bus.

Control wiring shall be installed in a daisy chain configuration from indoor unit to ME remote controller to indoor unit, to the BC controller (main and subs, if applicable) and to the outdoor unit. Control wiring to remote controllers shall be run from the indoor unit terminal block to the controller associated with that unit.

Control wiring for schedule timers, system controllers, and centralized controllers shall be installed in a daisy chain configuration from outdoor unit to outdoor unit, to system controllers, to the power supply.

Control wiring for the Deluxe MA, Simple MA, and Wireless MA remote controllers shall be from the remote controller to the first associated indoor unit (TB-15) then to the remaining associated indoor units (TB-15) in a daisy chain configuration.

The AG-150, GB-50ADA, GB-24 centralized controller shall be capable of being networked with other AG-150, GB-50ADA and GB-24 centralized controllers for centralized control.

Wiring shall be 2-conductor (16 AWG), twisted, stranded, shielded wire as defined by the Design Tool AutoCAD output.

Network wiring shall be CAT-5e with RJ-45 connection.

2.2.3.2 Controls Network

The controls network shall consists of remote controllers, schedule timers, system controllers, centralized controllers, and/or integrated web based interface communicating over a high-speed communication bus. The controls network shall support operation monitoring, scheduling, error email distribution, personal browsers, tenant billing, online maintenance support, and integration with Building Management Systems (BMS) using either LonWorks® or BACnet® interfaces.

Manufacturer's recommendations shall be used for sequence of operation.

PART 3 EXECUTION

3.1 EXAMINATION

After becoming familiar with all details of the work, perform Verification of Dimensions in the field, and advise the resident engineer of any discrepancy before performing any work.

3.2 INSTALLATION

Work shall be performed in accordance with the manufacturer's published diagrams, recommendations, and equipment warranty requirements. Where equipment is specified to

conform to the requirements of ASME BPVC SEC VIII D1 and ASME BPVC SEC IX, the design, fabrication, and installation of the system shall conform to ASME BPVC SEC VIII D1 and ASME BPVC SEC IX.

3.2.1 Equipment

Refrigeration equipment and the installation thereof shall conform to ANSI/ASHRAE 15 & 34. Necessary supports shall be provided for all equipment, appurtenances, and pipe as required. Compressors shall be isolated from the building structure. If mechanical vibration isolators are not provided, vibration absorbing foundations shall be provided. Each foundation shall include isolation units consisting of machine and floor or foundation fastenings, together with intermediate isolation material. Other floor-mounted equipment shall be set on not less than a 6 inch concrete pad doweled in place. Concrete foundations for floor mounted pumps shall have a mass equivalent to three times the weight of the components, base plate, and motor to be supported. In lieu of concrete pad foundation, concrete pedestal block with isolators placed between the pedestal block and the floor may be provided. Concrete pedestal block shall be of mass not less than three times the combined pump, motor, and base weights. Isolators shall be selected and sized based on load-bearing requirements and the lowest frequency of vibration to be isolated.

3.3 CLEANING AND ADJUSTING

Equipment shall be wiped clean, with all traces of oil, dust, dirt, or paint spots removed. Temporary filters shall be provided for all fans that are operated during construction, and new filters shall be installed after all construction dirt has been removed from the building. System shall be maintained in this clean condition until final acceptance. Bearings shall be properly lubricated with oil or grease as recommended by the manufacturer. Belts shall be tightened to proper tension. Control valves and other miscellaneous equipment requiring adjustment shall be adjusted to setting indicated or directed. Fans shall be adjusted to the speed indicated by the manufacturer to meet specified conditions.

3.4 DEMONSTRATIONS

Conduct a training course for the operating staff as designated by the resident engineer. The training period shall be determined by resident engineer according to manufacturer's recommendations and start after the system is functionally completed but prior to final acceptance tests. The field posted instructions shall cover all of the items contained in the approved operation and maintenance manuals as well as demonstrations of routine maintenance operations.

3.5 REFRIGERANT TESTS, CHARGING, AND START-UP

Split-system refrigerant piping systems shall be tested and charged.

3.5.1 Refrigerant Leakage

If a refrigerant leak is discovered after the system has been charged, the leaking portion of the system shall immediately be isolated from the remainder of the system and the refrigerant pumped into the system receiver or other suitable container. Under no circumstances shall the refrigerant be discharged into the atmosphere.

3.5.2 Contractor's Responsibility

Take steps, at all times during the installation and testing of the refrigeration system, to prevent the release of refrigerants into the atmosphere. The steps shall include, but not be limited to, procedures which will minimize the release of refrigerants to the atmosphere and the use of refrigerant recovery devices to remove refrigerant from the system and store the refrigerant for reuse or reclaim. At no time shall more than 3 ounces of refrigerant be released to the atmosphere in any one occurrence. Any system leaks within the first year shall be repaired in accordance with the requirements herein at no cost to the customer including material, labor, and refrigerant if the leak is the result of defective equipment, material, or installation.

3.6 SYSTEM PERFORMANCE TESTS

Before each refrigeration system is accepted, conduct tests to demonstrate the general operating characteristics of all equipment by a registered professional engineer or an approved manufacturer's start-up representative experienced in system start-up and testing, at such times as directed. Tests shall cover a period of not less than 48 hours for each system and shall demonstrate that the entire system is functioning in accordance with the drawings and specifications. Make corrections and adjustments, as necessary, tests shall be re-conducted to demonstrate that the entire system is functioning as specified. Prior to acceptance, service valve seal caps and blanks over gauge points shall be installed and tightened. Any refrigerant lost during the system startup shall be replaced. If tests do not demonstrate satisfactory system performance, deficiencies shall be corrected and the system shall be retested. Tests shall be conducted in the presence of the resident engineer. Water and electricity required for the tests will be furnished by the customer. Provide all material, equipment, instruments, and personnel required for the test.

END OF SECTION

SECTION 26 0519

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

PART 2 PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Aluminum Conductors: Comply with NEMA WC 70/ICEA S-95-658.
- B. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 Type THHN-2-THWN-2.

2.2 CONNECTORS AND SPLICES

- A. Description: Factory-fabricated connectors and splices of size, capacity rating, material, type, and class for application and service indicated.

2.3 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

PART 3 EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger, except VFC cable, which shall be extra flexible stranded.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Exposed Branch Circuits, Including in Crawlspace: Type THHN-2-THWN-2, single conductors in raceway.

- B. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-2-THWN-2, single conductors in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."

3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than un-spliced conductors.
 - 1. Use oxide inhibitor in each splice, termination, and tap for aluminum conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches (150 mm) of slack.

3.5 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."
- B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

3.6 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.7 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of wall assemblies to restore original fire-resistance rating of assembly.

3.8 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 - 1. After installing conductors and cables and before electrical circuitry has been energized, test for compliance with requirements.
 - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
- B. Test and Inspection Reports: Prepare a written report to record the following:
 - 1. Procedures used.
 - 2. Results that comply with requirements.
 - 3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- C. Cables will be considered defective if they do not pass tests and inspections.

END OF SECTION

SECTION 26 0526
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART1 GENERAL

1.01 SUMMARY

- A. Section Includes: Grounding systems and equipment.

1.02 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.03 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.04 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 PRODUCTS

2.01 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
 - 1. Solid Conductors: ASTM B 3.
 - 2. Stranded Conductors: ASTM B 8.
 - 3. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.
 - 4. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
 - 5. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
 - 6. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

2.02 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, pressure type with at least two bolts.

1. Pipe Connectors: Clamp type, sized for pipe.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

PART 3 EXECUTION

3.01 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
- B. Conductor Terminations and Connections:
 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

3.02 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
 1. Feeders and branch circuits.
 2. Lighting circuits.
 3. Receptacle circuits.
 4. Single-phase motor and appliance branch circuits.
 5. Three-phase motor and appliance branch circuits.
 6. Flexible raceway runs.
- B. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.

3.03 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.

END OF SECTION

SECTION 26 0529

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Hangers and supports for electrical equipment and systems.

1.02 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.03 ACTION SUBMITTALS

- A. Product Data: For steel slotted support systems.
- B. Shop Drawings: Show fabrication and installation details and include calculations for the following:
 - 1. Trapeze hangers. Include Product Data for components.
 - 2. Steel slotted channel systems. Include Product Data for components.
 - 3. Equipment supports.

1.04 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.05 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Comply with NFPA 70.

PART 2 PRODUCTS

2.01 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Allied Tube & Conduit.
 - b. Cooper B-Line, Inc.; a division of Cooper Industries.
 - c. ERICO International Corporation.
 - d. GS Metals Corp.
 - e. Thomas & Betts Corporation.
 - f. Unistrut; Tyco International, Ltd.
 - g. Wesanco, Inc.
 3. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
 4. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
 5. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
 6. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 - a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Hilti Inc.
 - 2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
 - 3) MKT Fastening, LLC.
 - 4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.
- c. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- d. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
 - 2) Empire Tool and Manufacturing Co., Inc.
 - 3) Hilti Inc.
 - 4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
 - 5) MKT Fastening, LLC.
- 2. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
- 3. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
- 4. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
- 5. Toggle Bolts: All-steel springhead type.
- 6. Hanger Rods: Threaded steel.

2.02 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.
- B. Materials: Comply with requirements in Section 055000 "Metal Fabrications" for steel shapes and plates.

PART 3 EXECUTION

3.01 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT as required by NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.
- C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
 - 1. Secure raceways and cables to these supports with two-bolt conduit clamps.
- D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

3.02 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT may be supported by openings through structure members, as permitted in NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 - 1. To Wood: Fasten with lag screws or through bolts.
 - 2. To New Concrete: Bolt to concrete inserts.
 - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - 4. To Existing Concrete: Expansion anchor fasteners.
 - 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
 - 6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
 - 7. To Light Steel: Sheet metal screws.
 - 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.

- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.03 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Comply with installation requirements in Section 055000 "Metal Fabrications" for site-fabricated metal supports.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- C. Field Welding: Comply with AWS D1.1/D1.1M.

3.04 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).
- B. Touchup: Comply with requirements for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION

SECTION 26 0533
RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Metal conduits, tubing, and fittings.
 - 2. Metal wireways and auxiliary gutters.
 - 3. Boxes, enclosures, and cabinets.

1.02 ACTION SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.

1.03 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:
 - 1. Structural members in paths of conduit groups with common supports.
 - 2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.
- B. Seismic Qualification Certificates: For enclosures, cabinets, and conduit racks and their mounting provisions, include those for internal components, from manufacturer.

PART 2 PRODUCTS

2.01 METAL CONDUITS, TUBING, AND FITTINGS

- A. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. GRC: Comply with ANSI C80.1 and UL 6.
- C. EMT: Comply with ANSI C80.3 and UL 797.
- D. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.
- E. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
 - 1. Fittings for EMT:
 - a. Material: Steel.
 - b. Type: Setscrew.

2. Expansion Fittings: Steel to match conduit type, complying with UL 651, rated for environmental conditions were installed, and including flexible external bonding jumper.
- F. Joint Compound for GRC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.02 METAL WIREWAYS AND AUXILIARY GUTTERS

- A. Description: Sheet metal, complying with UL 870 and NEMA 250, Type 1 unless otherwise indicated, and sized according to NFPA 70.
 1. Metal wireways installed outdoors shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

2.03 BOXES, ENCLOSURES, AND CABINETS

- A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- C. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- D. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- E. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
- F. Device Box Dimensions: 4 inches square by 2-1/8 inches deep (100 mm square by 60 mm deep or 4 inches by 2-1/8 inches by 2-1/8 inches deep (100 mm by 60 mm by 60 mm deep).
- G. Gangable boxes are allowed.
- H. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 1 with continuous-hinge cover with flush latch unless otherwise indicated.
 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
 2. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.
- I. Cabinets:
 1. NEMA 250, Type 1 galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
 2. Hinged door in front cover with flush latch and concealed hinge.
 3. Key latch to match panelboards.

4. Metal barriers to separate wiring of different systems and voltage.
5. Accessory feet where required for freestanding equipment.
6. Nonmetallic cabinets shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 3 EXECUTION

3.01 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
 1. Exposed Conduit: GRC.
 2. Concealed Conduit, Aboveground: EMT.
 3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
- B. Indoors: Apply raceway products as specified below unless otherwise indicated.
 1. Exposed, Not Subject to Physical Damage: EMT.
 2. Exposed, Not Subject to Severe Physical Damage: EMT.
 3. Exposed and Subject to Severe Physical Damage: GRC.
 4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
 5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
 6. Damp or Wet Locations: GRC.
 7. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4.
- C. Minimum Raceway Size: 1/2-inch (16-mm) trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
 1. EMT: Use setscrew, steel fittings. Comply with NEMA FB 2.10.
 2. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.
- E. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.
- F. Install surface raceways only where indicated on Drawings.
- G. Do not install nonmetallic conduit where ambient temperature exceeds 120 deg F (49 deg C).

3.02 INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.

- B. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
- D. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches (300 mm) of changes in direction.
- E. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- F. Support conduit within 12 inches (300 mm) of enclosures to which attached.
- G. Stub-ups to Above Recessed Ceilings:
 - 1. Use EMT for raceways.
 - 2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- H. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- I. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch (35-mm) trade size and insulated throat metal bushings on 1-1/2-inch (41-mm) trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- J. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- K. Surface Raceways:
 - 1. Install surface raceway with a minimum 2-inch (50-mm) radius control at bend points.
 - 2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches (1200 mm) and with no less than two supports per straight raceway section. Support surface raceway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.
- L. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces.
- M. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments.

- N. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches (1830 mm) of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
 - 1. Use LFMC in damp or wet locations subject to severe physical damage.
 - 2. Use LFMC in damp or wet locations not subject to severe physical damage.
- O. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.
- P. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- Q. Locate boxes so that cover or plate will not span different building finishes.
- R. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.
- S. Set metal floor boxes level and flush with finished floor surface.

3.03 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.04 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies.

3.05 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 2. Repair damage to paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION

SECTION 26 2200
LOW-VOLTAGE TRANSFORMERS

PART 1 GENERAL

1.01 SUMMARY

- A. This Section includes the following types of dry-type transformers rated 600 V and less, with capacities up to 1000 kVA:
 - 1. Distribution transformers.

1.02 ACTION SUBMITTALS

- A. Product Data: For each product indicated.
- B. Shop Drawings: Indicate dimensions and weights.
 - 1. Wiring Diagrams: Power, signal, and control wiring.

1.03 INFORMATIONAL SUBMITTALS

- A. Manufacturer Seismic Qualification Certification: Submit certification that transformers, accessories, and components will withstand seismic forces defined in Section 260548 "Vibration and Seismic Controls for Electrical Systems."
- B. Field quality-control test reports.

1.04 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

1.05 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with IEEE C57.12.91, "Test Code for Dry-Type Distribution and Power Transformers."

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. ACME Electric Corporation; Power Distribution Products Division.
 - 2. Challenger Electrical Equipment Corp.; a division of Eaton Corp.
 - 3. Controlled Power Company.

4. Eaton Electrical Inc.; Cutler-Hammer Products.
5. Federal Pacific Transformer Company; Division of Electro-Mechanical Corp.
6. General Electric Company.
7. Hammond Co.; Matra Electric, Inc.
8. Magnetek Power Electronics Group.
9. Micron Industries Corp.
10. Myers Power Products, Inc.
11. Siemens Energy & Automation, Inc.
12. Sola/Hevi-Duty.
13. Square D; Schneider Electric.
14. Custom (if necessary).

2.02 GENERAL TRANSFORMER REQUIREMENTS

- A. Description: Factory-assembled and -tested, air-cooled units for 60-Hz service.
- B. Cores: Grain-oriented, non-aging silicon steel.
- C. Coils: Continuous windings without splices except for taps.
 1. Internal Coil Connections: Brazed or pressure type.
 2. Coil Material: Aluminum.

2.03 DISTRIBUTION TRANSFORMERS

- A. Comply with NEMA ST 20, and list and label as complying with UL 1561.
- B. Provide transformers that are constructed to withstand seismic forces specified in Section 260548 "Vibration and Seismic Controls for Electrical Systems."
- C. Cores: One leg per phase.
- D. Enclosure: Ventilated, NEMA 250, Type 2.
 1. Core and coil shall be encapsulated within resin compound, sealing out moisture and air.
- E. Enclosure: Ventilated, NEMA 250.
 1. Core and coil shall be encapsulated within resin compound, sealing out moisture and air.
- F. Transformer Enclosure Finish: Comply with NEMA 250.
 1. Finish Color: Gray.
- G. Taps for Transformers 25 kVA and Larger: Two 2.5 percent taps above and two 2.5 percent taps below normal full capacity.
- H. Insulation Class: 220 deg C, UL-component-recognized insulation system with a maximum of 150 deg C rise above 40 deg C ambient temperature.

- I. Energy Efficiency for Transformers Rated 15 kVA and Larger:
 - 1. Complying with NEMA TP 1, Class 1 efficiency levels.
 - 2. Tested according to NEMA TP 2.
- J. Electrostatic Shielding: Each winding shall have an independent, single, full-width copper electrostatic shield arranged to minimize interwinding capacitance.

2.04 IDENTIFICATION DEVICES

- A. Nameplates: Engraved, laminated-plastic or metal nameplate as indicated.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Construct concrete bases and anchor floor-mounting transformers according to manufacturer's written instructions, seismic codes applicable to Project, and requirements in Section 260529 "Hangers and Supports for Electrical Systems."

3.02 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

3.03 ADJUSTING

- A. Adjust transformer taps to provide optimum voltage conditions at secondary terminals. Optimum is defined as not exceeding nameplate voltage plus 10 percent and not being lower than nameplate voltage minus 3 percent at maximum load conditions. Submit recording and tap settings as test results.
- B. Output Settings Report: Prepare a written report recording output voltage and tap settings.

END OF SECTION

SECTION 26 2416
PANELBOARDS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes distribution panelboards and lighting and appliance branch-circuit panelboards.

1.02 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Panelboards shall withstand the effects of earthquake motions determined according to SEI/ASCE 7.
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

1.03 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details for types other than NEMA 250, Type 1.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 5. Include evidence of NRTL listing for series rating of installed devices.
 - 6. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
 - 7. Include wiring diagrams for power, signal, and control wiring.
 - 8. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards.

1.04 INFORMATIONAL SUBMITTALS

- A. Seismic Qualification Certificates: Submit certification that panelboards, overcurrent protective devices, accessories, and components will withstand seismic forces defined in Section 260548 "Vibration and Seismic Controls for Electrical Systems."
- B. Field quality-control reports.
- C. Panelboard schedules for installation in panelboards.

1.05 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

1.06 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NEMA PB 1.
- C. Comply with NFPA 70.

1.07 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace transient voltage suppression devices that fail in materials or workmanship within specified warranty period.
 - 1. Verify available warranties and warranty periods with manufacturers listed in Part 2 articles.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Section 260548 "Vibration and Seismic Controls for Electrical Systems."
- B. Enclosures: Surface-mounted cabinets as indicated.
 - 1. Rated for environmental conditions at installed location.
 - a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
 - 2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
 - 3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
 - 4. Directory Card: Inside panelboard door, mounted in transparent card holder.
- C. Incoming Mains Location: Top or bottom as indicated.
- D. Phase, Neutral, and Ground Buses: Hard-drawn copper, 98 percent conductivity.
- E. Include instructions in first paragraph below if special sizing or oversizing of lugs is required, if allowing optional use of aluminum for circuits sized for copper conductors, or when upsizing conductors for voltage drop.
- F. Conductor Connectors: Suitable for use with conductor material and sizes.
 - 1. Material: Hard-drawn copper, 98 percent conductivity.
 - 2. Main and Neutral Lugs: Compression type.
 - 3. Ground Lugs and Bus Configured Terminators: Compression type.
 - 4. Feed-Through Lugs: Compression type, suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.

- G. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.
- H. Panelboard Short-Circuit Current Rating: Rated for series-connected system with integral or remote upstream overcurrent protective devices and labeled by an NRTL. Include size and type of allowable upstream and branch devices, and listed and labeled for series-connected short-circuit rating by an NRTL.
- I. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.02 DISTRIBUTION PANELBOARDS

- A. Manufacturers: Subject to compliance with requirements, provide products to match existing.
- B. Panelboards: NEMA PB 1, power and feeder distribution type.
- C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.
- D. Mains: Circuit breaker.
- E. Branch Overcurrent Protective Devices: For Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.
- F. Branch Overcurrent Protective Devices: For Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers; where individual positive-locking device requires mechanical release for removal.
- G. Branch Overcurrent Protective Devices: Fused switches.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Receive, inspect, handle, store and install panelboards and accessories according to NECA 407.
- B. Comply with mounting and anchoring requirements specified in Section 260548 "Vibration and Seismic Controls for Electrical Systems."
- C. Mount top of trim 90 inches (2286 mm) above finished floor unless otherwise indicated.
- D. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
- E. Install overcurrent protective devices and controllers not already factory installed.
 - 1. Set field-adjustable, circuit-breaker trip ranges.
- F. Install filler plates in unused spaces.
- G. Arrange conductors in gutters into groups and bundle and wrap with wire ties.
- H. Comply with NECA 1.

3.02 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Section 260553 "Identification for Electrical Systems."
- B. Create a directory to indicate installed circuit loads and incorporating Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification as indicated.
- D. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.03 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Acceptance Testing Preparation:
 - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
 - 2. Test continuity of each circuit.
- C. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
- D. Panelboards will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection a report, including a certified report that identifies panelboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken and observations after remedial action.

END OF SECTION

SECTION 26 5600
EXTERIOR LIGHTING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Exterior luminaires with lamps and ballasts.
 - 2. Poles and accessories.

1.02 STRUCTURAL ANALYSIS CRITERIA FOR POLE SELECTION

- A. Dead Load: Weight of luminaire and its horizontal and vertical supports, lowering devices, and supporting structure, applied as stated in AASHTO LTS-4-M.
- B. Live Load: Single load of 500 lbf (2224 N), distributed as stated in AASHTO LTS-4-M.

1.03 ACTION SUBMITTALS

- A. Product Data: For each luminaire, pole, and support component, arranged in order of lighting unit designation. Include data on features, accessories, and finishes.
- B. Shop Drawings: Anchor-bolt templates keyed to specific poles and certified by manufacturer.

1.04 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with IEEE C2, "National Electrical Safety Code."
- C. Comply with NFPA 70.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide product indicated on Drawings.

2.02 GENERAL REQUIREMENTS FOR LUMINAIRES

- A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.
 - 1. LER Tests Incandescent Fixtures: Where LER is specified, test according to NEMA LE 5A.
 - 2. LER Tests HID Fixtures: Where LER is specified, test according to NEMA LE 5B.
- B. Lateral Light Distribution Patterns: Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.
- C. Metal Parts: Free of burrs and sharp corners and edges.

- D. Sheet Metal Components: Corrosion-resistant aluminum unless otherwise indicated; forms and supports to prevent warping and sagging.
- E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.
- F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.
- G. Exposed Hardware Material: Stainless steel.
- H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
- I. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area or field.
- J. Reflecting surfaces shall have minimum reflectance as follows unless otherwise indicated:
 - 1. White Surfaces: 85 percent.
 - 2. Specular Surfaces: 83 percent.
 - 3. Diffusing Specular Surfaces: 75 percent.
- K. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.
- L. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.
- M. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - 1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast cleaning," or SSPC-SP 8, "Pickling."
 - 2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.
 - a. Color: As selected from manufacturer's standard catalog of colors.
 - b. Color: Match Architect's sample of manufacturer's standard color.
 - c. Color: As selected by Architect from manufacturer's full range.
- N. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
 2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20; and seal aluminum surfaces with clear, hard-coat wax.
 3. Class I, Clear Anodic Finish: AA-M32C22A41 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
 4. Class I, Color Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.
 - a. Color: As indicated.
- O. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps and ballasts. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.
1. Label shall include the following lamp and ballast characteristics:
 - a. "USES ONLY" and include specific lamp type.
 - b. Lamp tube configuration (twin, quad, triple), base type, and nominal wattage for compact fluorescent luminaires.
 - c. Lamp type, wattage, bulb type (ED17, BD56, etc.) and coating (clear or coated) for HID luminaires.
 - d. Start type (preheat, rapid start, instant start) compact fluorescent luminaires.
 - e. ANSI ballast type (M98, M57, etc.) for HID luminaires.
 - f. CCT and CRI for all luminaires.

2.03 BALLASTS FOR HID LAMPS

- A. Comply with ANSI C82.4 and UL 1029 and capable of open-circuit operation without reduction of average lamp life. Include the following features unless otherwise indicated:
 1. Ballast Circuit: Constant-wattage autotransformer or regulating high-power-factor type.
 2. Minimum Starting Temperature: Minus 22 deg F (Minus 30 deg C).
 3. Normal Ambient Operating Temperature: 104 deg F (40 deg C).
 4. Ballast Fuses: One in each ungrounded power supply conductor. Voltage and current ratings as recommended by ballast manufacturer.
- B. High-Pressure Sodium Ballasts: Electromagnetic type with solid-state igniter/starter and capable of open-circuit operation without reduction of average lamp life. Igniter/starter shall have an average life in pulsing mode of 10,000 hours at an igniter/starter-case temperature of 90 deg C.

2.04 HID LAMPS

- A. High-Pressure Sodium Lamps: ANSI C78.42, CRI 21 (minimum), CCT color temperature 1900K, and average rated life of 24,000 hours, minimum.
 - 1. Dual-Arc Tube Lamp: Arranged so only one of two arc tubes is lighted at one time and, when power is restored after an outage, the cooler arc tube, with lower internal pressure, lights instantly, providing an immediate 8 to 15 percent of normal light output.
- B. Low-Pressure Sodium Lamps: ANSI C78.43.
- C. Metal-Halide Lamps: ANSI C78.43, with minimum CRI 65, and CCT color temperature 4000K.
- D. Pulse-Start, Metal-Halide Lamps: Minimum CRI 65, and CCT color temperature 4000K.

2.05 GENERAL REQUIREMENTS FOR POLES AND SUPPORT COMPONENTS

- A. Structural Characteristics: Comply with AASHTO LTS-4-M.
 - 1. Wind-Load Strength of Poles: Adequate at indicated heights above grade without failure, permanent deflection, or whipping in steady winds of speed indicated in "Structural Analysis Criteria for Pole Selection" Article.
 - 2. Strength Analysis: For each pole, multiply the actual equivalent projected area of luminaires and brackets by a factor of 1.1 to obtain the equivalent projected area to be used in pole selection strength analysis.
- B. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts unless otherwise indicated.
- C. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.
 - 1. Materials: Shall not cause galvanic action at contact points.

2.06 ALUMINUM POLES

- A. Poles: Seamless, extruded structural tube complying with ASTM B 429/B 429M, Alloy 6063-T6 with access handhole in pole wall.
- B. Poles: ASTM B 209 (ASTM B 209M), 5052-H34 marine sheet alloy with access handhole in pole wall.
 - 1. Shape: Round, straight.
 - 2. Mounting Provisions: Butt flange for bolted mounting on existing foundation.
- C. Grounding and Bonding Lugs: Welded 1/2-inch (13-mm) threaded lug, complying with requirements in Section 260526 "Grounding and Bonding for Electrical Systems," listed for attaching grounding and bonding conductors of type and size listed in that Section, and accessible through handhole.
- D. Brackets for Luminaires: Detachable, with pole and adapter fittings of cast aluminum. Adapter fitting welded to pole and bracket, then bolted together with stainless-steel bolts.

1. Tapered oval cross section, with straight tubular end section to accommodate luminaire.
 2. Finish: Same as pole.
- E. Prime-Coat Finish: Manufacturer's standard prime-coat finish ready for field painting.
- F. Aluminum Finish: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
 2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20; and seal aluminum surfaces with clear, hard-coat wax.
 3. Class I, Clear Anodic Finish: AA-M32C22A41 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
 4. Class I, Color Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.
 - a. Color: As indicated.

PART 3 EXECUTION

3.01 LUMINAIRE INSTALLATION

- A. Install lamps in each luminaire.
- B. Fasten luminaire to indicate structural supports.
 1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.

3.02 POLE INSTALLATION

- A. Alignment: Align pole foundations and poles for optimum directional alignment of luminaires and their mounting provisions on the pole.
- B. Foundation-Mounted Poles: Mount pole with leveling nuts, and tighten top nuts to torque level recommended by pole manufacturer.
 1. Use existing anchor bolts and nuts selected to resist seismic forces defined for the application and approved by manufacturer.
 2. Grout void between pole base and foundation. Use nonshrink or expanding concrete grout firmly packed to fill space.
 3. Install base covers unless otherwise indicated.
 4. Arrange to drain condensation from interior of pole.

3.03 CORROSION PREVENTION

- A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.
- B. Steel Conduits: Comply with Section 260533 "Raceways and Boxes for Electrical Systems." In concrete foundations, wrap conduit with 0.010-inch- (0.254-mm-) thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.04 GROUNDING

- A. Ground metal poles and support structures according to Section 260526 "Grounding and Bonding for Electrical Systems."
 - 1. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.

END OF SECTION

SECTION 28 3111

DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

PART1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Fire-alarm control unit.
 - 2. Manual fire-alarm boxes.
 - 3. System smoke detectors.
 - 4. Non-system smoke detectors.
 - 5. Heat detectors.
 - 6. Notification appliances.
 - 7. Magnetic door holders.
 - 8. Remote annunciator.
 - 9. Addressable interface device.
 - 10. Digital alarm communicator transmitter.

1.02 SYSTEM DESCRIPTION

- A. Noncoded, addressable system, with multiplexed signal transmission, dedicated to fire-alarm service only.

1.03 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Fire-alarm control unit and raceways shall withstand the effects of earthquake motions determined according to SEI/ASCE.
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

1.04 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For fire-alarm system. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72.
 - 2. Include voltage drop calculations for notification appliance circuits.
 - 3. Include battery-size calculations.
 - 4. Include performance parameters and installation details for each detector, verifying that each detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.

5. Include plans, sections, and elevations of heating, ventilating, and air-conditioning ducts, drawn to scale and coordinating installation of duct smoke detectors and access to them. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators. Locate detectors according to manufacturer's written recommendations.
 6. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits.
- C. General Submittal Requirements:
1. Submittals shall be approved by authorities having jurisdiction prior to submitting them to Architect.
 2. Shop Drawings shall be prepared by persons with the following qualifications:
 - a. Trained and certified by manufacturer in fire-alarm system design.
 - b. NICET-certified fire-alarm technician, Level III minimum.
- D. Delegated-Design Submittal: For smoke and heat detectors indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
1. Drawings showing the location of each smoke and heat detector, ratings of each, and installation details as needed to comply with listing conditions of the detector.
 2. Design Calculations: Calculate requirements for selecting the spacing and sensitivity of detection, complying with NFPA 72.

1.05 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Seismic Qualification Certificates: For fire-alarm control unit, accessories, and components, from manufacturer.
- C. Field quality-control reports.

1.06 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals. Deliver copies to authorities having jurisdiction and include the following:
 1. Comply with the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
 2. Provide "Record of Completion Documents" according to NFPA 72 article "Permanent Records" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter.
 3. Record copy of site-specific software.
 4. Provide "Maintenance, Inspection and Testing Records" according to NFPA 72 article of the same name and include the following:

Frequency of testing of installed components.

 - a. Frequency of inspection of installed components.
 - b. Requirements and recommendations related to results of maintenance.
 - c. Manufacturer's user training manuals.

5. Manufacturer's required maintenance related to system warranty requirements.
 6. Abbreviated operating instructions for mounting at fire-alarm control unit.
- B. Software and Firmware Operational Documentation:
1. Software operating and upgrade manuals.
 2. Program Software Backup: On magnetic media or compact disk, complete with data files.
 3. Device address list.
 4. Printout of software application and graphic screens.

1.07 QUALITY ASSURANCE

- A. Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of units required for this Project.
- B. Installer Qualifications: Installation shall be by personnel certified by NICET as fire-alarm Level III technician.
- C. Source Limitations for Fire-Alarm System and Components: Obtain fire-alarm system from single source from single manufacturer.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.08 SOFTWARE SERVICE AGREEMENT

- A. Comply with UL 864.
- B. Technical Support: Beginning with Substantial Completion, provide software support for two years.
- C. Upgrade Service: Update software to latest version at Project completion. Install and program software upgrades that become available within two years from date of Substantial Completion. Upgrading software shall include operating system. Upgrade shall include new or revised licenses for use of software.
 1. Provide 30 days' notice to Owner to allow scheduling and access to system and to allow Owner to upgrade computer equipment if necessary.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Fire Control Instruments, Inc.; a Honeywell company.
 2. GAMEWELL; a Honeywell company.
 3. NOTIFIER; a Honeywell company.
 4. Siemens Building Technologies, Inc.; Fire Safety Division.
 5. SimplexGrinnell LP; a Tyco International company.

2.02 SYSTEMS OPERATIONAL DESCRIPTION

- A. Fire-alarm signal initiation shall be by one or more of the following devices and systems:

1. Manual stations.
 2. Heat detectors.
 3. Smoke detectors.
 4. Duct smoke detectors.
 5. Automatic sprinkler system water flow.
 6. Heat detectors in elevator shafts.
 7. Fire-extinguishing system operation.
 8. Fire standpipe system.
- B. Fire-alarm signal shall initiate the following actions:
1. Continuously operate alarm-notification appliances.
 2. Identify alarm at the fire-alarm control unit and remote annunciators.
 3. Transmit an alarm signal to the remote alarm receiving station.
 4. Unlock electric door locks in designated egress paths.
 5. Release fire and smoke doors held open by magnetic door holders.
 6. Switch heating, ventilating, and air-conditioning equipment controls to fire-alarm mode.
 7. Recall elevators to primary or alternate recall floors.
 8. Activate emergency lighting control.
 9. Activate emergency shutoffs for gas and fuel supplies.
 10. Record events in the system memory.
- C. Supervisory signal initiation shall be by one or more of the following devices and actions:
1. Valve supervisory switch.
 2. Low-air-pressure switch of a dry-pipe sprinkler system.
 3. Elevator shunt-trip supervision.
- D. System trouble signal initiation shall be by one or more of the following devices and actions:
1. Open circuits, shorts, and grounds in designated circuits.
 2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
 3. Loss of primary power at fire-alarm control unit.
 4. Ground or a single break in fire-alarm control unit internal circuits.
 5. Abnormal ac voltage at fire-alarm control unit.
 6. Break in standby battery circuitry.
 7. Failure of battery charging.
 8. Abnormal position of any switch at fire-alarm control unit or annunciator.
 9. Fire-pump power failure, including a dead-phase or phase-reversal condition.
 10. Low-air-pressure switch operation on a dry-pipe or preaction sprinkler system.
- E. System Trouble and Supervisory Signal Actions: Initiate notification appliance and annunciate at fire-alarm control unit and remote annunciators.

2.03 FIRE-ALARM CONTROL UNIT

- A. General Requirements for Fire-Alarm Control Unit:
1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864 and listed and labeled by an NRTL.
 - a. System software and programs shall be held in flash electrically erasable programmable read-only memory (EEPROM), retaining the information through failure of primary and secondary power supplies.

- b. Include a real-time clock for time annotation of events on the event recorder and printer.
 2. Addressable control circuits for operation of mechanical equipment.
- B. Alphanumeric Display and System Controls: Arranged for interface between human operator at fire-alarm control unit and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.
 1. Annunciator and Display: Liquid-crystal type, 1 line(s) of 40 characters, minimum.
 2. Keypad: Arranged to permit entry and execution of programming, display, and control commands and to indicate control commands to be entered into the system for control of smoke-detector sensitivity and other parameters.
- C. Circuits:
 1. Initiating Device, Notification Appliance, and Signaling Line Circuits: NFPA 72, Class A.
 - a. Initiating Device Circuits: Style D.
 - b. Notification Appliance Circuits: Style Z.
 - c. Signaling Line Circuits: Style 6.
 - d. Install no more than 50 addressable devices on each signaling line circuit.
- D. Elevator Recall:
 1. Smoke detectors at the following locations shall initiate automatic elevator recall. Alarm-initiating devices, except those listed, shall not start elevator recall.
 - a. Elevator lobby detectors except the lobby detector on the designated floor.
 - b. Smoke detector in elevator machine room.
 - c. Smoke detectors in elevator hoistway.
 2. Elevator lobby detectors located on the designated recall floors shall be programmed to move the cars to the alternate recall floor.
 3. Water-flow alarm connected to sprinkler in an elevator shaft and elevator machine room shall shut down elevators associated with the location without time delay.
 - a. Water-flow switch associated with the sprinkler in the elevator pit may have a delay to allow elevators to move to the designated floor.
- E. Door Controls: Door hold-open devices that are controlled by smoke detectors at doors in smoke barrier walls shall be connected to fire-alarm system.
- F. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to a remote alarm station.
- G. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory signals supervisory and digital alarm communicator transmitters and digital alarm radio transmitters shall be powered by 24-V dc source.
 1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.
- H. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.
 1. Batteries: Sealed lead calcium.

- I. Instructions: Computer printout or typewritten instruction card mounted behind a plastic or glass cover in a stainless-steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe the functional operation of the system under normal, alarm, and trouble conditions.

2.04 MANUAL FIRE-ALARM BOXES

- A. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes shall be finished in red with molded, raised-letter operating instructions in contrasting color; shall show visible indication of operation; and shall be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.
 1. Single-action mechanism, breaking-glass or plastic-rod type. With integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control unit.
 2. Station Reset: Key- or wrench-operated switch.
 3. Indoor Protective Shield: Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm. Lifting the cover actuates an integral battery-powered audible horn intended to discourage false-alarm operation.
 4. Weatherproof Protective Shield: Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm.

2.05 SYSTEM SMOKE DETECTORS

- A. General Requirements for System Smoke Detectors:
 1. Comply with UL 268; operating at 24-V dc, nominal.
 2. Detectors shall be four -wire type.
 3. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
 4. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
 5. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
 6. Integral Visual-Indicating Light: LED type indicating detector has operated and power-on status.
- B. Photoelectric Smoke Detectors:
 1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
 2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
 - a. Primary status.
 - b. Device type.
 - c. Present average value.
 - d. Present sensitivity selected.
 - e. Sensor range (normal, dirty, etc.).
- C. Duct Smoke Detectors: Photoelectric type complying with UL 268A.
 1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
 2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
 - a. Primary status.

- b. Device type.
- c. Present average value.
- d. Present sensitivity selected.
- e. Sensor range (normal, dirty, etc.).
- 3. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with the supplied detector.
- 4. Each sensor shall have multiple levels of detection sensitivity.
- 5. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions were applied.
- 6. Relay Fan Shutdown: Rated to interrupt fan motor-control circuit.

2.06 NONSYSTEM SMOKE DETECTORS

- A. Single-Station Smoke Detectors:
 - 1. Comply with UL 217; suitable for NFPA 101, residential occupancies; operating at 120-V ac with 9-V dc battery as the secondary power source. Provide with "low" or "missing" battery chirping-sound device.
 - 2. Auxiliary Relays: One Form C rated at 0.5 A.
Audible Notification Appliance: Piezoelectric sounder rated at 90 dBA at 10 feet (3 m) according to UL 464.
 - 3. Visible Notification Appliance: 177-cd strobe.
 - 4. Heat sensor, 135 deg F (57 deg C) combination rate-of-rise and fixed temperature.
 - 5. Test Switch: Push to test; simulates smoke at rated obscuration.
 - 6. Tandem Connection: Allow tandem connection of number of indicated detectors; alarm on one detector shall actuate notification on all connected detectors.
 - 7. Plug-in Arrangement: Detector and associated electronic components shall be mounted in a plug-in module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
 - 8. Self-Restoring: Detectors shall not require resetting or readjustment after actuation to restore them to normal operation.
 - 9. Integral Visual-Indicating Light: LED type indicating detector has operated and power-on status.
- B. Single-Station Duct Smoke Detectors:
 - 1. Comply with UL 268A; operating at 120-V ac.
 - 2. Sensor: LED or infrared light source with matching silicon-cell receiver.
 - a. Detector Sensitivity: Smoke obscuration between 2.5 and 3.5 percent/foot (0.008 and 0.011 percent/mm) when tested according to UL 268A.
 - 3. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. The fixed base shall be designed for mounting directly to air duct. Provide terminals in the fixed base for connection to building wiring.
 - a. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with the supplied detector.
 - 4. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions were applied.
 - 5. Relay Fan Shutdown: Rated to interrupt fan motor-control circuit.

2.07 HEAT DETECTORS

- A. General Requirements for Heat Detectors: Comply with UL 521.

- B. Heat Detector, Combination Type: Actuated by either a fixed temperature of 135 deg F (57 deg C) or a rate of rise that exceeds 15 deg F (8 deg C) per minute unless otherwise indicated.
 - 1. Mounting: Twist-lock base interchangeable with smoke-detector bases.
 - 2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
- C. Heat Detector, Fixed-Temperature Type: Actuated by temperature that exceeds a fixed temperature of 190 deg F (88 deg C).
 - 1. Mounting: Twist-lock base interchangeable with smoke-detector bases.
 - 2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.

2.08 NOTIFICATION APPLIANCES

- A. General Requirements for Notification Appliances: Connected to notification appliance signal circuits, zoned as indicated, equipped for mounting as indicated and with screw terminals for system connections.
 - 1. Combination Devices: Factory-integrated audible and visible devices in a single-mounting assembly, equipped for mounting as indicated and with screw terminals for system connections.
- B. Chimes, Low-Level Output: Vibrating type, 75-dBA minimum rated output.
- C. Chimes, High-Level Output: Vibrating type, 81-dBA minimum rated output.
- D. Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Comply with UL 464. Horns shall produce a sound-pressure level of 90 dBA, measured 10 feet (3 m) from the horn, using the coded signal prescribed in UL 464 test protocol.
- E. Visible Notification Appliances: Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum 1-inch- (25-mm-) high letters on the lens.
 - 1. Rated Light Output:
 - a. 15/30/75/110 cd, selectable in the field.
 - 2. Mounting: Wall mounted unless otherwise indicated.
 - 3. For units with guards to prevent physical damage, light output ratings shall be determined with guards in place.
 - 4. Flashing shall be in a temporal pattern, synchronized with other units.
 - 5. Strobe Leads: Factory connected to screw terminals.
 - 6. Mounting Faceplate: Factory finished red.

2.09 MAGNETIC DOOR HOLDERS

- A. Description: Units are equipped for wall or floor mounting as indicated and are complete with matching doorplate.
 - 1. Electromagnet: Requires no more than 3 W to develop 25-lbf (111-N) holding force.
 - 2. Wall-Mounted Units: Flush mounted unless otherwise indicated.
 - 3. Rating: 24-V ac or dc.
- B. Material and Finish: Match door hardware.

2.10 REMOTE ANNUNCIATOR

- A. Description: Annunciator functions shall match those of fire-alarm control unit for alarm, supervisory, and trouble indications. Manual switching functions shall match those of fire-alarm control unit, including acknowledging, silencing, resetting, and testing.
 - 1. Mounting: Surface cabinet, NEMA 250, Type 1.
- B. Display Type and Functional Performance: Alphanumeric display and LED indicating lights shall match those of fire-alarm control unit. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

2.11 ADDRESSABLE INTERFACE DEVICE

- A. Description: Microelectronic monitor module, NRTL listed for use in providing a system address for alarm-initiating devices for wired applications with normally open contacts.
- B. Integral Relay: Capable of providing a direct signal to elevator controller to initiate elevator recall.

2.12 DIGITAL ALARM COMMUNICATOR TRANSMITTER

- A. Digital alarm communicator transmitter shall be acceptable to the remote central station and shall comply with UL 632 and be listed and labeled by an NRTL.
- B. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from fire-alarm control unit and automatically capture one telephone line(s) and dial a preset number for a remote central station. When contact is made with central station(s), signals shall be transmitted. If service on line is interrupted for longer than 45 seconds, transmitter shall initiate a local trouble signal and transmit the signal indicating loss of telephone line to the remote alarm receiving station over the remaining line. Transmitter shall automatically report telephone service restoration to the central station. If service is lost on both telephone lines, transmitter shall initiate the local trouble signal.
- C. Local functions and display at the digital alarm communicator transmitter shall include the following:
 - 1. Verification that both telephone lines are available.
 - 2. Programming device.
 - 3. LED display.
 - 4. Manual test report function and manual transmission clear indication.
 - 5. Communications failure with the central station or fire-alarm control unit.
- D. Digital data transmission shall include the following:
 - 1. Address of the alarm-initiating device.
 - 2. Address and Zone of the supervisory signal.
 - 3. Address and Zone of the trouble-initiating device.
 - 4. Loss of ac supply or loss of power.
 - 5. Low battery.
 - 6. Abnormal test signal.
 - 7. Communication bus failure.
- E. Secondary Power: Integral rechargeable battery and automatic charger.

- F. Self-Test: Conducted automatically every 24 hours with report transmitted to central station.

PART 3 EXECUTION

3.01 EQUIPMENT INSTALLATION

- A. Comply with NFPA 72 for installation of fire-alarm equipment.
- B. Install wall-mounted equipment, with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.
- C. Smoke- or Heat-Detector Spacing:
 - 1. Comply with NFPA 72, "Smoke-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for smoke-detector spacing.
 - 2. Comply with NFPA 72, "Heat-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for heat-detector spacing.
 - 3. Smooth ceiling spacing shall not exceed 30 feet (9 m).
 - 4. Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas shall be determined according to Appendix A or Appendix B in NFPA 72.
 - 5. HVAC: Locate detectors not closer than 3 feet (1 m) from air-supply diffuser or return-air opening.
 - 6. Lighting Fixtures: Locate detectors not closer than 12 inches (300 mm) from any part of a lighting fixture.
- D. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of duct.
- E. Heat Detectors in Elevator Shafts: Coordinate temperature rating and location with sprinkler rating and location.
- F. Single-Station Smoke Detectors: Where more than one smoke alarm is installed within an area, they shall be connected so that the operation of any smoke alarm causes the alarm in all smoke alarms to sound.
- G. Remote Status and Alarm Indicators: Install near each smoke detector and each sprinkler water-flow switch and valve-tamper switch that is not readily visible from normal viewing position.
- H. Audible Alarm-Indicating Devices: Install not less than 6 inches (150 mm) below the ceiling. Install bells and horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille.
- I. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inches (150 mm) below the ceiling.
- J. Device Location-Indicating Lights: Locate in public space near the device they monitor.
- K. Fire-Alarm Control Unit: Surface mounted, with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.
- L. Annunciator: Install with top of panel not more than 72 inches (1830 mm) above the finished floor. Coordinate location with San Diego Police Headquarters staff prior to rough-in.

3.02 CONNECTIONS

- A. Make addressable connections with a supervised interface device to the following devices and systems. Install the interface device less than 3 feet (1 m) from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.
 - 1. Alarm-initiating connection to elevator recall system and components.
 - 2. Supervisory connections at valve supervisory switches.
 - 3. Supervisory connections at low-air-pressure switch of each dry-pipe sprinkler system.
 - 4. Supervisory connections at fire-pump power failure including a dead-phase or phase-reversal condition.
 - 5. Supervisory connections at fire-pump engine control panel.

3.03 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- B. Install framed instructions in a location visible from fire-alarm control unit.

3.04 GROUNDING

- A. Ground fire-alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control unit.

3.05 FIELD QUALITY CONTROL

- A. Field tests shall be witnessed by Owner and authorities having jurisdiction.
- B. Tests and Inspections:
 - 1. Visual Inspection: Conduct visual inspection prior to testing.
 - a. Inspection shall be based on completed Record Drawings and system documentation that is required by NFPA 72 in its "Completion Documents, Preparation" Table in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter.
 - b. Comply with "Visual Inspection Frequencies" Table in the "Inspection" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.
 - 2. System Testing: Comply with "Test Methods" Table in the "Testing" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
 - 3. Test audible appliances for the public operating mode according to manufacturer's written instructions. Perform the test using a portable sound-level meter complying with Type 2 requirements in ANSI S1.4.
 - 4. Test audible appliances for the private operating mode according to manufacturer's written instructions.
 - 5. Test visible appliances for the public operating mode according to manufacturer's written instructions.
 - 6. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72 and the "Inspection and Testing Form"

in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.

- C. Fire-alarm system will be considered defective if it does not pass all applicable tests and inspections.
- D. Prepare test and inspection reports.
- E. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.
- F. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

END OF SECTION

APPENDIX A
NOTICE OF EXEMPTION

NOTICE OF EXEMPTION

(Check one or both)

TO: X RECORDER/COUNTY CLERK
P.O. BOX 1750, MS A-33
1600 PACIFIC HWY, ROOM 260
SAN DIEGO, CA 92101-2422
OFFICE OF PLANNING AND RESEARCH
1400 TENTH STREET, ROOM 121
SACRAMENTO, CA 95814

FROM: CITY OF SAN DIEGO
DEVELOPMENT SERVICES DEPARTMENT
1222 FIRST AVENUE, MS 501
SAN DIEGO, CA 92101

PROJECT NO.: WBS #B-00952

PROJECT TITLE: Police Headquarters Deferred Maintenance

PROJECT LOCATION-SPECIFIC: The Police Headquarters project is located at 1401 Broadway, San Diego, CA 92101. The project is located in the Centre City Community Plan area.

PROJECT LOCATION-CITY/COUNTY: San Diego/San Diego

DESCRIPTION OF NATURE AND PURPOSE OF THE PROJECT: This project will replace the existing electrical systems, plumbing systems, door and windows with new equipment.

NAME OF PUBLIC AGENCY APPROVING PROJECT: City of San Diego

NAME OF PERSON OR AGENCY CARRYING OUT PROJECT: City of San Diego, E&CP Dept/David Manela
600 B Street, Suite 800 (MS 908A)
San Diego, CA 92101
619-533-5186

EXEMPT STATUS: (CHECK ONE)

- () MINISTERIAL (SEC. 21080(b)(1); 15268);
() DECLARED EMERGENCY (SEC. 21080(b)(3); 15269(a));
() EMERGENCY PROJECT (SEC. 21080(b)(4); 15269 (b)(c))
(X) CATEGORICAL EXEMPTION: 15301(EXISTING FACILITIES)
() STATUTORY EXEMPTIONS:

REASONS WHY PROJECT IS EXEMPT: The City of San Diego conducted an Initial Study which determined that since the project will occur within the existing building within a developed site containing no sensitive biological and historical resources that the action would not result in impacts to these or any other resources.

LEAD AGENCY CONTACT PERSON: MYRA HERRMANN

TELEPHONE: (619) 446-5372

IF FILED BY APPLICANT:

- 1. ATTACH CERTIFIED DOCUMENT OF EXEMPTION FINDING.
2. HAS A NOTICE OF EXEMPTION BEEN FILED BY THE PUBLIC AGENCY APPROVING THE PROJECT?
() YES () NO

IT IS HEREBY CERTIFIED THAT THE CITY OF SAN DIEGO HAS DETERMINED THE ABOVE ACTIVITY TO BE EXEMPT FROM CEQA

Myra Herrmann Senior Planner
SIGNATURE/TITLE

JUNE 30, 2010
DATE

CHECK ONE:

(X) SIGNED BY LEAD AGENCY

DATE RECEIVED FOR FILING WITH COUNTY CLERK OR OPR:

() SIGNED BY APPLICANT

APPENDIX B
FIRE HYDRANT METER PROGRAM

CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS	NUMBER DI 55.27	DEPARTMENT Water Department
SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 1 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

1. **PURPOSE**

- 1.1 To establish a Departmental policy and procedure for issuance, proper usage and charges for fire hydrant meters.

2. **AUTHORITY**

- 2.1 All authorities and references shall be current versions and revisions.
- 2.2 San Diego Municipal Code (NC) Chapter VI, Article 7, Sections 67.14 and 67.15
- 2.3 Code of Federal Regulations, Safe Drinking Water Act of 1986
- 2.4 California Code of Regulations, Titles 17 and 22
- 2.5 California State Penal Code, Section 498B.0
- 2.6 State of California Water Code, Section 110, 500-6, and 520-23
- 2.7 Water Department Director

Reference

- 2.8 State of California Guidance Manual for Cross Connection Programs
- 2.9 American Water Works Association Manual M-14, Recommended Practice for Backflow Prevention
- 2.10 American Water Works Association Standards for Water Meters
- 2.11 U.S.C. Foundation for Cross Connection Control and Hydraulic Research Manual

3. **DEFINITIONS**

- 3.1 **Fire Hydrant Meter:** A portable water meter which is connected to a fire hydrant for the purpose of temporary use. (These meters are sometimes referred to as Construction Meters.)

CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS	NUMBER DI 55.27	DEPARTMENT Water Department
SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 2 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

- 3.2 **Temporary Water Use:** Water provided to the customer for no longer than twelve (12) months.
- 3.3 **Backflow Preventor:** A Reduced Pressure Principal Assembly connected to the outlet side of a Fire Hydrant Meter.

4. **POLICY**

- 4.1 The Water Department shall collect a deposit from every customer requiring a fire hydrant meter and appurtenances prior to providing the meter and appurtenances (see Section 7.1 regarding the Fees and Deposit Schedule). The deposit is refundable upon the termination of use and return of equipment and appurtenances in good working condition.
- 4.2 Fire hydrant meters will have a 2 ½" swivel connection between the meter and fire hydrant. The meter shall not be connected to the 4" port on the hydrant. All Fire Hydrant Meters issued shall have a Reduced Pressure Principle Assembly (RP) as part of the installation. Spanner wrenches are the only tool allowed to turn on water at the fire hydrant.
- 4.3 The use of private hydrant meters on City hydrants is prohibited, with exceptions as noted below. All private fire hydrant meters are to be phased out of the City of San Diego. All customers who wish to continue to use their own fire hydrant meters must adhere to the following conditions:
 - a. Meters shall meet all City specifications and American Water Works Association (AWWA) standards.
 - b. Customers currently using private fire hydrant meters in the City of San Diego water system will be allowed to continue using the meter under the following conditions:
 - 1. The customer must submit a current certificate of accuracy and calibration results for private meters and private backflows annually to the City of San Diego, Water Department, Meter Shop.

CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS	NUMBER DI 55.27	DEPARTMENT Water Department
SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 3 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

2. The meter must be properly identifiable with a clearly labeled serial number on the body of the fire hydrant meter. The serial number shall be plainly stamped on the register lid and the main casing. Serial numbers shall be visible from the top of the meter casing and the numbers shall be stamped on the top of the inlet casing flange.
3. All meters shall be locked to the fire hydrant by the Water Department, Meter Section (see Section 4.7).
4. All meters shall be read by the Water Department, Meter Section (see Section 4.7).
5. All meters shall be relocated by the Water Department, Meter Section (see Section 4.7).
6. These meters shall be tested on the anniversary of the original test date and proof of testing will be submitted to the Water Department, Meter Shop, on a yearly basis. If not tested, the meter will not be allowed for use in the City of San Diego.
7. All private fire hydrant meters shall have backflow devices attached when installed.
8. The customer must maintain and repair their own private meters and private backflows.
9. The customer must provide current test and calibration results to the Water Department, Meter Shop after any repairs.
10. When private meters are damaged beyond repair, these private meters will be replaced by City owned fire hydrant meters.

CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS	NUMBER DI 55.27	DEPARTMENT Water Department
SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 4 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

11. When a private meter malfunctions, the customer will be notified and the meter will be removed by the City and returned to the customer for repairs. Testing and calibration results shall be given to the City prior to any re-installation.
12. The register shall be hermetically sealed straight reading and shall be readable from the inlet side. Registration shall be in hundred cubic feet.
13. The outlet shall have a 2 ½ "National Standards Tested (NST) fire hydrant male coupling.
14. Private fire hydrant meters shall not be transferable from one contracting company to another (i.e. if a company goes out of business or is bought out by another company).

4.4 All fire hydrant meters and appurtenances shall be installed, relocated and removed by the City of San Diego, Water Department. All City owned fire hydrant meters and appurtenances shall be maintained by the City of San Diego, Water Department, Meter Services.

4.5 If any fire hydrant meter is used in violation of this Department Instruction, the violation will be reported to the Code Compliance Section for investigation and appropriate action. Any customer using a fire hydrant meter in violation of the requirements set forth above is subject to fines or penalties pursuant to the Municipal Code, Section 67.15 and Section 67.37.

4.6 **Conditions and Processes for Issuance of a Fire Hydrant Meter**

Process for Issuance

- a. Fire hydrant meters shall only be used for the following purposes:
 1. Temporary irrigation purposes not to exceed one year.

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SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 5 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

2. Construction and maintenance related activities (see Tab 2).
 - b. No customer inside or outside the boundaries of the City of San Diego Water Department shall resell any portion of the water delivered through a fire hydrant by the City of San Diego Water Department.
 - c. The City of San Diego allows for the issuance of a temporary fire hydrant meter for a period not to exceed 12 months (365 days). An extension can only be granted in writing from the Water Department Director for up to 90 additional days. A written request for an extension by the consumer must be submitted at least 30 days prior to the 12 month period ending. No extension shall be granted to any customer with a delinquent account with the Water Department. No further extensions shall be granted.
 - d. Any customer requesting the issuance of a fire hydrant meter shall file an application with the Meter Section. The customer must complete a "Fire Hydrant Meter Application" (Tab 1) which includes the name of the company, the party responsible for payment, Social Security number and/or California ID, requested location of the meter (a detailed map signifying an exact location), local contact person, local phone number, a contractor's license (or a business license), description of specific water use, duration of use at the site and full name and address of the person responsible for payment.
 - e. At the time of the application the customer will pay their fees according to the schedule set forth in the Rate Book of Fees and Charges, located in the City Clerk's Office. All fees must be paid by check, money order or cashiers check, made payable to the City Treasurer. Cash will not be accepted.
 - f. No fire hydrant meters shall be furnished or relocated for any customer with a delinquent account with the Water Department.
 - g. After the fees have been paid and an account has been created, the

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meter shall be installed within 48 hours (by the second business day). For an additional fee, at overtime rates, meters can be installed within 24 hours (within one business day).

4.7 Relocation of Existing Fire Hydrant Meters

- a. The customer shall call the Fire Hydrant Meter Hotline (herein referred to as “Hotline”), a minimum of 24 hours in advance, to request the relocation of a meter. A fee will be charged to the existing account, which must be current before a work order is generated for the meter’s relocation.
- b. The customer will supply in writing the address where the meter is to be relocated (map page, cross street, etc). The customer must update the original Fire Hydrant Meter Application with any changes as it applies to the new location.
- c. Fire hydrant meters shall be read on a monthly basis. While fire hydrant meters and backflow devices are in service, commodity, base fee and damage charges, if applicable, will be billed to the customer on a monthly basis. If the account becomes delinquent, the meter will be removed.

4.8 Disconnection of Fire Hydrant Meter

- a. After ten (10) months a “Notice of Discontinuation of Service” (Tab 3) will be issued to the site and the address of record to notify the customer of the date of discontinuance of service. An extension can only be granted in writing from the Water Department Director for up to 90 additional days (as stated in Section 4.6C) and a copy of the extension shall be forwarded to the Meter Shop Supervisor. If an extension has not been approved, the meter will be removed after twelve (12) months of use.
- b. Upon completion of the project the customer will notify the Meter Services office via the Hotline to request the removal of the fire hydrant meter and appurtenances. A work order will be generated

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for removal of the meter.

- c. Meter Section staff will remove the meter and backflow prevention assembly and return it to the Meter Shop. Once returned to the Meter Shop the meter and backflow will be tested for accuracy and functionality.
- d. Meter Section Staff will contact and notify Customer Services of the final read and any charges resulting from damages to the meter and backflow or its appurtenance. These charges will be added on the customer's final bill and will be sent to the address of record. Any customer who has an outstanding balance will not receive additional meters.
- e. Outstanding balances due may be deducted from deposits and any balances refunded to the customer. Any outstanding balances will be turned over to the City Treasurer for collection. Outstanding balances may also be transferred to any other existing accounts.

5. **EXCEPTIONS**

- 5.1 Any request for exceptions to this policy shall be presented, in writing, to the Customer Support Deputy Director, or his/her designee for consideration.

6. **MOBILE METER**

- 6.1 Mobile meters will be allowed on a case by case basis. All mobile meters will be protected by an approved backflow assembly and the minimum requirement will be a Reduced Pressure Principal Assembly. The two types of Mobile Meters are vehicle mounted and floating meters. Each style of meters has separate guidelines that shall be followed for the customer to retain service and are described below:

- a) **Vehicle Mounted Meters:** Customer applies for and receives a City owned Fire Hydrant Meter from the Meter Shop. The customer mounts the meter on the vehicle and brings it to the Meter Shop for

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inspection. After installation is approved by the Meter Shop the vehicle and meter shall be brought to the Meter Shop on a monthly basis for meter reading and on a quarterly basis for testing of the backflow assembly. Meters mounted at the owner's expense shall have the one year contract expiration waived and shall have meter or backflow changed if either fails.

b) **Floating Meters:** Floating Meters are meters that are not mounted to a vehicle. **(Note: All floating meters shall have an approved backflow assembly attached.)** The customer shall submit an application and a letter explaining the need for a floating meter to the Meter Shop. The Fire Hydrant Meter Administrator, after a thorough review of the needs of the customer, (i.e. number of jobsites per day, City contract work, lack of mounting area on work vehicle, etc.), may issue a floating meter. At the time of issue, it will be necessary for the customer to complete and sign the "Floating Fire Hydrant Meter Agreement" which states the following:

- 1) The meter will be brought to the Meter Shop at 2797 Caminito Chollas, San Diego on the third week of each month for the monthly read by Meter Shop personnel.
- 2) Every other month the meter will be read and the backflow will be tested. This date will be determined by the start date of the agreement.

If any of the conditions stated above are not met the Meter Shop has the right to cancel the contract for floating meter use and close the account associated with the meter. The Meter Shop will also exercise the right to refuse the issuance of another floating meter to the company in question.

Any Fire Hydrant Meter using reclaimed water shall not be allowed use again with any potable water supply. The customer shall incur the cost of replacing the meter and backflow device in this instance.

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7. FEE AND DEPOSIT SCHEDULES

- 7.1 **Fees and Deposit Schedules:** The fees and deposits, as listed in the Rate Book of Fees and Charges, on file with the Office of the City Clerk, are based on actual reimbursement of costs of services performed, equipment and materials. These deposits and fees will be amended, as needed, based on actual costs. Deposits, will be refunded at the end of the use of the fire hydrant meter, upon return of equipment in good working condition and all outstanding balances on account are paid. Deposits can also be used to cover outstanding balances.

All fees for equipment, installation, testing, relocation and other costs related to this program are subject to change without prior notification. The Mayor and Council will be notified of any future changes.

8. UNAUTHORIZED USE OF WATER FROM A HYDRANT

- 8.1 Use of water from any fire hydrant without a properly issued and installed fire hydrant meter is theft of City property. Customers who use water for unauthorized purposes or without a City of San Diego issued meter will be prosecuted.
- 8.2 If any unauthorized connection, disconnection or relocation of a fire hydrant meter, or other connection device is made by anyone other than authorized Water Department personnel, the person making the connection will be prosecuted for a violation of San Diego Municipal Code, Section 67.15. In the case of a second offense, the customer's fire hydrant meter shall be confiscated and/or the deposit will be forfeited.
- 8.3 Unauthorized water use shall be billed to the responsible party. Water use charges shall be based on meter readings, or estimates when meter readings are not available.
- 8.4 In case of unauthorized water use, the customer shall be billed for all applicable charges as if proper authorization for the water use had been obtained, including but not limited to bi-monthly service charges, installation charges and removal charges.

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- 8.5 If damage occurs to Water Department property (i.e. fire hydrant meter, backflow, various appurtenances), the cost of repairs or replacements will be charged to the customer of record (applicant).

Water Department Director

- Tabs: 1. Fire Hydrant Meter Application
2. Construction & Maintenance Related Activities With No Return To Sewer
3. Notice of Discontinuation of Service

APPENDIX

Administering Division: Customer Support Division

Subject Index: Construction Meters
Fire Hydrant
Fire Hydrant Meter Program
Meters, Floating or Vehicle Mounted
Mobile Meter
Program, Fire Hydrant Meter

Distribution: DI Manual Holders



Application For Fire Hydrant Meter

(EXHIBIT A)

For Office Use Only

Department: METER SHOP 619 527 7449
2797 Caminito Chollas • San Diego, California 92105-5097 • FAX 619 527 3125

NS Req:	Fac #:
Date:	By:

Application Date:	Requested Install Date:
-------------------	-------------------------

Fire Hydrant Location: (Attach detailed map, Thomas Bros. map location or construction drawing.)

Specific Use of Water:

Any return to Sewer or Storm Drain, if so, explain:

Estimated Duration of Meter Use: Check Box if Reclaimed Water

Company Information

Company Name:

Mailing Address:

City: State: Zip Code: Phone: ()

*Business License #: *Contractor License #:

**A copy of the Contractor's License and/or Business License is required at the time of meter issuance.*

Name and Title of Agent: Phone: ()

Site Contact Name and Title: Phone: ()

Pager #: Cell: ()

Responsible Party Name: Title:

Social Security or Cal ID #: Phone: ()

Signature: Date:

Guarantees payment of all charges resulting from the use of this meter. Insures that employees of this organization understand the proper use of Fire Hydrant Meter.

Fire Hydrant Meter Removal Request

Check Box to Request Removal of Above Meter Requested Removal Date:

Provide current Meter location if different from above:

Signature: Title: Date:

Phone: () Pager: ()

For Office Use Only

<input type="checkbox"/> City Meter	<input type="checkbox"/> Private Meter	
CIS Account #:	Deposit Amount: \$	Fees Amount: \$
Meter Serial #:	Meter Size:	Meter Make & Style:
Backflow #:	Backflow Size:	Meter Make & Style:
Name:	Signature:	Date:

\$1,108.45 - FOR 24 HR INSTALLATION
 \$1,052.26 - FOR 48 HR INSTALLATION

FHM App Created: 11/2/00-htp

"Exhibit B"

CONSTRUCTION AND MAINTENANCE RELATED ACTIVITIES WITH NO RETURN TO SEWER:

**Auto Detailing
Backfilling
Combination Cleaners (Vactors)
Compaction
Concrete Cutters
Construction Trailers
Cross Connection Testing
Dust Control
Flushing Water Mains
Hydro blasting
Hydro Seeding
Irrigation (for establishing irrigation only; not continuing irrigation)
Mixing Concrete
Mobile Car Washing
Special Events
Street Sweeping
Water Tanks
Water Trucks
Window Washing**

Note: If there is any return to sewer or storm drain, then sewer and/or storm drain fees will be charged.

"Exhibit C"

Date

Name of Responsible Party
Company Name and address
Account Number: _____

Subject: Discontinuation of Fire Hydrant Meter Service

Dear Water Department Customer:

The authorization for use of Fire Hydrant Meter # _____ located at (Meter location address) ends in 60 days and will be removed on or after (Date authorization expires). Extension requests for an additional 90 days must be submitted in writing for consideration 30 days prior to the discontinuation date. If you require an extension, please refer to the Water Departments', Department Instruction (D.I.) 55.27 for further information and procedure.

Mail your request for an extension to :

City of San Diego, Water Department
Attn: Meter Services
2797 Caminito Chollas
San Diego, Ca. 92105-5097

Should you have any questions regarding this matter, please call the Fire Hydrant "Hot Line" at: (xxx) xxx-xxx.

Sincerely,

City of San Diego Water Department



Fire Hydrant Meter Relocate/Removal Request

(EXHIBIT D)

For Office Use Only

NS Req:	FHM Fac #:
Date:	By:

Date:

Instruction: Complete pertinent information then FAX both form and map to (xxx) xxx-xxxx, mail, or hand-deliver to the City of San Diego, Water Department/Meter Shop at: 2707 Caminito Chollas San Diego, CA 92105

Meter Information

Billing Account #:	Requested Move Date:
Current Fire Hydrant Meter Location:	
New Meter Location: (Attach a detailed map, Thomas Bros map location or construction drawing.)	

Company Information

Company Name:			
Mailing Address			
City:	State:	Zip Code:	Phone: ()
Name and Title of Requestor:			Phone: ()
Site Contact Name and Title			Phone: ()
Pager #:			Cell: ()
Responsible Party Name authorizing relocation fee:			
Signature:	Title:	Date:	

Fire Hydrant Meter Removal Request

<input type="checkbox"/> Check Box to Request Removal of Above Meter	Requested Removal Date:	
Provide current Meter location if different from above:		
Signature:	Title:	Date:
Phone: ()	Pager: ()	

For Office Use Only

CIS Account #:	Fees Amount: \$		
Meter Serial #:	Size:	Make/Style	
Backflow #:	Size:	Make/Style	
Name:	Signature:	Date:	

FHM Relocate_Removal Form

FHM App Created: 11/2/00-htp

APPENDIX C

MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE

Materials Typically Accepted by Certificate of Compliance

1. Soil amendment
2. Fiber mulch
3. PVC or PE pipe up to 16 inch diameter
4. Stabilizing emulsion
5. Lime
6. Preformed elastomeric joint seal
7. Plain and fabric reinforced elastomeric bearing pads
8. Steel reinforced elastomeric bearing pads
9. Waterstops (Special Condition)
10. Epoxy coated bar reinforcement
11. Plain and reinforcing steel
12. Structural steel
13. Structural timber and lumber
14. Treated timber and lumber
15. Lumber and timber
16. Aluminum pipe and aluminum pipe arch
17. Corrugated steel pipe and corrugated steel pipe arch
18. Structural metal plate pipe arches and pipe arches
19. Perforated steel pipe
20. Aluminum underdrain pipe
21. Aluminum or steel entrance tapers, pipe downdrains, reducers, coupling bands and slip joints
22. Metal target plates
23. Paint (traffic striping)
24. Conductors
25. Painting of electrical equipment
26. Electrical components
27. Engineering fabric
28. Portland Cement
29. PCC admixtures
30. Minor concrete, asphalt
31. Asphalt (oil)
32. Liquid asphalt emulsion
33. Epoxy

APPENDIX D
SAMPLE CITY INVOICE

City of San Diego, Field Engineering Div., 9485 Aero Drive, SD CA 92123						Contractor's Name:					
Project Name:						Contractor's Address:					
SAP No. (WBS/IO/CC)											
City Purchase Order No.						Contractor's Phone #:			Invoice No.		
Resident Engineer (RE):						Contractor's Fax #:			Invoice Date:		
RE Phone#:			RE Fax#:			Contact Name:			Billing Period:		
Item #	Item Description	Contract Authorization				Previous Estimate		This Estimate		Totals to Date	
		Unit	Qty	Price	Extension	%/QTY	Amount	% / QTY	Amount	% / QTY	Amount
1	2 Parallel 4" PVC C900	LF	1,380	\$34.00	\$46,920.00						
2	48" Primary Steel Casing	LF	500	\$1,000.00	\$500,000.00						
3	2 Parallel 12" Secondary Steel	LF	1,120	\$53.00	\$59,360.00						
4	Construction and Rehab of PS 49	LS	1	\$150,000.00	\$150,000.00						
5	Demo	LS	1	\$14,000.00	\$14,000.00						
6	Install 6' High Chain Link Fence	LS	1	\$5,600.00	\$5,600.00						
7	General Site Restoration	LS	1	\$3,700.00	\$3,700.00						
8	10" Gravity Sewer	LF	10	\$292.00	\$2,920.00						
9	4" Blow Off Valves	EA	2	\$9,800.00	\$19,600.00						
10	Bonds	LS	1	\$16,000.00	\$16,000.00						
11	Field Orders	AL	1	80,000	\$80,000.00						
11.1	Field Order 1	LS	5,500	\$1.00	\$5,500.00						
11.2	Field Order 2	LS	7,500	\$1.00	\$7,500.00						
11.3	Field Order 3	LS	10,000	\$1.00	\$10,000.00						
11.4	Field Order 4	LS	6,500	\$1.00	\$6,500.00						
12	Certified Payroll	LS	1	\$1,400.00	\$1,400.00						
CHANGE ORDERS											
Change Order 1			4,890								
Items 1-4					\$11,250.00						
Item 5-Deduct Bid Item 3		LF	120	-\$53.00	(\$6,360.00)						
Change Order 2			160,480								
Items 1-3					\$95,000.00						
Item 4 Deduct Bid Item 1		LF	380	-\$340.00	(\$12,920.00)						
Item 5-Encrease bid Item 9		LF	8	\$9,800.00	\$78,400.00						
Change Order 3 (Close Out)			-121,500								
Item 1 Deduct Bid Item 3			53	-500.00	(\$26,500.00)						
Item 2 Deduct Bid Item 4		LS	-1	45,000.00	(\$45,000.00)						
Items 3-9			1	-50,500.00	(\$50,500.00)						
SUMMARY								Total This	\$ -	Total Billed	\$0.00
A. Original Contract Amount						Retention and/or Escrow Payment Schedule					
B. Approved Change Order 1 Thru 3						Total Retention Required as of this billing					
C. Total Authorized Amount (A+B)						Previous Retention Withheld in PO or in Escrow					
D. Total Billed to Date						Add'l Amt to Withhold in PO/Transfer in Escrow:					
E. Less Total Retention (5% of D)						Amt to Release to Contractor from PO/Escrow:					
F. Less Total Previous Payments											
G. Payment Due Less Retention						Contractor Signature and Date:					
H. Remaining Authorized Amount											

APPENDIX E
LOCATION MAP



City of San Diego

ADDENDUM "A"

FOR

POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES

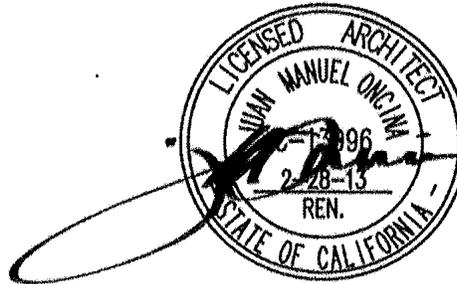


BID NO.: _____ K-12-5548-DBB-3-C
SAP NO. (WBS/IO/CC): _____ B-10008/B-00952/B-10010
COUNCIL DISTRICT: _____ 2
CLIENT DEPARTMENT: _____ 1914
PROJECT TYPE: _____ BA

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Professional Engineer or Licensed Architect:

Manuel Oncina, Architect

Professional Engineer or Licensed Architect



Seal:

A. CHANGES TO THE BID SUBMITTAL DUE DATE AND TIME

The bid opening date for this project has been extended to **2:00 PM on May 17th 2012.**

Proposals will be received at the Public Works Contracting Group, 1200 Third Avenue, Suite 200, San Diego, California 92101.

B. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package.

C. BIDDER'S QUESTIONS

Q.1. The invitation to bid scope of work states a new generator, fire sprinkler system along with other items. I see an existing generator on the drawings and no fire sprinkler drawings or specs. i) Please clarify if this project gets a new generator. ii) Please clarify if there is any fire sprinkler work on this project.

A.1. i) The generator will not be replaced as part of this Contract. The scope identifies work directly associated with the generator but not generator replacement.

ii) There will be no fire sprinkler work on this Contract. The scope is limited to entire fire alarm system only and all accessories.

Q.2. Referenced in the new projects spec is this paragraph.

“There must be at least 2 advertisements published, 1 advertisement in a trade publication and 1 in a focus group publication. Additional advertising for SLBE-ELBE participation may be placed in newspapers, trade papers and on the Internet. For a listing of publications accepting advertisements, please visit the City’s EOC home page...”

What is a “focus group publication?”

I have printed the advertisement resource directory and there is no “focus group publication” listed in that document.

A.2. Focus Group Publications are any targeted demographic, i.e., Cultural/Ethnic, etc.

Q.3. At the pre-bid conference it was mentioned that prevailing wage was NOT required for this project but certified payroll was, per item #10 on the invitation to bid. Item #22 under the instructions to bidders states the exemption does not apply to contracts under labor compliance.

Please clarify prevailing wage is required or is not required for this project.

A.3. Prevailing Wages DO NOT apply.

Q.4. Is there a threshold number where the awarded prime contractor must be itself a SLBE or ELBE to be awarded the contract, not just using subcontractors that are SLBE or ELBE? Example: projects under say \$500,000 requires the prime contractor to be an SLBE and projects over \$500,000 requires participation in the SLBE program but the prime does not need to be an SLBE, just meet the participation goals for the project.

A.4. See the EOCP provisions in the Whitebook, 2010 Edition.

Q.5. This project requires SLBE participation of 2.1%. The specs show a recommended breakdown between SLBE and ELBE. Can the 2.1% participation be spread between SLBE and ELBE in any percentages? Do you require both ELBE and SLBE or can the 2.1% be either SLBE or ELBE as long as the total for both is 2.1% or greater?

A.5. Bidders may achieve the total mandatory participation level with any combination of the ELBE and SLBE participation percentage.

Q.6. It was mentioned at the pre-bid meeting that the restroom upgrades need to be phased with work on one floor at a time to reduce restroom closures. We need to have access to at least two floors at a time to facilitate access to any below floor work. Please clarify the phasing requirements and schedule. Will there be a dedicated elevator or a service elevator to use for the project for removal of demo and moving fixtures to each floor, etc?

A.6. If the Contractor needs to gain access to the floor below to make any disconnections and reconnection of supply, waste lines, and electrical service, the Police Department will make every attempt to assist. However, it must be kept to a minimal amount of time to reduce impacts. More details will be provided after award.

There will be an elevator dedicated for the Project; the Contractor shall supply wall pads. The Police Department provides a pattern for the pads and the Contractor shall install a temporary plywood floor in the elevator to protect floor coverings.

The Police Department understands the Contractor will need access to two floors at a time. The Contractor may perform the major work and close one floor, and then close the floor below to perform disconnects and reconnects as needed. The Contractor shall minimize the closure time on any additional floor.

Q.7. Drawing page A2.1 item #4, calls for new toilet partitions, but plan page D2 does not show these partitions being removed. Please clarify if there are two new partitions in each core restroom as shown on A2.1, and if there are existing partitions that need to be removed.

A.7. Yes, these toilet partitions shall be removed. See revised Plan sheet 36392-12-D (D2), attached, for graphic clarification.

Q.8. Plan page A4.2 detail 7 shows a curb/equipment base. There are no references to this detail. Please clarify if this detail is for the HVAC unit on the roof.

A.8. See Plan sheet G-10, Note #3 for reference to detail 7/A4.2 and detail callout at mechanical unit in plan. Ceiling shall be patched and repaired to match existing materials and finishes.

- Q.9. Is there any ceiling material that needs to be removed and repaired in order to install the unistrut as shown in detail 7/A4.2? Please clarify what the ceiling material is.
- A.9. Ceiling shall be patched and repaired to match existing materials and finishes.
- Q.10. What is the roofing material at the new air conditioner location?
- A.10. The existing roofing material is a 4 ply cold applied, high tensile built up roof with modified membrane title 24 compliant surfacing.
- Q.11. What is the manufacturer of the roofing system? This information is needed to keep any existing warranty in place by using a contractor certified with the roofing manufacturer.
- A.11. The existing roofing system manufacturer is TREMCO.
- Q.12. Specs call for Dal-Tile. Depending on the age of the building, the existing tile may not be available. Please provide the existing tile model and finish.
- A.12. No specifications are available for the existing tile. A submittal approval is required prior to procurement and installation for a close match color, size and material per the specifications.
- Q.13. Spec section 08 4229 calls for 1" insulating glazing color to match. Please clarify what the existing color is whether it's clear or has an internal tent or has a thin film tent.
- A.13. Glazing shall be 1" nominal sealed insulating unit compatible with sliding door manufacturer's frame.
- Exterior Lite:** 1/4 inch nominal, integral tint to match glazing in existing sliding door, fully tempered (ASTM C 1048) with reflective coating on #2 surface.
- Between Lites:** 1/2 inch argon-filled.
- Interior Lite:** 1/4 inch nominal clear and fully tempered (ASTM C 1048).
- Exterior Appearance:** Reflective.
- Q.14. In regards to the automatic telescopic doors needed for the above referenced Contract, the glass is specified as: "1 inch dual glaze color matching existing." Can you please obtain the existing color of the glass and/or makeup?
- A.14. Sealed Glass Unit including color and reflective coating that matches existing glazing shall be submitted for approval. Required: a minimum of 3 - 12x12 samples.

- Q.15 Plan page A2.1 detail #2, item #9 calls for a new door. The demo drawings don't show any door being removed. Please clarify if there is an existing door in the P-1 unisex restroom to be removed and if the door frame is to be removed. If the frame is to be replaced, please clarify the wall type construction and thickness and attachment method for the replacement frame.
- A.15. Door and frame shall be removed per revised Plan sheet 36392-12-D (D2). New door and frame shall be installed per revised Plan sheets 36392-16-D (A2.1) and 36392-21-D (A4.0) and specifications. Existing (Record) drawings do not indicate wall type or thickness. The Contractor shall verify wall type and thickness in field and use appropriate retrofit installation method for frame. See attached revised Plan sheets 36392-12-D (D2), 36392-16-D (A2.1) and 36392-21-D (A4.0) of this addendum.
- Q.16. Drawing page E10 item #6 calls for core drill 3- 4" holes for a total of 6 holes. Please clarify there are to be 6 holes total at the same location and the extra 3 holes are to be sealed or filled with something.
- A.16. Three 4" holes shall be core drilled in Level P1 deck and three in the Level 1 (E Street level) deck immediately above. Holes shall be sealed per typical through-penetration firestop system Plan sheet 36392-22-D (A4.1), detail 7/A4.1.
- Q.17. Please clarify the location of the NEMA 3R box in the southeast courtyard, shown above note #6's splice box. Is this at I-3.6 or J-3.6?
- A.17. There is no grid line "I" Reference to Grid Line "I" on "PARTIAL SOUTHEAST COURTYARD PLAN" shall be changed to Grid Line "J". Other than Grid Line, use stairway door as a correct reference.
- Q.18. On drawing page E14, what kind of Photo sensors or timed switches should be used for landscape lighting? Don't know if any existing or how they are controlled currently or on how many circuits? Please clarify these switches, controllers, and circuits.
- A.18. Reuse existing on/off controls. Locations and types shall be coordinated with the Police Department.
- Q.19. Are we to install a chain to the top of sewer ejector pumps?
- A.19. Yes, provide a permanently installed stainless steel shackle and chain (Type 304 or 316) attached to eyelets on each tank of the new duplex pump system.

Length: adequate length necessary for use in pump installation, lifting of pump for maintenance and to reach nearest masonry wall for attachment when not in use.

Size: Size adequate to support load of fully loaded pump in event of failure for maintenance.

D. VOLUME 1

1. To APPENDICES, **ADD**, APPENDIX F - Storm Water Pump Specification, pages 7 of 23 through 15 of 23 of this Addendum.
2. To APPENDIX F - Storm Water Pump Specification, **DELETE** the word Hydromatic wherever it occurs and **SUBSTITUTE** with the words Hydromatic or approved equal.

E. VOLUME 2

1. To Bidding Documents, Proposal (Bid), Page 10 through 12, **DELETE** in their entirety and **SUBSTITUTE** with pages 16 of 23 through 18 of 23 of this Addendum.

F. PLANS

1. To DRAWING NUMBER 36392-1-D, 36392-12-D, 36392-16-D, 36392-21-D and 36392-25-D, **DELETE** in their entirety and **SUBSTITUTE** with pages 19 of 23 through 23 of 23 of this Addendum.

Tony Heinrichs, Director
Public Works Department

Dated: *May 8, 2012*,
San Diego, California

TH/nb/ca/rir

APPENDIX F
STORM WATER PUMP SPECIFICATION

SD Police HQ
AP-5 Storm Water Pumps

6", 8", and 12" SOLIDS HANDLING HAZARDOUS LOCATION
SUBMERSIBLE SEWAGE PUMPS

1.01 GENERAL

- A. Contractor shall furnish all labor, materials, equipment and incidentals required to provide 3 solids handling submersible centrifugal sewage pump(s) as specified herein.
- B. Pump shall be equipped with stainless steel nameplate, stating the unit is accepted for use in NEC class 1, division 1, groups C, D hazardous locations with third party, Factory Mutual, approval.

2.01 OPERATING CONDITIONS

- A. Each pump shall be rated 25 HP 460 volts, 3 phase, 60 hertz, and 1750 RPM. The unit shall produce 1185 U.S. GPM at 62 feet TDH, with a minimum pump efficiency of 68 % and maximum input kW of kW. The pump shall be capable of handling a 3-1/4" spherical solid. The pump shall be non-overloading throughout the entire range of operation without employing service factor. The pump shall reserve a minimum service factor of 1.20. The performance curve submitted for approval shall state in addition to head and capacity performance, the pump efficiency, solid handling capability, and reflect motor service factor.

3.01 CONSTRUCTION

- A. The pump shall be a centrifugal, non-clog, solids handling, submersible, wastewater type, model 56LX as manufactured by Hydromatic Pump. The pump volute, motor and seal housing shall be high quality gray cast iron, ASTM A-48, Class 30. The pump discharge shall be fitted with a 6" standard ASA 125 lb. flange, faced and drilled. All external mating parts shall be machined and Buna N rubber O-ring sealed on a beveled edge. All mating surfaces shall be flame-proof joints with special labyrinth joint to prevent a flame or spark to travel to the media being pumped. Gaskets shall not be acceptable. All fasteners exposed to the pumped liquids shall be 300 series stainless steel.

3.02 ELECTRICAL POWER CORD

- A. Electrical power cord shall be water resistant 600V, 60°C, UL and CSA approved and applied dependent on amp draw for size.
- B. The pump shall be triple protected with a compression fitting and two epoxy potted areas at the power cord entry to the pump. A separation between the junction box areas of the pump and the motor by a stator lead sealing gland or terminal board shall not be acceptable.
- C. The power cable entry into the cord cap assembly shall first be made with a compression fitting. Each individual lead shall be stripped down to bare wire at staggered intervals, and each strand shall be individually separated. This area of the cord cap shall then be filled with an epoxy compound potting which will prevent water contamination to gain entry even in the event of wicking or capillary attraction.
- D. The power cord leads shall then be connected to the motor leads with extra heavy connectors having brass inserts with a screwed wire-to-wire connection, rather than a terminal board that allows for possible leaks.
- E. The connection box wiring shall be separated from the motor housing wiring by stripping each lead down to bare wire, at staggered intervals, and separating each strand. This area shall be filled with an epoxy compound potting. Fiberglass terminal boards, which are subject to heat fatigue and cracking and which may lead to possible leaks, shall not be acceptable.
- F. The cord cap assembly where bolted to the connection box assembly and the connection box assembly where bolted to the motor housing shall each be sealed with a Buna N rubber O-ring on a beveled edge to assure proper sealing.

50' long cords required

4- mechanical level switches required
0/ cords each
50'



3.03 MOTOR

- A. The stator, rotor and bearings shall be mounted in a sealed submersible type housing. The stator windings shall have Class F insulation (155°C. or 311°F), and a dielectric oil-filled motor, NEMA B design (3 phase), NEMA L design (single phase). Because air-filled motors do not dissipate heat as efficiently as oil-filled motors, air-filled designs shall not be acceptable.
- B. The pump and motor shall be specifically designed so that they may be operated partially dry or completely submerged in the liquid being pumped. The pump shall not require cooling water jackets. Dependence upon, or use of, water jackets for supplemental cooling shall not be acceptable.
- C. Stators shall be securely held in place with a removable end ring and threaded fasteners so they may be easily removed in the field without the use of heat or a press. Stators held by a heat shrink fit shall not be acceptable. Stators must be capable of being repaired or rewound by a local motor service station. Units that require service only by the factory shall not be acceptable. No special tools shall be required for pump and motor disassembly.
- D. Pump shall be equipped with heat sensors. The heat sensor(s) (one on single phase, two on three phase) shall be a low resistance, bi-metal disc that is temperature sensitive. It (they) shall be mounted directly in the stator and sized to open at 120°C or 130°C and automatically reset at 30-35°C differential. The sensor shall be connected in series with the motor starter coil so that the starter is tripped if a heat sensor opens. The motor starter shall be equipped with overload heaters (2-leg on single phase; 3-leg on three phase) so all normal overloads are protected by external heater block.

3.04 BEARINGS AND SHAFT

- A. An upper radial bearing and a lower thrust bearing shall be required. These shall be heavy-duty single row ball bearings that are permanently lubricated by the dielectric oil that fills the motor housing. Double row, sealed grease packed bearings shall not be acceptable. Bearings that require lubrication according to a prescribed schedule shall not be acceptable. The upper radial bearing shall have a minimum B-10 life at the specified condition of 10,000 hours, and the lower thrust bearing shall have a minimum B-10 life at the specified condition of 10,000 hours. Bearings shall be locally available.
- B. The shaft shall be machined from a solid 303 stainless steel and be a design that is of large diameter with minimum overhang to reduce shaft deflection and prolong bearing life.

3.05 SEALS

- A. The pump shall have two mechanical seals, mounted in tandem, with an oil chamber between the seals. John Crane Type 21 seals shall be used with the rotating seal faces being carbon and the stationary seal faces to be ceramic. The lower seal shall be replaceable without disassembly of the seal chamber and without the use of special tools. Pump-out vanes shall be present on the backside of the impeller to keep contaminants out of the seal area. Units that require the use of tungsten-carbide seals or foreign manufactured seals shall not be acceptable. Seals shall be locally available.
- B. The pump shall be equipped with a 300 series stainless steel shaft sleeve under the lower seal for added protection to reduce costly shaft work in the event of seal failure. The sleeve shall be keyed to the shaft and use O-rings to prevent leakage under the sleeve. Units that do not include a stainless steel shaft sleeve shall not be considered equal or acceptable.
- C. The pump shall be equipped with a seal leak detection probe and warning system. This shall be designed to alert maintenance personnel of lower seal failure without having to take the unit out of service for inspection or requiring access for checking seal chamber oil level and consistency.
- D. There shall be an electric probe or seal failure sensor installed in the seal chamber between the two tandem mechanical seals. If the lower seal fails, contaminants that enter the seal chamber shall be detected by the sensor, which sends a signal to operate the specified warning device.
- E. Units equipped with opposed mechanical seals shall not be acceptable.



3.06 IMPELLER

- A. Impeller shall be of the two-vane, enclosed non-clogging design and have pump-out vanes on the front and backside of the impeller to prevent grit and other materials from collecting in the seal area. Impeller shall not require coating. Because most impeller coatings do not remain beyond the very early life of the impeller, efficiency and other performance data submitted shall be based on performance with an uncoated impeller. Attempts to improve efficiency by coating impeller shall not be acceptable.
- B. Impellers shall be dynamically balanced. The tolerance values shall be as listed below according to the International Standard Organization grade 6.3 for rotors in rigid frames. The tolerance is to be split equally between the two balance planes that are the two impeller shrouds.

RPM	Tolerance
1750	.02 in. – oz./lb. of impeller weight
1150	.026 in. – oz./lb. of impeller weight
870	.03 in. – oz./lb. of impeller weight

- C. The impeller shall be threaded shaft or tapered shaft and key driven. A 300 series stainless steel washer and impeller bolt shall be used to fasten the impeller to the shaft. Straight end shafts for attachment of the impeller shall not be acceptable.

3.07 CASING

- A. The casing shall be of the end suction volute type having sufficient strength and thickness to withstand all stress and strain from service at full operating pressure and load. The casing shall be of the centerline discharge type equipped with an automatic pipe coupling arrangement for ease of installation and piping alignment. The design shall be such that the pumps will be automatically connected to the discharge piping when lowered into position with the guide rails. The casing shall be accurately machined and bored for register fits with the suction and casing covers.
- B. A volute case wear ring shall be provided to minimize impeller wear. The wear ring shall be alloy 230 brass, ASTM-B43 and held by 300 series stainless steel fasteners. The wear ring shall be easily replaceable in the field. Wear rings of any other material shall not be acceptable.

3.09 SERVICEABILITY

- A. The complete rotating assembly shall be capable of being removed from the volute without disturbing the suction piping, discharge piping, and volute. The motor housing, seal housing with seal plate and impeller still attached to the shaft shall be capable of being lifted out of the volute case from the top as one assembly.

3.10 SUPPORT

- A. Though the pump may not require feet to support the unit while installed, the pump volute must have feet to support the unit when removed for service. Units that do not have feet upon which the unit can be supported when removed for service shall not be acceptable.

4.01 TESTING

- A. Commercial testing shall be required and include the following:
1. The pump shall be visually inspected to confirm that it is built in accordance with the specification as to HP, voltage, phase and hertz.
 2. The motor and seal housing chambers shall be hi-potted to test for moisture content and/or insulation defects.
 3. Pump shall be allowed to run dry to check for proper rotation.

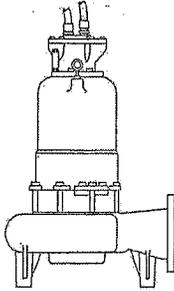


4. Discharge piping shall be attached, the pump submerged in water, and amp readings shall be taken in each leg to check for an imbalanced stator winding. If there is a significant difference in readings, the stator windings shall be checked with a bridge to determine if an unbalanced resistance exists. If so, the stator shall be replaced.
- B. (OPTIONAL) In addition to the above commercial testing, a special megger test shall be performed and include the following:
1. The pump shall be submerged in water and allowed to run at maximum load for 30 minutes.
 2. The pump shall be removed from the water, meggered, dried and the motor housing filled with dielectric oil.
 3. A written report on the above shall be prepared by the test engineer, certified and submitted to the engineer.
- C. (OPTIONAL) A hydrostatic test shall also be performed on the pump. The hydrostatic test shall require that the volute and impeller be removed and a fixture installed to hold the spring and lower mechanical seal in place. A double plate, gasket and through-bolt shall be installed to seal off the inlet. The volute shall then be reinstalled on the pump. A discharge mating flange, gasket, pressure gauge, and fitting for a hydrostatic test pump shall then be installed at the pump discharge. The inlet port, volute and discharge nozzle shall then be pressurized with water and observed for leaks and/or deflection.

Test criteria shall be according to Hydraulic Institute Standards as follows:

1. 150% of the pressure that will occur in that part when the pump is operated at the rated conditions for the given application of the pump, or
 2. 125% of the pressure that would occur in that part when operating at the rated pump speed for the given application, but with the pump discharge valve closed.
 3. Hydrostatic test pressures shall be maintained for not less than 5 minutes.
 4. A written test report shall be prepared, signed and dated by the test engineer. This report shall then be submitted to the engineer.
- D. (OPTIONAL) A nonwitnessed certified Hydraulic Institute performance test shall be performed. This shall include the following:
1. The pump shall be tested at the design point as well as at least seven other points to develop a curve. Data shall be collected to plot the head-capacity curve as well as a kW input and amperage curve.
 2. In making these tests, no minus tolerance or margin shall be allowed with respect to capacity, total head, or efficiency at the specified design condition. Pump shall be held within a tolerance of 10% of rated capacity or at rated capacity with a tolerance of 5% of rated head. The pump shall be tested at shut-off but shall not be plotted and used only as a reference point when plotting the performance curve.
 3. Complete records shall be kept of all information relevant to the test as well as the manufacturer's serial number, type and size of pump as well as any impeller modifications made to meet the design conditions.
 4. A written test report shall be prepared, signed and dated by the test engineer incorporating three curves (head-capacity, kW input, and amperage) along with the pump serial number, test number, date, speed, volts, phase, and impeller diameter. This report shall then be submitted to the engineer.

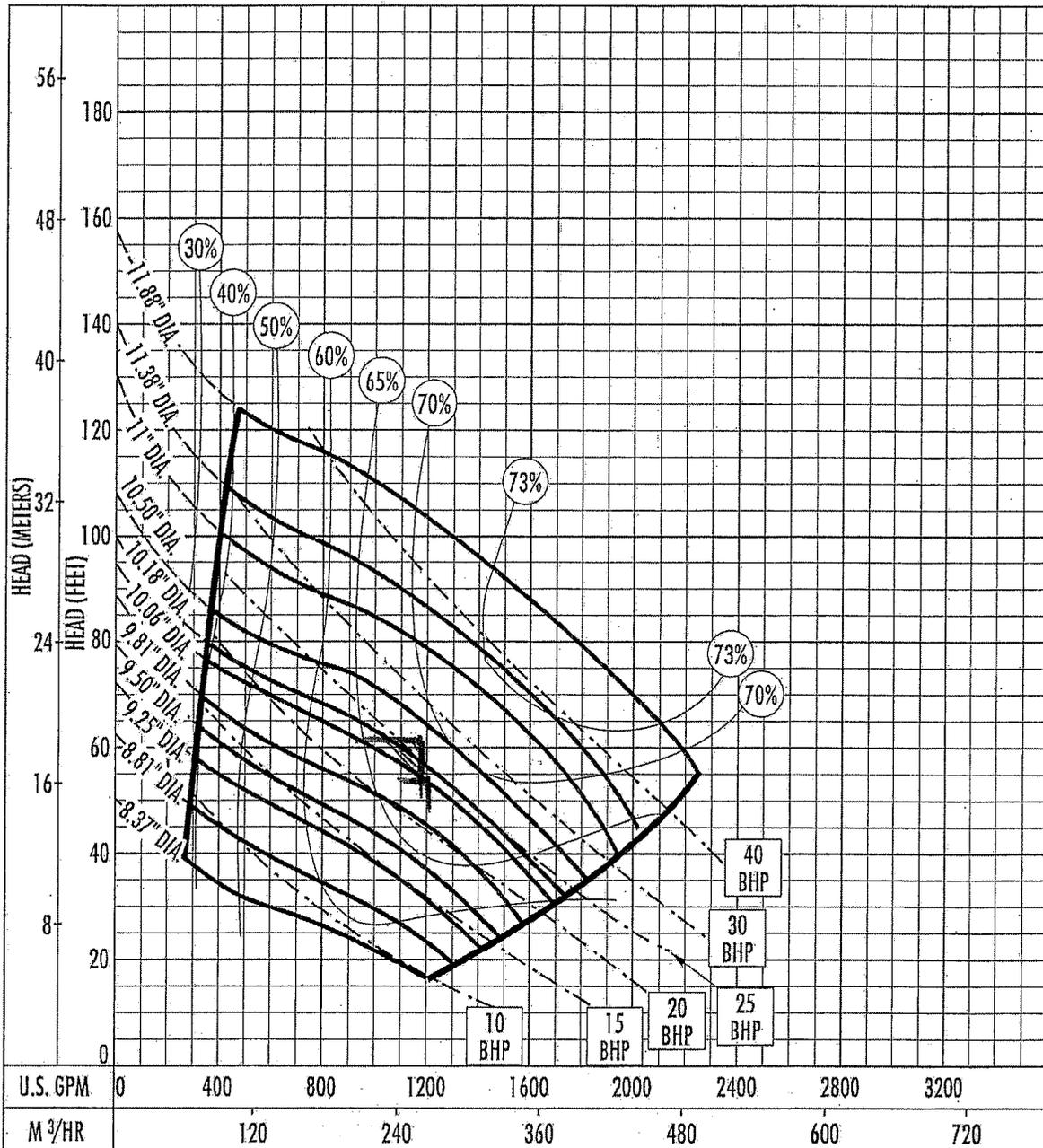




Performance Curve

S6L/S6LX

RPM: **1750** Discharge: **6"** Solids: **3-1/4"**



The curves reflect maximum performance characteristics without exceeding full load (Nameplate) horsepower. All pumps have a service factor of 1.2. Operation is recommended in the bounded area with operational point within the curve limit. Performance curves are based on actual tests with clear water at 70° F. and 1280 feet site elevation.

Conditions of Service:

GPM: 1185 TDH: 62

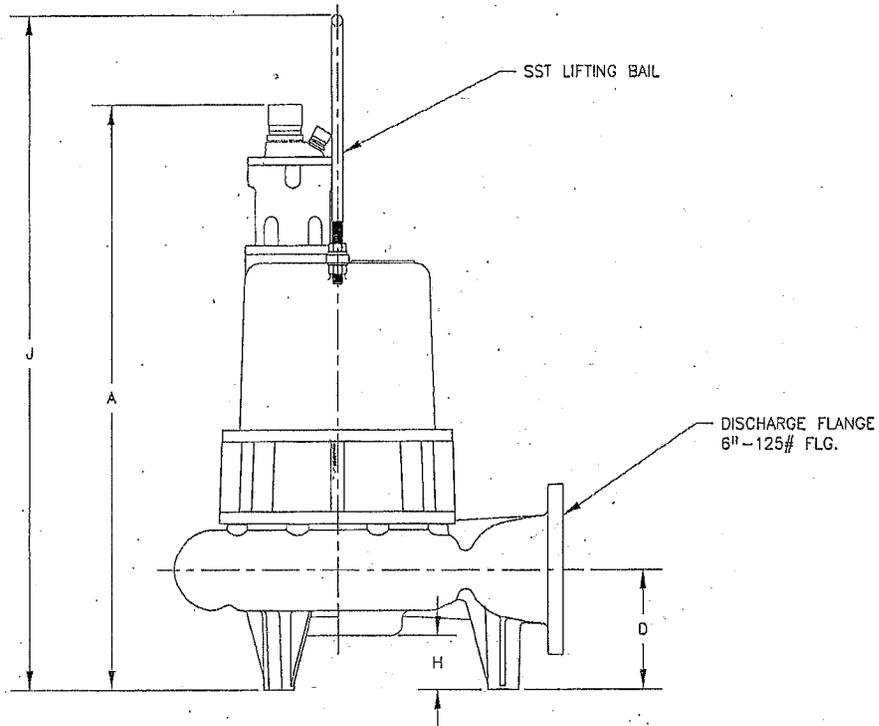
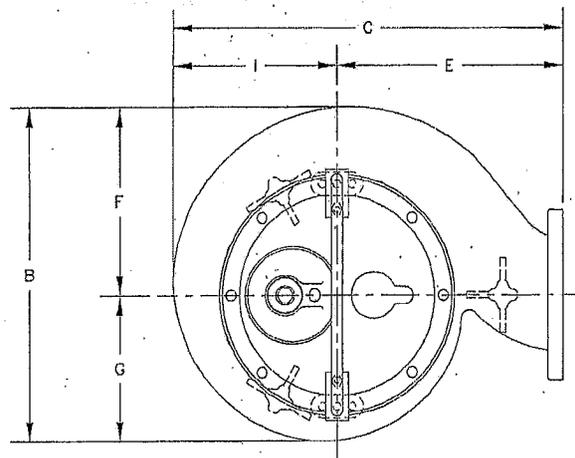


Dimensional Data S6L/S6LX

Section **NON-CLOG** Page **225**

Dated **FEBRUARY 2008**

Supersedes **MAY 2000**



	A	B	C	D	E	F	G	H	I	J
S6L300-2000	37-7/8	21-3/4	25-13/16	7-3/4	15	12-1/4	9-1/2	3-1/2	10-13/16	43-11/16
S6L2500-5000	42-5/8	21-3/4	25-13/16	7-3/4	15	12-1/4	9-1/2	3-1/2	10-13/16	48-7/16
S6LX	40-7/16	21-3/4	25-13/16	7-3/4	15	12-1/4	9-1/2	3-1/2	10-13/16	46-1/4

ALL DIMENSIONS IN INCHES
NOTE: CASTING DIMENSIONS MAY VARY $\pm 1/8$ "



Electrical Data

S6L/S6LX

MODEL: S6L & S6LX—Solids Handling Sewage Pump

R.P.M.	1750			
MOTOR TYPE	ENCLOSED, OIL COOLED INDUCTION, VFD SUITABLE			
MOTOR DESIGN NEMA TYPE	B (3Ø)			
GENERAL INSULATION CLASS	H			
STATOR WINDING CLASS	H			
MAXIMUM STATOR TEMPERATURE	356°F (180°C)			
MOTOR PROTECTION	BI-METALLIC, TEMPERATURE SENSITIVE DISC, SIZED TO OPEN AT 130°C AND AUTOMATICALLY RESET @ 96-68°C DIFFERENTIAL, ONE IN SINGLE PHASE, TWO IN THREE PHASE			
ELECTRICAL RATINGS	HEAT SENSOR	24VDC 5AMPS	115VAC 5AMPS	230VAC 5AMPS
	SEAL FAIL	300VAC 5mA		
	VOLTAGE TOLERANCE	±10%		

HP	VOLTAGE	PHASE	NEC CODE	SF	FULL LOAD AMPS	SF AMPS	LOAD BETR AMPS	RUN KW	START KVA	RUN KVA	MTR EFF. @ SF	MTR EFF. 100% FL	MTR EFF. 75% FL	MTR EFF. 50% FL	PWR. FACT. @ SF	PWR. FACT. 100% FL	PWR. FACT. 75% FL	PWR. FACT. 50% FL
10	200	3	N	1.2	35.9	40.6	334	9.5	116	12.4	.81	.79	.74	.65	.79	.77	.72	.64
	230				31.2	35.3	290											
	460				15.6	17.7	145											
	575				12.5	14.1	116											
15	200	3	J	1.2	48.3	56.3	334	13.5	116	16.7	.84	.83	.80	.74	.82	.81	.78	.72
	230				46	52	290											
	460				23	26	145											
	575				16.8	19.6	116											
20	200	3	G	1.2	62.5	75	334	17.8	116	21.6	.84	.84	.83	.79	.82	.82	.81	.77
	230				54.4	65.2	290											
	460				27.2	32.6	145											
	575				21.7	26.1	116											
25	200	3	J	1.2	78.3	92.2	575	21.7	200	27.1	.87	.86	.84	.70	.81	.80	.77	.70
	230				68	80	500											
	460				34	40	250											
	575				27.2	32.1	200											
30	200	3	H	1.2	92.2	110.7	575	25.7	200	31.9	.87	.87	.86	.83	.81	.81	.79	.73
	230				80.2	96.3	500											
	460				40.1	48.1	250											
	575				32.1	38.5	200											
40	230	3	G	1.2	105	128.3	580	35.3	230	41.8	.83	.84	.83	.79	.85	.86	.86	.82
	460				52.5	64.1	290											
	575				42	51.3	232											
50	230	3	G	1.2	141	197	690	46.7	275	55.1	.75	.80	.82	.79	.81	.83	.85	.83
	460				70.5	93.5	345											
	575				56.4	78.8	276											



**Technical
Data****S6LX**Section **SOLIDS HANDLING** Page

423

Dated **AUGUST 2010****MODEL: S6LX — Hazardous Location Solids Handling
Sewage Pumps****Physical Data:**

DISCHARGE SIZE	6"
IMPELLER TYPE	BALANCED, ENCLOSED, 2 VANE
CABLE LENGTH	35' STANDARD 50' OPTIONAL
PAINT	PAINTED AFTER ASSEMBLY. DARK GREEN, WATER REDUCIBLE ENAMEL, ONE COAT, AIR DRIED.

Liquid Handling:

SOLIDS SIZE	3-1/4"
MAXIMUM LIQUID TEMP.	104°F LABELED / 140°F UNLABELED
ACCEPTABLE PH RANGE	6 - 9
SPECIFIC GRAVITY	0.9 - 1.1
VISCOSITY	28 - 85 SSU

Temperature:

MAXIMUM STATOR	311°F
OIL FLASH POINT	390°F
HEAT SENSOR	Open: 275°F MAX./257°F MIN. Closed: 205°F MAX./154°F MIN.

Technical Data:

POWER CORD TYPE	STW-A WATER RESISTANT 600V, 60°C				
SENSOR CORD TYPE	18-5 STW-A WATER RESISTANT 600V, 60°C, 5.5 AMPS				
MATERIALS OF CONSTRUCTION	MOTOR HOUSING	CAST IRON	ASTM	A-48	CLASS 30
	CASING	CAST IRON	ASTM	A-48	CLASS 30
	IMPELLER	DUCTILE IRON	ASTM	A-536	
	CASING WEAR RING	BRONZE	ASTM	B-584-836	ALLOY 115
	MOTOR SHAFT	416 STAINLESS STEEL			
	HARDWARE	300 SERIES STAINLESS STEEL			
	"O" RINGS	BUNA N			
MECHANICAL SEALS	Standard:	UPPER AND LOWER CARBON / CERAMIC / BUNA-N, TYPE 21			
	Optional:	LOWER TUNGSTEN CARBIDE / TUNGSTEN CARBIDE / BUNA-N, TYPE 21			
	Optional:	LOWER SILICON CARBIDE / SILICON CARBIDE / BUNA-N, TYPE 21			
UPPER BEARING	(RADIAL) SINGLE ROW — BALL				
LOWER BEARING	(THRUST) SINGLE ROW — BALL				



BIDDING DOCUMENTS

PROPOSAL (BID)

The Bidder agrees to the construction of **POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES**, for the City of San Diego, in accordance with these contract documents for the prices listed below. The Bidder guarantees the Contract Price for a period of 120 days (90 days for federally funded contracts and contracts valued at \$500,000 or less) from the date of Bid opening to Award of the Contract. The duration of the Contract Price guarantee shall be extended by the number of days required for the City to obtain all items necessary to fulfill all conditions precedent e.g., bond and insurance.

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
BASE BID							
1	1	LS	2-4.1	238160	Bonds (Payment and Performance)	 	\$
2	1	AL	7-5.3	238210	Building Permits	 	\$10,000.00
3	1	LS	9-3.1	238210	Field Construction	 	\$
4	1	AL	9-3.5	238210	Field Orders	 	\$65,000.00
5	1	LS	801-9.4	541330	Water Pollution Control Program Development	 	\$
6	1	LS	801-94	237990	Water Pollution Control Program Implementation	 	\$
ESTIMATED TOTAL BASE BID:							\$

BIDDING DOCUMENTS

TOTAL BID PRICE FOR BID (Items 1 through 6 inclusive) amount written in words:

The Bid shall contain an acknowledgment of receipt of all addenda, the numbers of which shall be filled in on the Bid form.

List the Addenda received and being acknowledged: _____

If an addendum or addenda has been issued by the City and not noted as being received by the Bidder, this proposal shall be rejected as being **non-responsive**.

The names of all persons interested in the foregoing proposal as principals are as follows:

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, state secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if Bidder or other interested person is an individual, state first and last names in full.

Bidder: _____

Title: _____

Business Address: _____

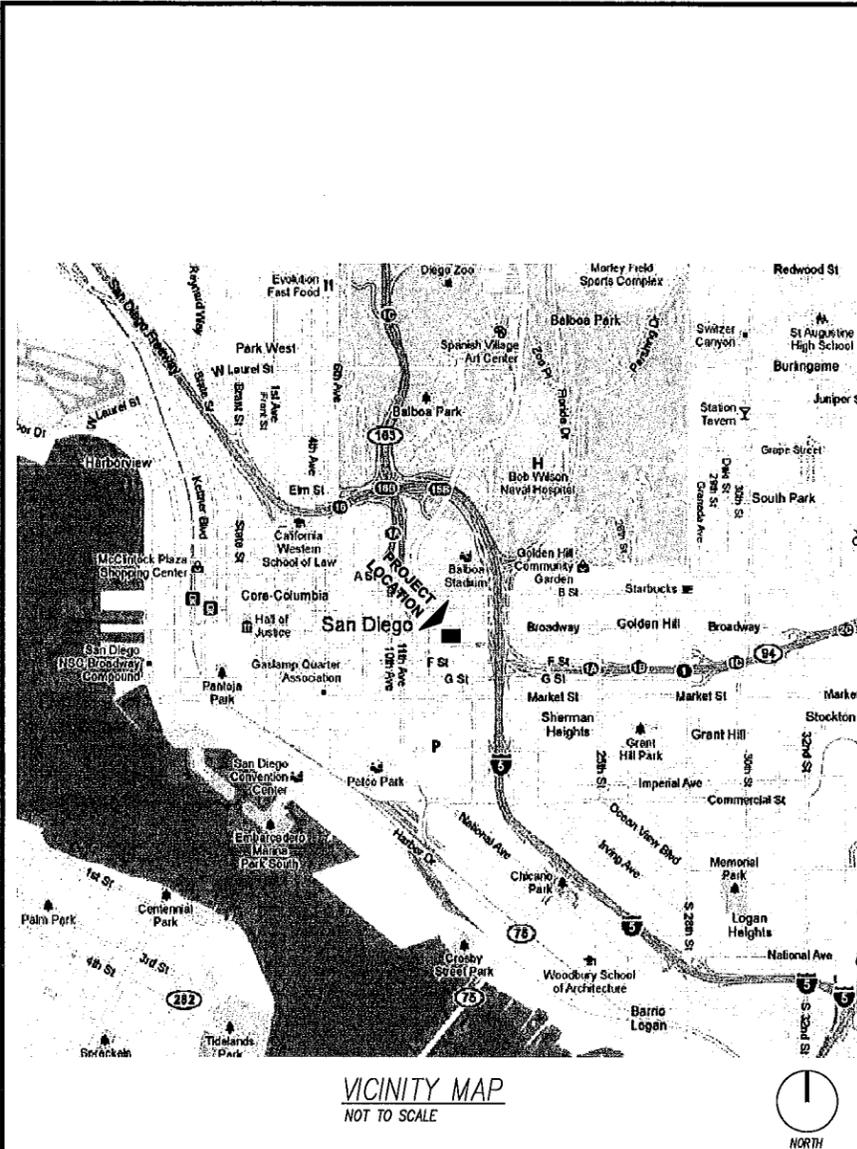
Place of Business: _____

Place of Residence: _____

Signature: _____

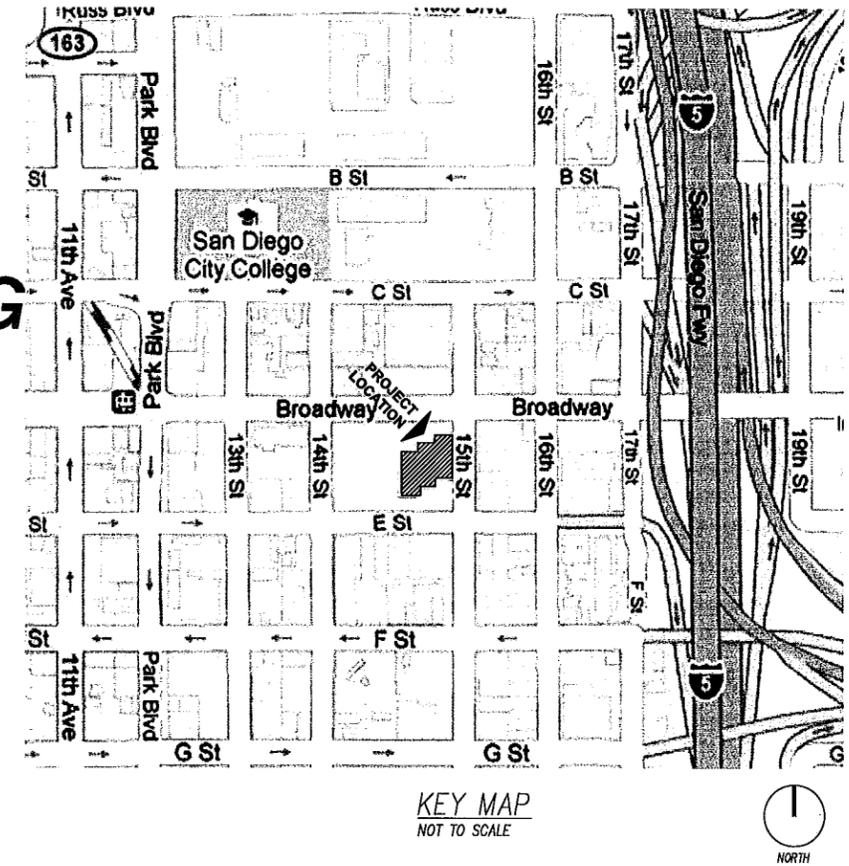
NOTES:

- A. The City shall determine the low Bid based on the Base Bid alone.
- B. Prices and notations shall be in ink or typewritten. All corrections (which have been initiated by the Bidder using erasures, strike out, line out, or "white-out") shall be typed or written in with ink adjacent thereto, and shall be initialed in ink by the person signing the bid proposal.
- C. Failure to initial all corrections made in the bidding documents shall cause the Bid to be rejected as **non-responsive** and ineligible for further consideration.
- D. Blank spaces must be filled in, using figures. Bidder's failure to submit a price for any Bid item that requires the Bidder to submit a price shall render the Bid **non-responsive** and shall be cause for its rejection.
- E. Unit prices shall be entered for all unit price items. Unit prices shall not exceed two (2) decimal places. If the Unit prices entered exceed two (2) decimal places, the City will only use the first two digits after the decimal points without rounding up or down.
- F. All extensions of the unit prices bid will be subject to verification by the City. In the case of inconsistency or conflict between the product of the Quantity x Unit Price and the Extension, the product shall govern.
- G. In the case of inconsistency or conflict, between the sums of the Extensions with the estimated total Bid, the sum of the Extensions shall govern.
- H. Bids shall not contain any recapitulation of the Work. Conditional Bids will be rejected as being **non-responsive**. Alternative proposals will not be considered unless called for.



SDPD HEADQUARTERS LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

FEBRUARY 2012

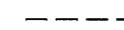
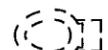


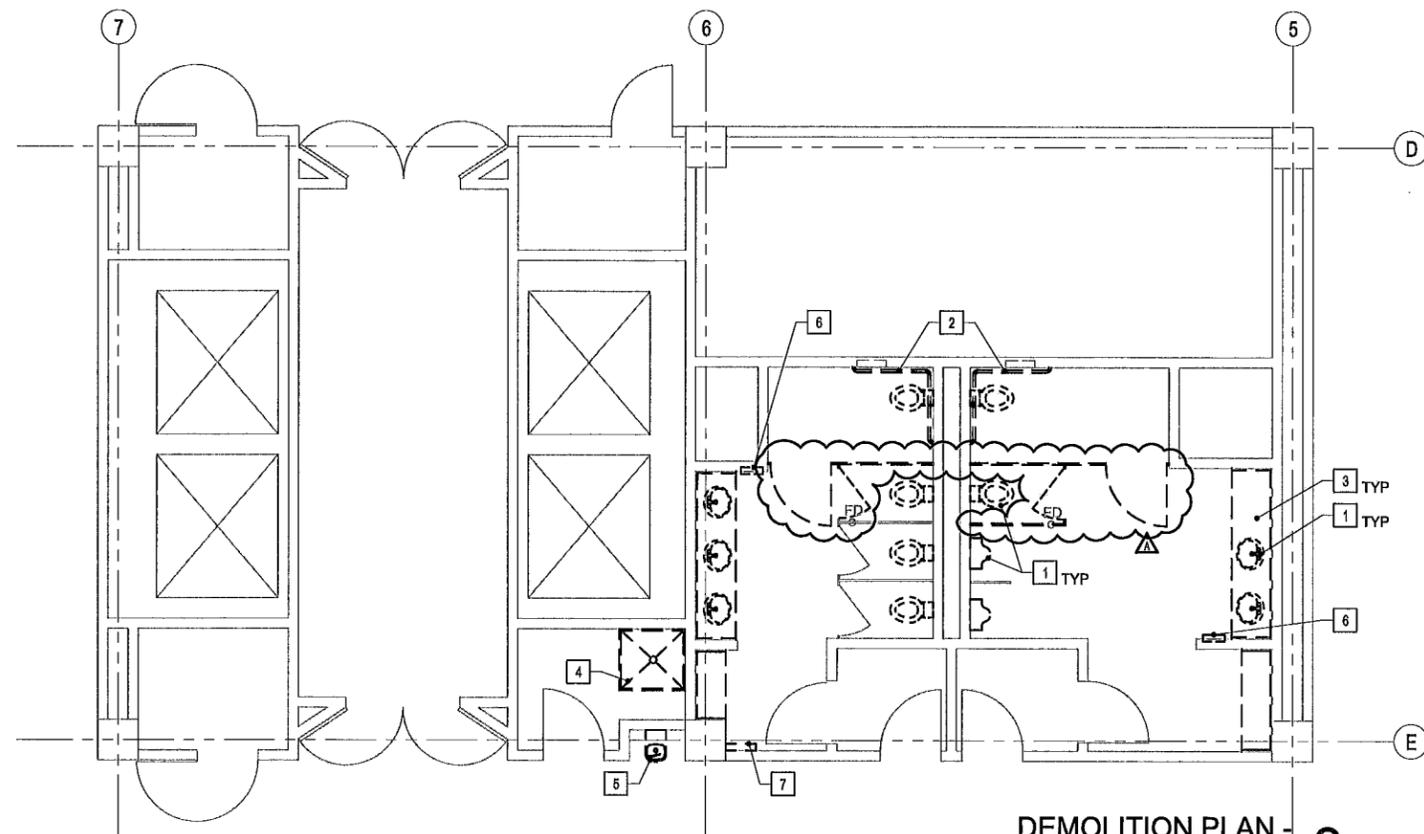
G-1		FUNDING OP/SAP		SPEC. NO.	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES					
COVER SHEET					
CITY OF SAN DIEGO, CALIFORNIA				W.B.S. B-00952, B-10006 B-10010	
SHEET 1 OF 60 SHEETS					
CONSTRUCTION CHANGE / ADDENDUM		CONSULTANT			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.	CITY OF SAN DIEGO PUBLIC WORKS PROJECT	
A	4/26/12	12, 16, 21, 25			
SCALE		HORIZONTAL		NO SCALE	
		VERTICAL		NO SCALE	
				WARNING IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	
				APPROVED BY: _____ FOR CITY ENGINEER CHECKED BY: _____ CONSTRUCTION ENGINEER CHECKED BY: _____ INSPECTOR	
				DESCRIPTION: _____ JOB: _____ MOA: _____ MOA: _____ AS-BUILTS CONTRACTOR: _____ INSPECTOR: _____	
				APPROVED: _____ DATE: 02/14/2012 APPROVED: _____ DATE: 04/26/2012 DATE STARTED: _____ DATE COMPLETED: _____	
				SECTION HEAD: _____ PROJECT MANAGER: _____ CCS27 COORDINATE: _____ CCS83 COORDINATE: _____ 36392-1-D	

NOTES

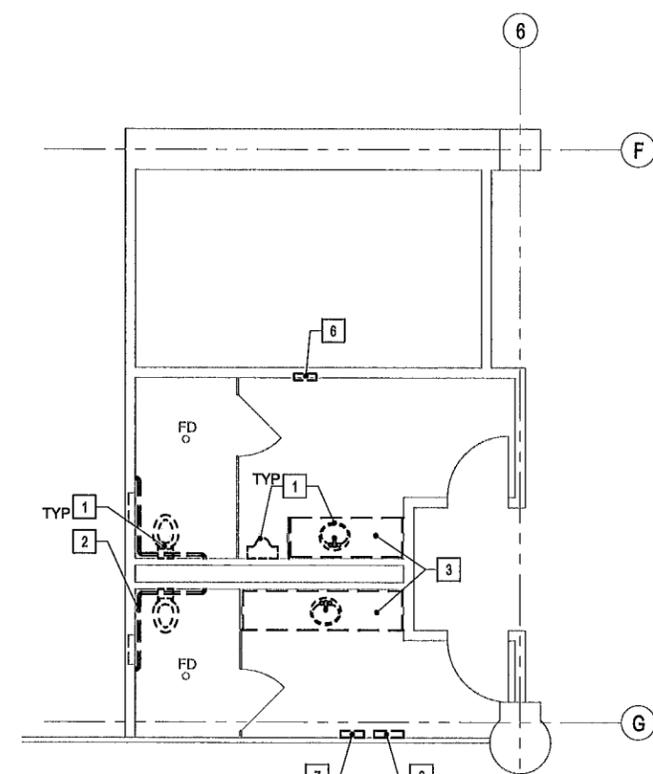
- 1 REMOVE EXISTING RESTROOM FIXTURES, PER PLUMBING, TYP
- 2 REMOVE EXISTING GRAB BARS
- 3 REMOVE EXISTING PLASTIC LAMINATE COUNTERTOP AND BACKSLASH
- 4 REMOVE EXISTING MOP SINK AND FRP BACKSLASH, PER PLUMBING
- 5 REMOVE DRINKING FOUNTAIN, PER PLUMBING DRAWINGS
- 6 REMOVE EXISTING PAPER TOWEL/TRASH RECEPTACLE UNITS
- 7 REMOVE EXISTING SANITARY NAPKIN DISPENSERS

SYMBOLS LEGEND

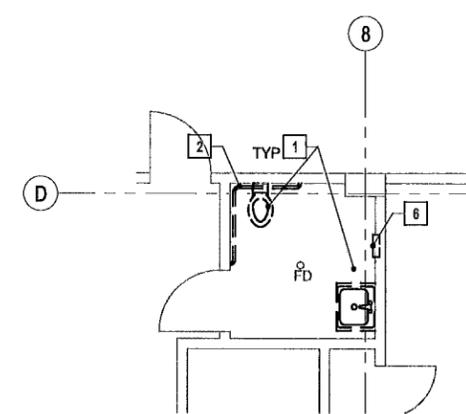
-  TO BE REMOVED
-  LAVATORY TO BE REMOVED
-  URINAL TO BE REMOVED
-  WATER CLOSET TO BE REMOVED



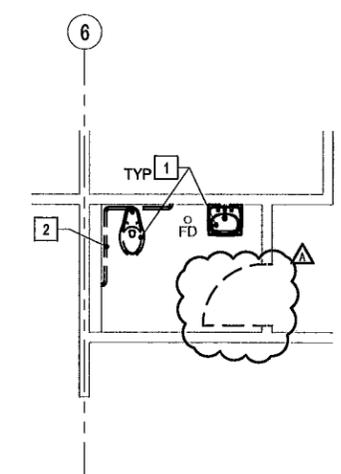
DEMOLITION PLAN - BUILDING CORE RESTROOM (TYP AT LEVELS 1, 2, 4, 5, 6, 7) 3
SCALE: 1/4" = 1'-0"



DEMOLITION PLAN - LEVEL 1 PUBLIC RESTROOMS 1
SCALE: 1/4" = 1'-0"



DEMOLITION PLAN - LEVEL 1 WATCH COMMANDER'S RESTROOM 4
SCALE: 1/4" = 1'-0"



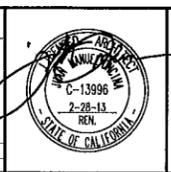
DEMOLITION PLAN - LEVEL P-1 UNISEX RESTROOM 2
SCALE: 1/4" = 1'-0"

FUNDING CIP/SAP		SPEC. NO.		D2	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES					
DEMOLITION PLANS - RESTROOMS					
CITY OF SAN DIEGO, CALIFORNIA				W.B.S. B-00952, B-10008	
SHEET 12 OF 66 SHEETS				B-10010	
FOR CITY ENGINEER		DATE		SECTION HEAD	
DESCRIPTION	BY	APPROVED	DATE	FILED	PROJECT MANAGER
OSD BACKCHECK	MOA		02/14/2012		
CHANGE 'A'	MOA		04/26/2012		
CONSTRUCTION ENGINEER	CWADEN		5/7/12		CCS27 COORDINATE
INSPECTOR					CCS83 COORDINATE
AS-BUILTS					
CONTRACTOR		DATE STARTED			36392-12-D
INSPECTOR		DATE COMPLETED			

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 MANUEL ONCINA ARCHITECTS INC.
 ARCHITECTURE PLANNING INTERIORS
 614 Pennsylvania Ave.
 San Diego, CA 92103
 619/295-4900 P11
 619/295-4905 FX
 www.manueloncina.com

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT



WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:	FOR CITY ENGINEER	CONSTRUCTION ENGINEER	INSPECTOR

CHANGE 'A': ADD DEMO PARTITIONS, ADD DEMO DOOR AND FRAME

NOTES

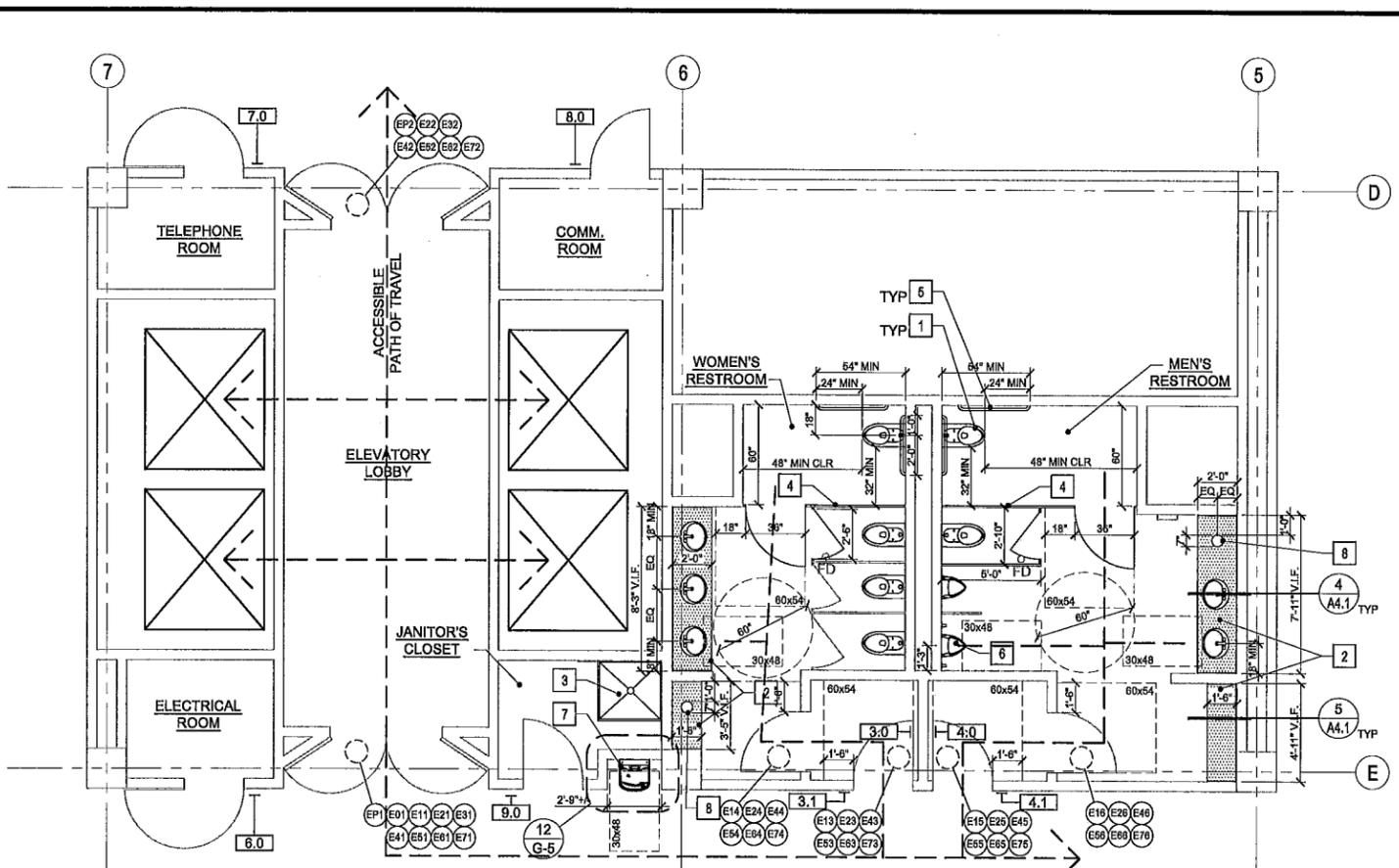
- 1 NEW RESTROOM FIXTURES, PER PLUMBING PLAN, TYP
- 2 NEW SOLID SURFACE COUNTERTOP AND BACKSPASH, FINISH PER SCHEDULE
- 3 NEW MOP SINK PER PLUMBING, NEW SOLID SURFACE WALL COVERING PER DETAIL 9/A4.1, PER PLUMBING
- 4 NEW TOILET PARTITION, FINISH TO MATCH EXISTING
- 6 INSTALL GRAB BAR PER DETAILS 2/G-6, 1/A4.1 AND NOTES ON SHEET G-4
- 6 INSTALL ACCESSIBLE URINAL AND GRAB BARS PER ELEVATIONS AND NOTES ON SHEET G-4 AND DETAIL 1/A4.1, INSTALL NEW BLOCKING AS REQ'D
- 7 NEW DRINKING FOUNTAIN, PER PLUMBING AND DETAIL 1/A4.2
- 8 CORE 7" DIA OPENING IN NEW SOLID SURFACE COUNTER FOR TRASH WASTE, 1/8" RADIUS AT TOP EDGE
- 9 NEW DOOR AND FRAME PER SCHEDULE AND SPECS

GENERAL NOTES

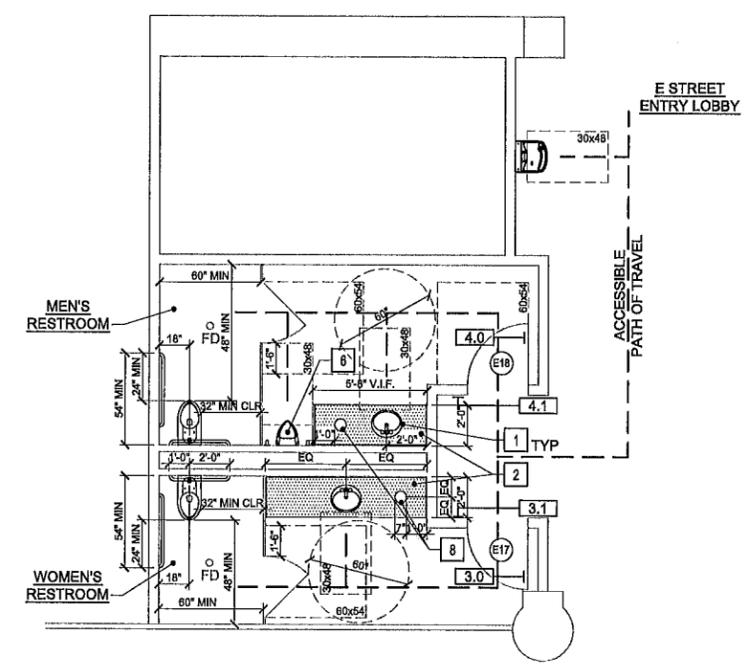
1. PATCH, REPAIR AND RESTORE TO MATCHING CONDITIONS AT ANY DAMAGED AREA BEHIND OR SURROUNDING ITEMS THAT ARE REMOVED UNLESS OTHERWISE NOTED.
2. ALL RESTROOM ENTRY DOORS AND ADJACENT WALL TO RECEIVE NEW SIGNAGE, PER DETAILS 6-9,11/G-5 AND SIGNAGE SCHEDULE, UNLESS OTHERWISE NOTED.
3. RESTROOM INTERIOR ELEVATIONS PER SHEETS A3.0 AND A3.1
4. ALL RESTROOM AREAS TO SLOPE TO DRAIN AT NO GREATER THAN 1.5% IN ANY DIRECTION.
5. ALL PARTITION DOORS TO ACCESSIBLE RESTROOM STALLS TO HAVE U-SHAPED DOOR PULLS INSTALLED ON INTERIOR AND EXTERIOR SIDES OF DOOR PER DETAIL 4/A4.2 AND INTERNATIONAL SYMBOL OF ACCESSIBILITY SIGNAGE APPLIED TO EXTERIOR SIDE.

SYMBOL LEGEND

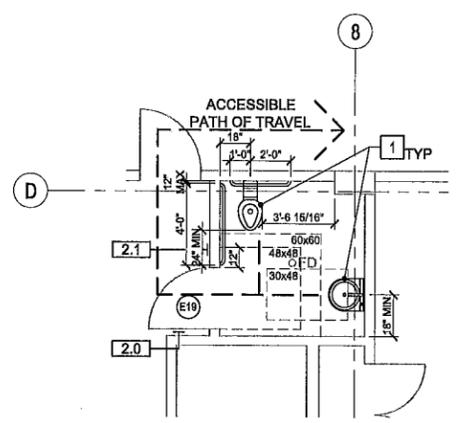
- ACCESSIBLE PATH OF TRAVEL
- ⊗ ACCESSIBLE ELEVATOR, TYP OF 4
- ♿ ISA AT ACCESSIBLE PARKING SPACE, 4'-6"x4'-6" PER SDM-117
- 1.0 SIGNAGE PER SCHEDULE, SHEET A4.0



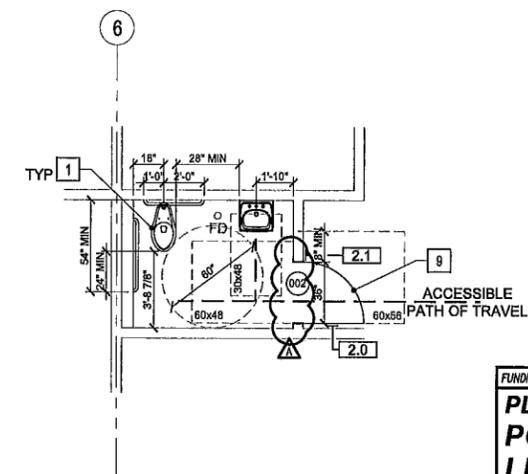
FLOOR PLAN - BUILDING CORE RESTROOM 3
(FLOORS 1, 2, 4-7)
SCALE: 1/4" = 1'-0"



FLOOR PLAN - LEVEL 1 PUBLIC RESTROOM 1
SCALE: 1/4" = 1'-0"



FLOOR PLAN - LEVEL 1 WATCH COMMANDER'S RESTROOM 4
SCALE: 1/4" = 1'-0"



FLOOR PLAN - LEVEL P-1 UNISEX RESTROOM 2
SCALE: 1/4" = 1'-0"

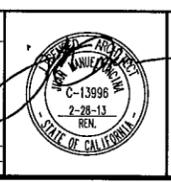
FUNDING CIP/SAP		SPEC. NO.		A2.1
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
RESTROOM IMPROVEMENT PLANS				
CITY OF SAN DIEGO, CALIFORNIA SHEET # OF 66 SHEETS			W.B.S. B-00952, B-10008 B-10010	
APPROVED BY:	DATE:	SECTION HEAD:		
FOR CITY ENGINEER	5/17/12	[Signature]		
CHECKED BY:	DESCRIPTION	BY	APPROVED	DATE
[Signature]	DSD BACKCHECK	MOA	[Signature]	02/14/2012
	CHANGE 'A'	MOA	[Signature]	04/26/2012
	AS-BUILTS			
CONTRACTOR:	INSPECTOR:	DATE STARTED:	DATE COMPLETED:	36392-16-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

MANUEL ONCINA ARCHITECTS INC.
ARCHITECTURE PLANNING INTERIORS
814 Pomona Way
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619-295-4006 F/X
www.oncina.com

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT

CITY OF SAN DIEGO - STATE OF CALIFORNIA

WARNING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY: [Signature]

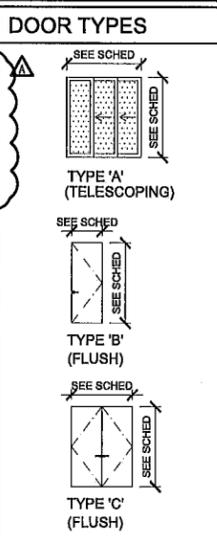
FOR CITY ENGINEER

CHECKED BY: [Signature]

CONSTRUCTION ENGINEER

INSPECTOR

DOOR SCHEDULE											
NO.	SIZE	DOOR		FRAME			RATING	HDWR	DETAILS		COMM.
		TYPE	MAT'L	MAT'L	FIN.	ANOD			ANOD	ANOD	
201	6'-0" x 8'-0" x 1-3/4"	A	ANOD	ANOD	ANOD	N/A	-	1/A3.0	2/A3.0	1,2,3,4,6	
202	6'-0" x 8'-0" x 1-3/4"	A	ANOD	ANOD	ANOD	N/A	-	1/A3.0	2/A3.0	1,2,3,4,6	
203	6'-0" x 8'-0" x 1-3/4"	A	ANOD	ANOD	ANOD	N/A	-	1/A3.0	2/A3.0	1,2,3,4,6	
002	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	1	-	5,6,7	
EP1	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
EP2	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E01	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E11	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E12	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E13	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E14	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E15	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E16	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E17	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E18	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E19	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E21	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E22	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E23	6'-0" x 7'-0" x 1-3/4"	A	ANOD	ANOD	ANOD	N/A	-	-	-	5	
E24	6'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E25	6'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E26	6'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E27	6'-0" x 8'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E31	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E32	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E33	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E34	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E35	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E36	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E37	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E38	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E39	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E41	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E42	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E43	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E44	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E45	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E46	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E51	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E52	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E53	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E54	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E55	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E56	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E61	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E62	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E63	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E64	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E65	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E66	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E71	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E72	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5	
E73	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E74	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E75	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	
E76	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5	



DOOR SCHEDULE LEGEND

- ALUM = EXTRUDED ALUMINUM
- ANOD = ANODIZED BRONZE
- HM = HOLLOW METAL
- PT = PAINT

DOOR SCHEDULE COMMENTS

1. GLASS COLOR AND TINT TO MATCH EXISTING
2. DOOR TO TELESCOPE IN DIRECTION PER PLAN.
3. APPLY INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) DECAL AT EACH ACCESSIBLE ENTRANCE. 6"x6", PROPORTIONS PER DETAIL 12/G-6
4. HARDWARE PER MANUFACTURER.
5. EXISTING INSTALLATION. HARDWARE SET, HEAD AND SILL DETAILS N/A. ADJUST EACH DOOR WITH EXISTING CLOSER FOR SMOOTH OPERATION AND TO MEET MAX FORCE REQUIREMENTS OF 5LBF FOR OPERATION.
6. FIELD MEASURE ROUGH OPENING BEFORE ORDERING.
7. NEW HOLLOW METAL DOOR FRAME. INSTALL WITH RETROFIT WALL ANCHORS.

SIGNAGE SCHEDULE						
SIGN #	DESCRIPTION	LEVEL	SIGN TYPE	QTY	TEXT	DETAIL
1.0	ACCESSIBLE PARKING	P-2(x4)	ACCESSIBLE PARKING	4	ISA, "PARKING ONLY", "\$250 FINE"	10/A4.1
1.1	ACCESSIBLE VAN PARKING	P-2(x4), 1	VAN ACCESS. PARKING	5	ISA, "PARKING ONLY", "VAN ACCESSIBLE", "\$250 FINE"	11/A4.1
2.0	UNISEX RESTROOM	P-1, 1	DOOR PLAQUE	2	MALE/FEMALE SYMBOL, "RESTROOM"	7/G-6
2.1	UNISEX RESTROOM	P-1, 1	TACTILE SIGNAGE	2	MALE/FEMALE SYMBOL, ISA, "RESTROOM"	9/G-6
2.2	UNISEX RESTROOM	7	DOOR PLAQUE	1	MALE/FEMALE SYMBOL, "RESTROOM" (NO ISA)	7/G-6 (SIM)
2.3	UNISEX RESTROOM	7	RESTROOM WALL I.D.	1	MALE/FEMALE SYMBOL, "RESTROOM" (NO ISA)	9/G-6 (SIM)
3.0	WOMEN'S RESTROOM	1(x2), 2, 3(x2), 4, 5, 6, 7(x2)	DOOR PLAQUE	10	FEMALE SYMBOL, "WOMEN"	8/G-6
3.1	WOMEN'S RESTROOM	1(x2), 2, 3(x2), 4, 5, 6, 7(x2)	TACTILE SIGNAGE	10	FEMALE SYMBOL, ISA, "WOMEN"	8/G-6
3.2	WOMEN'S RESTROOM	7	DOOR PLAQUE	1	FEMALE SYMBOL, "WOMEN" (NO ISA)	6/G-6 (SIM)
3.3	WOMEN'S RESTROOM	7	RESTROOM WALL I.D.	1	FEMALE SYMBOL, "WOMEN" (NO ISA)	8/G-6 (SIM)
4.0	MEN'S RESTROOM	1(x2), 2, 3(x2), 4, 5, 6, 7(x2)	DOOR PLAQUE	10	MALE SYMBOL, "MEN"	8/G-6
4.1	MEN'S RESTROOM	1(x2), 2, 3(x2), 4, 5, 6, 7(x2)	TACTILE SIGNAGE	10	MALE SYMBOL, ISA, "MEN"	8/G-6
4.2	MEN'S RESTROOM	7	DOOR PLAQUE	1	MALE SYMBOL, "MEN" (NO ISA)	6/G-6 (SIM)
4.3	MEN'S RESTROOM	7	RESTROOM WALL I.D.	1	MALE SYMBOL, "MEN" (NO ISA)	8/G-6 (SIM)
5.0	INTL SYMBOL OF ACCESSIBILITY (ISA)	1(x2), 2, 3(x2), 4, 5, 6, 7(x2)	ISA AT STALL DOOR	10	ISA, NO COPY	12/G-6
5.1	INTL SYMBOL OF ACCESSIBILITY (ISA)	1, 2(x4)	ISA AT ENTRANCE	5	ISA, NO COPY	12/G-6
6.0	CORE ELECTRICAL ROOM	P-2, P-1, 1, 2, 3, 4, 5, 6, 7	TACTILE ROOM I.D.	9	"ELECTRICAL ROOM"	10/G-6
7.0	CORE TELEPHONE ROOM	P-2, P-1, 1, 2, 3, 4, 5, 6, 7	TACTILE ROOM I.D.	9	"TELEPHONE ROOM"	10/G-6
8.0	CORE COMMUNICATIONS ROOM	P-2, P-1, 1, 2, 3, 4, 5, 6, 7	TACTILE ROOM I.D.	9	"COMMUNICATIONS ROOM"	10/G-6
9.0	CORE JANITOR CLOSET	P-1, 1, 2, 3, 4, 5, 6, 7	TACTILE ROOM I.D.	8	"JANITOR"	10/G-6
10.0	FIRE CONTROL ROOM	2	TACTILE ROOM I.D.	1	"FIRE CONTROL ROOM"	10/G-6
11.0	UPS ROOM	P-2	TACTILE ROOM I.D.	1	"ELECTRICAL UPS ROOM"	10/G-6
12.0	GENERATOR ROOM	P-2	TACTILE ROOM I.D.	1	"GENERATOR"	10/G-6
13.0	CO-GENERATOR ROOM	P-2	TACTILE ROOM I.D.	1	"CO-GENERATOR"	10/G-6
14.0	ELECTRICAL ROOM	P-1	TACTILE ROOM I.D.	1	"ELECTRICAL ROOM"	10/G-6

SIGNAGE SCHEDULE NOTES

1. ALL SIGNAGE TO COMPLY WITH CURRENT CODE REQUIREMENTS AND NOTES ON SHEET G-3 AND G-4.
2. INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) SIGNAGE TO BE PROVIDED AT ALL ACCESSIBLE ENTRANCES TO BUILDING AND PARTITION DOORS TO ACCESSIBLE STALLS IN ACCESSIBLE RESTROOMS.
3. INSTALL TACTILE WALL SIGNAGE AND RESTROOM DOOR PLAQUES IN LOCATIONS INDICATED PER DETAIL 11/G-6.

ROOM NAME	COUNTERTOP		WALL	FLOOR	CEILING
	MEN'S	WOMEN'S			
LEVEL P-1 - UNISEX RESTROOM	N/A	N/A	EXIST	EXIST	EXIST
LEVEL 1 - WATCH COMMANDER'S RESTROOM	N/A	N/A	EXIST	EXIST	EXIST
LEVEL 1 - PUBLIC RESTROOMS	SS-1	SS-1	EXIST	EXIST	EXIST
LEVEL 1 - BUILDING CORE RESTROOMS	SS-1	EXIST	EXIST	EXIST	EXIST
LEVEL 2 - BUILDING CORE RESTROOMS	EXIST	EXIST	EXIST	EXIST	EXIST
LEVEL 3 - LOCKER ROOM/RESTROOMS	SS-2	SS-2	EXIST	EXIST	EXIST
LEVEL 4 - BUILDING CORE RESTROOMS	EXIST	EXIST	EXIST	EXIST	EXIST
LEVEL 5 - BUILDING CORE RESTROOMS	SS-2	SS-2	EXIST	EXIST	EXIST
LEVEL 6 - BUILDING CORE RESTROOMS	SS-1	SS-1	EXIST	EXIST	EXIST
LEVEL 7 - BUILDING CORE RESTROOMS	SS-1	SS-1	EXIST	EXIST	EXIST
LEVEL 7 - COMMANDER'S OFFICE RESTROOMS	SS-1	SS-1	EXIST	EXIST	EXIST
LEVEL 7 - CHIEF'S OFFICE RESTROOM		SS-1	EXIST	EXIST	EXIST
ALL LEVELS - JANITOR'S CLOSET (SEE 9/A4.1)	N/A	N/A	SS-1	EXIST	EXIST

INTERIOR FINISH SCHEDULE LEGEND

- EXIST = EXISTING / PATCH TO MATCH EXISTING
- SS-1 = 'MEGANITE' SOLID SURFACE, COLOR: WINTER BOULDER 800
- SS-2 = 'MEGANITE' SOLID SURFACE, COLOR: SOLITUDE GRANITE 693

RESTROOM ACCESSORY SCHEDULE				
ITEM #	DESCRIPTION	MODEL #	COM.	QTY
A	WALL GRAB BAR, 36"L	B-6806x36	1,6	18
B	WALL GRAB BAR, 48"L	B-6806x48	1,6	20
C	WALL GRAB BAR, 24"L	B-6806x24	1,6	16
D	WALL GRAB BAR, 30"L	B-6806x30	1,6	2
E	P-TRAP, WATER SUPPLY / VALVE COVERS - 3 PART SET	396 WHITE	2,3	V.I.F
F	FOLDABLE SHOWER SEAT, SOLID PHENOLIC	B-517	1	2
G	MIRROR W/ SS FRAME - SIZE PER INTERIOR ELEVATIONS		4,5	7
H	LOOP DOOR PULL AT EACH ACCESSIBLE STALL DOOR (INT + EXT)	PER 3/A4.2	7	36

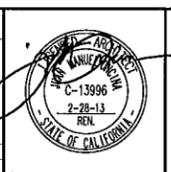
RESTROOM ACCESSORY SCHEDULE COMMENTS

1. AS MANUFACTURED BY 'BOBRICK WASHROOM EQUIPMENT, INC', OR EQUAL.
2. AS MANUFACTURED BY 'TRAP GEAR', OR EQUAL.
3. INSTALL P-TRAP, SUPPLY AND VALVE COVERS AT ALL SINKS.
4. MIRRORS TO BE TEMPERED.
5. CONFIRM MEASUREMENTS IN FIELD PRIOR TO ORDERING.
6. INSTALL GRAB BARS PER DETAILS 1,2/A4.1. IF POSSIBLE UTILIZE EXISTING BACKING PLATE.
7. STAINLESS STEEL, INSTALL PER CITY ACCESS MEMO 2004-01 AND UPDATE LETTER DATED APRIL 20, 2006.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 MANUEL ONCINA ARCHITECTS INC.
 ARCHITECTURE PLANNING INTERIORS
 614 Parkway Plaza Ave.
 San Diego, CA 92103
 619.225-4900 FAX 619.225-4905
 www.oncina.com

SCALE: HORIZONTAL NO SCALE VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT

WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY: FOR CITY ENGINEER
 CHECKED BY: CONSTRUCTION ENGINEER
 INSPECTOR:

DESCRIPTION	BY	APPROVED	DATE	FILMED
DSD BACKCHECK	MOA		02/14/2012	
CHANGE 'A'	MOA		04/26/2012	
CHANGES	CSP		5/17/12	

FUNDING CIP/SAP: _____ SPEC. NO. _____ A4.0

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

SCHEDULES

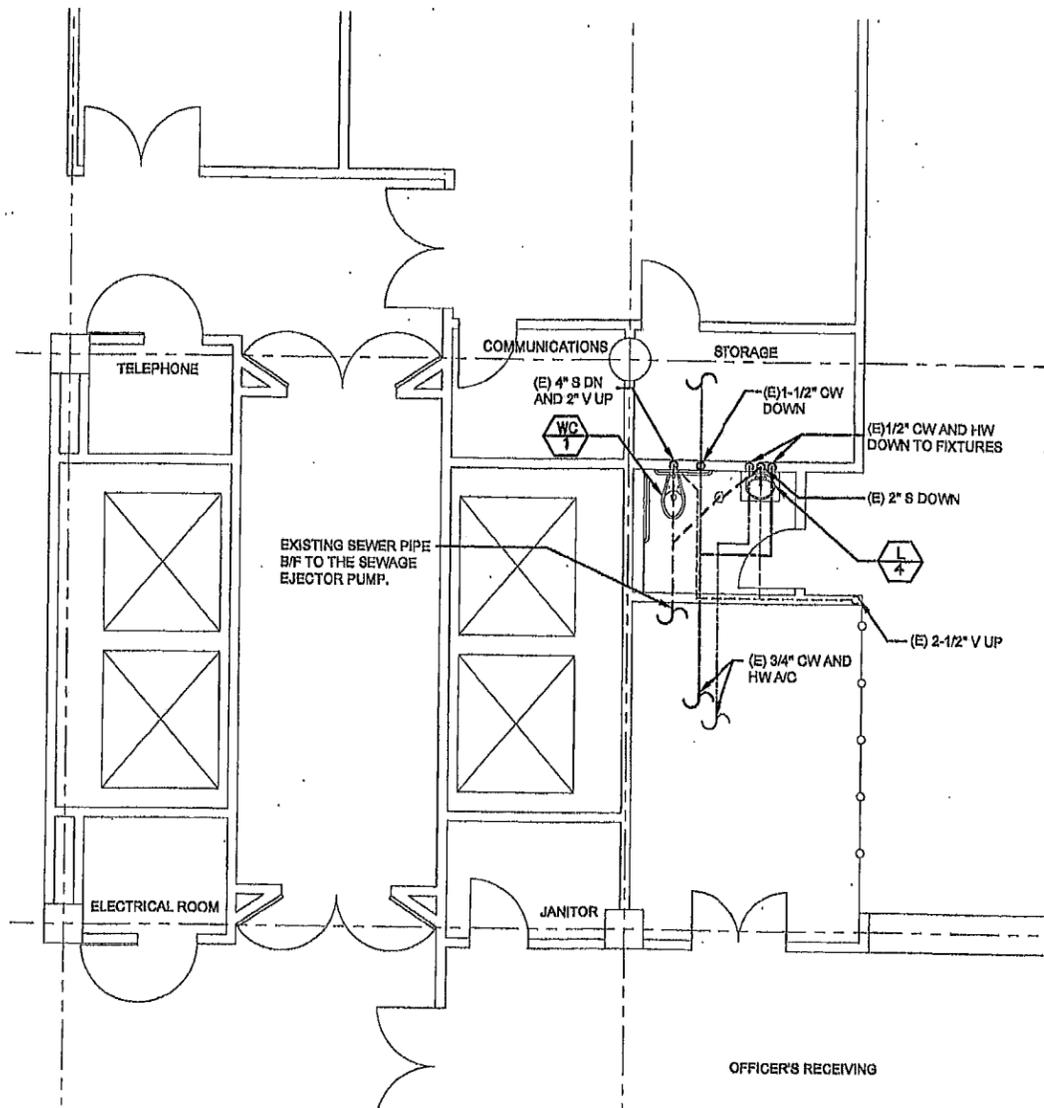
CITY OF SAN DIEGO, CALIFORNIA
 SHEET 21 OF 66 SHEETS

W.B.S. B-00952, B-10008 B-10010

SECTION HEAD: _____
 PROJECT MANAGER: _____
 CCS27 COORDINATOR: _____
 CCS83 COORDINATOR: _____

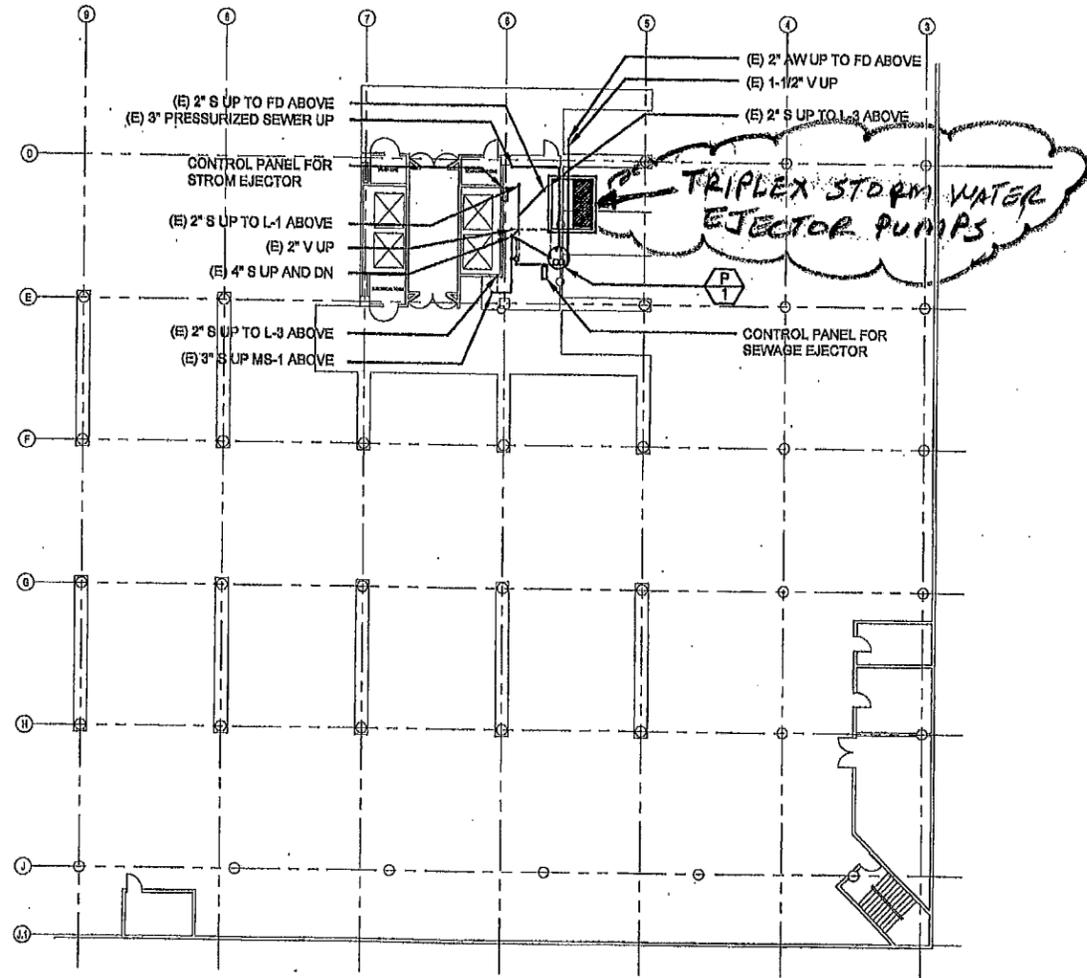
CONTRACTOR: _____ DATE STARTED: _____
 INSPECTOR: _____ DATE COMPLETED: _____

36392-21-D



PARKING 1 RESTROOM ENLARGED PLUMBING PLAN

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



PARTIAL PLUMBING PARKING 2 PLAN

SCALE: 1/16" = 1'-0"

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT	
SCALE	HORIZONTAL NO SCALE VERTICAL NO SCALE



**CITY OF SAN DIEGO
PUBLIC WORKS PROJECT**



WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:	FOR CITY ENGINEER
CHECKED BY:	CONSTRUCTION ENGINEER
INSPECTOR:	AS-BUILTS

FUNDING CIP/SAP	SPEC. NO.	P-2
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
ENLARGED PARKING 1 AND PARTIAL PARKING 2 PLANS		
CITY OF SAN DIEGO, CALIFORNIA SHEET 25 OF 68 SHEETS		N.B.S. B-02952, A-10202 B-10210
DESIGNED BY	DATE	SECTION LEAD
DESIGNED BY	DATE	PROJECT MANAGER
DESIGNED BY	DATE	COSBY COORDINATE
DESIGNED BY	DATE	COSBY COORDINATE
CONTRACTOR	DATE STARTED	36392-25-D
INSPECTOR	DATE COMPLETED	

POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES

City of San Diego

ADDENDUM "B"

FOR

POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES



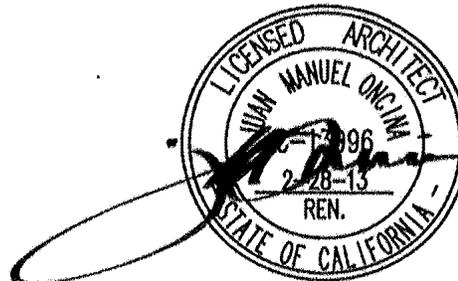
BID NO.: _____ K-12-5548-DBB-3-C
SAP NO. (WBS/IO/CC): _____ B-10008/B-00952/B-10010
COUNCIL DISTRICT: _____ 2
CLIENT DEPARTMENT: _____ 1914
PROJECT TYPE: _____ BA

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Professional Engineer or Licensed Architect:

Manuel Oncina, Architect

Professional Engineer or Licensed Architect

Seal:



For which proposals will be received at **2:00 PM on May 17th 2012** at the Public Works Contracting Group, 1200 Third Avenue, Suite 200, San Diego, California 92101.

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package.

B. BIDDER'S QUESTIONS

- Q.1. Floor drains: I noticed the demo plan does not show removal of drains and the plumbing does not show new but the fixture plan shows some new floor drains. This is a big issue. If the ceiling below has to be demoed and replaced alone, it is a big deal cost wise. Can you confirm if there are new drains and flooring that has to be removed, ceilings removed/replaced, tile, etc?

- A.1. The drains at the shower areas (3 each) may be affected due to removal, leveling and replacement of the tile surface finish and therefore shall be replaced. The drain type is specified and a detail is included for installation. No change to the venting and waste lines.
- Q.2. Addendum A, replaced the proposal documents. It has line item 5 and 6 for water pollution control. We are not performing any outside earthwork, concrete, paving, etc. Is a water pollution control program required for this TI project?
- A.2. Yes, it is required.
- Q.3. We are bidding the San Diego Police Department project and wanted a clarification on the specs. Can you please confirm if sea coast protection is needed?
- A.3. Yes, sea coast protection is required per the specifications.

C. ADDENDUM A

1. To Section D, Item 1, APPENDIX F - Storm Water Pump Specification, **ADD** the following:

Revised plan sheet 36392-25-D (P2), Partial Plumbing Parking 2 Plan: Remove and replace the existing Triplex Storm Water Ejector Pumps with a new Triplex Storm Water Ejector Pumps with lift eyelets and permanent stainless chains on each pump, Control Panel, and Alarm System.

The chains shall be a permanently installed stainless steel shackle and chain, Type 304 or 316, attached to eyelets on each tank of the new duplex pump system.

Length: adequate length necessary for use in pump installation, lifting of pump for maintenance and to reach nearest masonry wall for attachment when not in use.

Size: Size adequate to support load of fully loaded pump in event of failure, for maintenance.

D. VOLUME 1

To the City Supplement, Part 1, Section 2- Scope and Control of Work, Subsection 2-6.5 Local Conditions, page 46, **DELETE** in its entirety and **SUBSTITUTE** the following:

2-6.5 Local Conditions. The AS-BUILTS or RECORD drawings provided with this addendum are historic records of the police headquarters building. They are included to give the bidder a general idea of the overall layout of the police headquarters building. They show the reported location of actual work, information provided by others, and MAY NOT be a precise or an accurate depiction of the actual plan layout of the police headquarters building. Therefore the City has no responsibility for the accuracy of the information contained in the AS-BUILT or RECORD documents. Bidders relying on this record document are advised to obtain an independent verification of its accuracy.

Tony Heinrichs, Director
Public Works Department

Dated: *May 11, 2012*
San Diego, California

TH/nb/ca/rir

City of San Diego

ADDENDUM "C"

FOR

POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES



BID NO.:	K-12-5548-DBB-3-C
SAP NO. (WBS/IO/CC):	B-10008/B-00952/B-10010
COUNCIL DISTRICT:	2
CLIENT DEPARTMENT:	1914
PROJECT TYPE:	BA

For which proposals will be received at **2:00 PM on May 17th 2012** at the Public Works Contracting Group, 1200 Third Avenue, Suite 200, San Diego, California 92101.

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package.

B. ADDENDUM B

1. To Volume 1, City Supplement Part 1, Section 2 - Scope and Control of Work, Subsection 2-6.5 Local Conditions, page 46, **DELETE** in its entirety and **SUBSTITUTE** the following:

2-6.5 Local Conditions. The AS-BUILTS or RECORD drawings provided with this addendum are historic records of the police headquarters building. They are included to give the bidder a general idea of the overall layout of the police headquarters building. They show the reported location of actual work, information provided by others, and MAY NOT be a precise or an accurate depiction of the actual plan layout of the police headquarters building. Therefore the City has no responsibility for the accuracy of the information contained in the AS-BUILT or RECORD documents. Bidders relying on this record document are advised to obtain an independent verification of its accuracy.

The as-built drawings are available for download at the following ftp site:

ftp://ftp.sannet.gov/OUT/ECP/POLICE%20HEADQUARTERS%20ELECTRICAL,%20PLUMBING,%20DOOR%20UPGRADES_Asbuilt/.

Tony Heinrichs, Director
Public Works Department

Dated: *May 14, 2012*
San Diego, California

TH/nb/ca/rir

16

City of San Diego

CONTRACTOR'S NAME: EC Constructors Inc.
 ADDRESS: 9834 River Street, Lakeside, CA 92040
 TELEPHONE NO.: 619-440-7181 FAX NO.: 619-440-7180
 CITY CONTACT: Siavash Haghkhah, Address: 600 B Street, Suite 800, MS. 908A, San Diego, CA 92101
Email: Shaghkhah@sandiego.gov, Phone No. 619-533-5186, Fax No. 619-533-5176

NB/RIR/CA

CONTRACT DOCUMENTS

FOR



POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES

VOLUME 2 OF 2

BID NO.: K-12-5548-DBB-C
 SAP NO. (WBS/IO/CC).: B-10008/B-00952/B-10010
 CLIENT DEPARTMENT: 1914
 COUNCIL DISTRICT: 2
 PROJECT TYPE: BA

THIS CONTRACT IS SUBJECT TO THE FOLLOWING:

- THE CITY'S SUBCONTRACTING PARTICIPATION REQUIREMENTS FOR SLBE PROGRAM.

THIS BIDDING DOCUMENT TO BE SUBMITTED IN ITS ENTIRETY REFER TO INVITATION TO BIDS FOR TIME, DATE, AND LOCATION

BIDDING DOCUMENTS

PROPOSAL

Bidder's General Information

To the City of San Diego:

Pursuant to "Invitation to Bids", specifications, and requirements on file with the City Clerk, and subject to all provisions of the Charter and Ordinances of the City of San Diego and applicable laws and regulations of the United States and the State of California, the undersigned hereby proposes to furnish to the City of San Diego, complete at the prices stated herein, the items or services hereinafter mentioned. The undersigned further warrants that this 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 shall refrain 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.

The undersigned bidder(s) further warrants that bidder(s) has thoroughly examined and understands the entire Contract Documents (plans and specifications) and the Bidding Documents therefore, and that by submitting said Bidding Documents as its bid proposal, bidder(s) acknowledges and is bound by the entire Contract Documents, including any addenda issued thereto, as such Contract Documents incorporated by reference in the Bidding Documents.

IF A SOLE OWNER OR SOLE CONTRACTOR SIGN HERE: NA

- (1) Name under which business is conducted _____
- (2) Signature (Given and surname) of proprietor _____
- (3) Place of Business (Street & Number) _____
- (4) City and State _____ Zip Code _____
- (5) Telephone No. _____ Facsimile No. _____

IF A PARTNERSHIP, SIGN HERE: NA

- (1) Name under which business is conducted _____
- (2) Name of each member of partnership [indicate character of each partner, general or special (limited):

BIDDING DOCUMENTS

(3) Signature (Note: Signature must be made by a general partner)

Full Name and Character of partner

(4) Place of Business (Street & Number) _____
(5) City and State _____ Zip Code _____
(6) Telephone No. _____ Facsimile No. _____

IF A CORPORATION, SIGN HERE:

(1) Name under which business is conducted EC Constructors Inc.

(2) Signature, with official title of officer authorized to sign for the corporation:

Sherri L. Summers
(Signature)

Sherri L. Summers
(Printed Name)

CEO
(Title of Officer)

(Impress Corporate Seal Here)

(3) Incorporated under the laws of the State of California
(4) Place of Business (Street & Number) 9834 River Street
(5) City and State Lakeside, CA Zip Code 92040
(6) Telephone No. 619-440-7181 Facsimile No. 619-440-7180

THE FOLLOWING SECTIONS MUST BE FILLED IN BY ALL PROPOSERS:

In accordance with the "INVITATION TO BIDS", the bidder holds a California State Contractor's license for the following classification(s) to perform the work described in these specifications:

LICENSE CLASSIFICATION B, C8

LICENSE NO. 585677 EXPIRES 2/28/, 2014

This license classification must also be shown on the front of the bid envelope. Failure to show license classification on the bid envelope may cause return of the bid unopened.

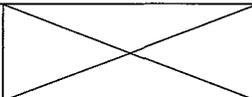
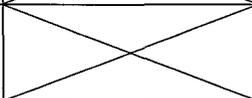
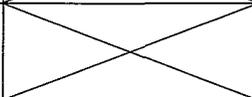
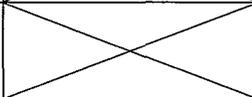
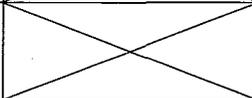
TAX IDENTIFICATION NUMBER (TIN): ██████████

E-Mail Address: jim@ecconstructors.com

BIDDING DOCUMENTS

PROPOSAL (BID)

The Bidder agrees to the construction of **POLICE HEADQUARTERS ELECTRICAL, PLUMBING, DOOR UPGRADES**, for the City of San Diego, in accordance with these contract documents for the prices listed below. The Bidder guarantees the Contract Price for a period of 120 days (90 days for federally funded contracts and contracts valued at \$500,000 or less) from the date of Bid opening to Award of the Contract. The duration of the Contract Price guarantee shall be extended by the number of days required for the City to obtain all items necessary to fulfill all conditions precedent e.g., bond and insurance.

Item	Quantity	Unit	Payment Reference	NAICS	Description	Unit Price	Extension
BASE BID							
1	1	LS	2-4.1	238160	Bonds (Payment and Performance)		\$ 19,474.00
2	1	AL	7-5.3	238210	Building Permits		\$10,000.00
3	1	LS	9-3.1	238210	Field Construction		\$ 1,423,028. ⁰⁰
4	1	AL	9-3.5	238210	Field Orders		\$65,000.00
5	1	LS	801-9.4	541330	Water Pollution Control Program Development		\$ 10. ⁰⁰
6	1	LS	801-94	237990	Water Pollution Control Program Implementation		\$ 10. ⁰⁰
ESTIMATED TOTAL BASE BID:							\$ 1,517,522

BIDDING DOCUMENTS

TOTAL BID PRICE FOR BID (Items 1 through 6 inclusive) amount written in words:

One Million Five Hundred Seventeen Thousand Five Hundred Twenty Two Dollars + ⁰⁰/₁₀₀

The Bid shall contain an acknowledgment of receipt of all addenda, the numbers of which shall be filled in on the Bid form.

List the Addenda received and being acknowledged: A, B, C,

If an addendum or addenda has been issued by the City and not noted as being received by the Bidder, this proposal shall be rejected as being **non-responsive**.

The names of all persons interested in the foregoing proposal as principals are as follows:

Sherri L. Summers, CEO

James J. Summers, President

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, state secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if Bidder or other interested person is an individual, state first and last names in full.

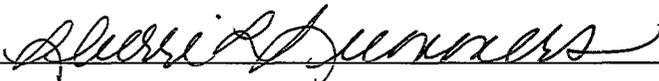
Bidder: EC Constructors Inc.

Title: CEO

Business Address: 9834 River Street, Lakeside, CA 92040

Place of Business: Same

Place of Residence: 1549 Country Crest Drive, El Cajon, CA 92021

Signature: 

BIDDING DOCUMENTS

NOTES:

- A. The City shall determine the low Bid based on the Base Bid alone.
- B. Prices and notations shall be in ink or typewritten. All corrections (which have been initiated by the Bidder using erasures, strike out, line out, or "white-out") shall be typed or written in with ink adjacent thereto, and shall be initialed in ink by the person signing the bid proposal.
- C. Failure to initial all corrections made in the bidding documents shall cause the Bid to be rejected as **non-responsive** and ineligible for further consideration.
- D. Blank spaces must be filled in, using figures. Bidder's failure to submit a price for any Bid item that requires the Bidder to submit a price shall render the Bid **non-responsive** and shall be cause for its rejection.
- E. Unit prices shall be entered for all unit price items. Unit prices shall not exceed two (2) decimal places. If the Unit prices entered exceed two (2) decimal places, the City will only use the first two digits after the decimal points without rounding up or down.
- F. All extensions of the unit prices bid will be subject to verification by the City. In the case of inconsistency or conflict between the product of the Quantity x Unit Price and the Extension, the product shall govern.
- G. In the case of inconsistency or conflict, between the sums of the Extensions with the estimated total Bid, the sum of the Extensions shall govern.
- H. Bids shall not contain any recapitulation of the Work. Conditional Bids will be rejected as being **non-responsive**. Alternative proposals will not be considered unless called for.

BIDDING DOCUMENTS

BID BOND

KNOW ALL MEN BY THESE PRESENTS,

That EC Constructors, Inc. as Principal, and Hartford Fire Insurance Company as Surety, are held and firmly bound unto The City of San Diego hereinafter called "OWNER," in the sum of **10% OF THE TOTAL BID AMOUNT** for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted a Bid to said OWNER to perform the WORK required under the bidding schedule(s) of the OWNER's Contract Documents entitled

Police Headquarters Electrical, Plumbing, Door Upgrades, K-12-5548-DBB-3-C.

NOW THEREFORE, if said Principal is awarded a contract by said OWNER and, within the time and in the manner required in the "Invitation to Bids" enters into a written Agreement on the form of agreement bound with said Contract Documents, furnishes the required certificates of insurance, and furnishes the required Performance Bond and Payment Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by said OWNER and OWNER prevails, said Surety shall pay all costs incurred by said OWNER in such suit, including a reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this 1st day of May, 20 12

EC Constructors, Inc. (SEAL)
(Principal)

Hartford Fire Insurance Company (SEAL)
(Surety)

By: Sherril Summers
(Signature)
Sherril L. Summers, CEO

By: Charlotte Aquino
(Signature) Attorney-In-Fact

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA

County of San Diego }

On MAY 01 2012 before me, Lilia Robinson, Notary Public
Date Here Insert Name and Title of the Officer

personally appeared Charlotte Aquino
Name(s) of Signer(s)



Place Notary Seal Above

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~is~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(ies), and that by ~~his~~/her/~~their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature [Handwritten Signature]
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____

RIGHT THUMBPRINT OF SIGNER

Top of thumb here

Signer Is Representing:
Surety Company

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____

RIGHT THUMBPRINT OF SIGNER

Top of thumb here

Signer Is Representing: _____

POWER OF ATTORNEY

Direct Inquiries/Claims to:

THE HARTFORD
BOND, T-4
One Hartford Plaza
Hartford, Connecticut 06155

call: 888-266-3488 or fax: 860-757-5835

Agency Code: 72-160200

KNOW ALL PERSONS BY THESE PRESENTS THAT:

- Hartford Fire Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- Hartford Casualty Insurance Company, a corporation duly organized under the laws of the State of Indiana
- Hartford Accident and Indemnity Company, a corporation duly organized under the laws of the State of Connecticut
- Hartford Underwriters Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- Twin City Fire Insurance Company, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of Illinois, a corporation duly organized under the laws of the State of Illinois
- Hartford Insurance Company of the Midwest, a corporation duly organized under the laws of the State of Indiana
- Hartford Insurance Company of the Southeast, a corporation duly organized under the laws of the State of Florida

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, **up to the amount of unlimited:**

Lawrence F. McMahon, James Baldassare Jr., Sarah Myers, Maria Guise, Lilia Robinson, Charlotte Aquino
of
San Diego, CA

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by , and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on January 22, 2004 the Companies have caused these presents to be signed by its Assistant Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



Scott Sadowsky

Scott Sadowsky, Assistant Secretary

M. Ross Fisher

M. Ross Fisher, Assistant Vice President

STATE OF CONNECTICUT }
COUNTY OF HARTFORD } ss. Hartford

On this 3rd day of March, 2008, before me personally came M. Ross Fisher, to me known, who being by me duly sworn, did depose and say: that he resides in the County of Hartford, State of Connecticut; that he is the Assistant Vice President of the Companies, the corporations described in and which executed the above instrument; that he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that he signed his name thereto by like authority.



CERTIFICATE

Scott E. Paseka

Scott E. Paseka
Notary Public
My Commission Expires October 31, 2012

I, the undersigned, Assistant Vice President of the Companies, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is still in full force effective as of
Signed and sealed at the City of Hartford.

MAY 01 2012



Gary W. Stumper

Gary W. Stumper, Assistant Vice President

BIDDING DOCUMENTS

THIS PROPOSAL MUST BE NOTARIZED BELOW:

I certify, under penalty of perjury, that the representations made herein regarding my State Contractor's license number, classification and expiration date are true and correct.

Signature *April L. Hunter* Title CEO

SUBSCRIBED AND SWORN TO BEFORE ME, THIS _____ DAY OF _____, 2____.
Notary Public in and for the County of _____, State of _____

(NOTARIAL SEAL)

*SEE ATTACHED.
DM*

CALIFORNIA JURAT WITH AFFIANT STATEMENT

GOVERNMENT CODE § 8202

- See Attached Document (Notary to cross out lines 1-6 below)
- See Statement Below (Lines 1-6 to be completed only by document signer[s], *not* Notary)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

Signature of Document Signer No. 1

Signature of Document Signer No. 2 (if any)

State of California

County of SAN DIEGO

Subscribed and sworn to (or affirmed) before me

on this 16TH day of MAY, 20 12,
Date Month Year

by

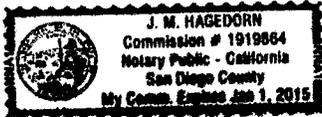
(1) SHERRI L. SUMMERS,
Name of Signer

proved to me on the basis of satisfactory evidence to be the person who appeared before me (D.)

(and

(2) _____,
Name of Signer

proved to me on the basis of satisfactory evidence to be the person who appeared before me.)



Signature J. M. Hagedorn
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Further Description of Any Attached Document

Title or Type of Document: PROPOSAL

Document Date: 05 NONE Number of Pages: THREE

Signer(s) Other Than Named Above: NONE

RIGHT THUMBPRINT OF SIGNER #1

Top of thumb here

RIGHT THUMBPRINT OF SIGNER #2

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NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID UNDER 23 USC 112 AND PCC 7106

State of California)
County of San Diego) ss.

Sherri L. Summers, being first duly sworn, deposes and says that he or she is CEO 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 shall refrain 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.

Signed: Sherri L. Summers
Title: CEO

522 ATTACHED OWN.

Subscribed and sworn to before me this ___ day of ___, 20___
Notary Public

(SEAL)

CALIFORNIA JURAT WITH AFFIANT STATEMENT

GOVERNMENT CODE § 8202

- See Attached Document (Notary to cross out lines 1-6 below)
- See Statement Below (Lines 1-6 to be completed only by document signer[s], *not* Notary)

1 _____
 2 _____
 3 _____
 4 _____
 5 _____
 6 _____

Signature of Document Signer No. 1

Signature of Document Signer No. 2 (if any)

State of California

County of SAN DIEGO

Subscribed and sworn to (or affirmed) before me

on this 16TH day of MAY, 2012,
Date Month Year

by

(1) SHERYL L SUMMERS
Name of Signer

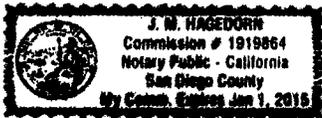
proved to me on the basis of satisfactory evidence to be the person who appeared before me (1) (.)

(and

(2) _____
Name of Signer

proved to me on the basis of satisfactory evidence to be the person who appeared before me.)

Signature [Signature]
Signature of Notary Public



Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Further Description of Any Attached Document

Title or Type of Document: NON-COLLUSION AFFIDAVIT

Document Date: NONE Number of Pages: ONE

Signer(s) Other Than Named Above: NONE

RIGHT THUMBPRINT OF SIGNER #1
Top of thumb here

RIGHT THUMBPRINT OF SIGNER #2
Top of thumb here

CONTRACTORS CERTIFICATION OF PENDING ACTIONS

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of all instances within the past ten years where a complaint was filed or pending against the Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.

- Checked box: The undersigned certifies that within the past 10 years the Bidder has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers.
Unchecked box: The undersigned certifies that within the past ten years the Bidder has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

Multiple horizontal lines provided for describing the complaint and remedial action taken.

Contractor Name EC Constructors Inc.

Certified By Sherri L. Summers Title CEO

Signature: Sherri L. Summers Date: 5/8/12

USE ADDITIONAL FORMS AS NECESSARY

BIDDING DOCUMENTS

**EQUAL BENEFITS ORDINANCE
CERTIFICATION OF COMPLIANCE**



For additional information, contact:
CITY OF SAN DIEGO
EQUAL BENEFITS PROGRAM
 202 C Street, MS 9A, San Diego, CA 92101
 Phone (619) 533-3948 Fax (619) 533-3220

COMPANY INFORMATION

Company Name: EC Constructors Inc. Contact Name: Sherri L. Summers
 Company Address: 9834 River Street, Lakeside, CA 92040 Contact Phone: 619-440-7181
 Contact Email:

CONTRACT INFORMATION

Contract Title: Police Headquarters Electrical, Plumbing, Door Upgrades Start Date:
 Contract Number (if no number, state location): End Date:

SUMMARY OF EQUAL BENEFITS ORDINANCE REQUIREMENTS

The Equal Benefits Ordinance [EBO] requires the City to enter into contracts only with contractors who certify they will provide and maintain equal benefits as defined in SDMC §22.4302 for the duration of the contract. To comply:

- Contractor shall offer equal benefits to employees with spouses and employees with domestic partners.
 - Benefits include health, dental, vision insurance; pension/401(k) plans; bereavement, family, parental leave; discounts, child care; travel/relocation expenses; employee assistance programs; credit union membership; or any other benefit.
 - Any benefit not offer an employee with a spouse, is not required to be offered to an employee with a domestic partner.
- Contractor shall post notice of firm's equal benefits policy in the workplace and notify employees at time of hire and during open enrollment periods.
- Contractor shall allow City access to records, when requested, to confirm compliance with EBO requirements.
- Contractor shall submit *EBO Certification of Compliance*, signed under penalty of perjury, prior to award of contract.

NOTE: This summary is provided for convenience. Full text of the EBO and Rules Implementing the EBO are available at www.sandiego.gov/administration.

CONTRACTOR EQUAL BENEFITS ORDINANCE CERTIFICATION

Please indicate your firm's compliance status with the EBO. The City may request supporting documentation.

- I affirm **compliance** with the EBO because my firm (*contractor must select one reason*):
- Provides equal benefits to spouses and domestic partners.
 - Provides no benefits to spouses or domestic partners.
 - Has no employees.
 - Has collective bargaining agreement(s) in place prior to January 1, 2011, that has not been renewed or expired.
- I request the City's approval to pay affected employees a cash equivalent in lieu of equal benefits and verify my firm made a reasonable effort but is not able to provide equal benefits upon contract award. I agree to notify employees of the availability of a cash equivalent for benefits available to spouses but not domestic partners and to continue to make every reasonable effort to extend all available benefits to domestic partners.

It is unlawful for any contractor to knowingly submit any false information to the City regarding equal benefits or cash equivalent associated with the execution, award, amendment, or administration of any contract. [San Diego Municipal Code §22.4307(a)]

Under penalty of perjury under laws of the State of California, I certify the above information is true and correct. I further certify that my firm understands the requirements of the Equal Benefits Ordinance and will provide and maintain equal benefits for the duration of the contract or pay a cash equivalent if authorized by the City.

Sherri L. Summers, CEO *Sherri Summers* 5/8/12
 Name/Title of Signatory Signature Date

FOR OFFICIAL CITY USE ONLY

Receipt Date: EBO Analyst: Approved Not Approved – Reason:

(Rev 02/15/2011)

LIST OF SUBCONTRACTORS

In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act", Division 2, Part 1, Chapter 4 of the Public Contract Code, the Bidder shall list below the name and address of each Subcontractor who will perform work, labor, render services or specially fabricates and installs a portion [type] of the work or improvement, in an amount in excess of 0.5% of the Contractor's total Bid. The Bidder shall also list below the portion of the work which will be done by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement shall result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3 Subcontracts, which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors that Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB	WHERE CERTIFIED	CHECK IF JOINT VENTURE PARTNERSHIP
Name: <u>California Crafted Marble</u> Address: _____ City: <u>Santee</u> State: <u>CA</u> Zip: _____ Phone: _____	<u>constructor</u>	<u>SOLID SURFACE TOPS</u>	<u>32,737</u>			
Name: <u>Pasco</u> Address: _____ City: <u>Pomona</u> State: <u>CA</u> Zip: _____ Phone: _____	<u>constructor</u>	<u>AUTOMATIC ENTRANCES</u>	<u>24,400</u>			
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____		<u>Garage Doors A.A.</u>				

① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |

② As appropriate, Bidder shall indicate if Subcontractor is certified by:

- | | | | |
|--|--------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | San Diego Regional Minority Supplier Diversity Council | SRMSDC |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification (except for OBE, SLBE and ELBE).

LIST OF SUBCONTRACTORS

In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act", Division 2, Part 1, Chapter 4 of the Public Contract Code, the Bidder shall list below the name and address of each Subcontractor who will perform work, labor, render services or specially fabricates and installs a portion [type] of the work or improvement, in an amount in excess of 0.5% of the Contractor's total Bid. The Bidder shall also list below the portion of the work which will be done by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement shall result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3 Subcontracts, which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors that Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

NAME- ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB	WHERE CERTIFIED	CHECK IF JOINT VENTURE PARTNERSHIP
Name: <u>TMT</u> Address: _____ City: <u>San Diego</u> State: <u>CA</u> Zip: _____ Phone: _____	constructor	CERAMIC TILE	16,350			
Name: <u>LBA</u> Address: _____ City: <u>Alpine</u> State: <u>CA</u> Zip: _____ Phone: _____	constructor	SIGNS	7,987			
Name: <u>B+B Acoustics</u> Address: _____ City: <u>Lakeside</u> State: <u>CA</u> Zip: _____ Phone: _____	constructor	TOILET PARTITIONS & ACCESSORIES	25,792			

① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |

② As appropriate, Bidder shall indicate if Subcontractor is certified by:

- | | | | |
|--|--------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | San Diego Regional Minority Supplier Diversity Council | SRMSDC |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

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LIST OF SUBCONTRACTORS

In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act", Division 2, Part 1, Chapter 4 of the Public Contract Code, the Bidder shall list below the name and address of each Subcontractor who will perform work, labor, render services or specially fabricates and installs a portion [type] of the work or improvement, in an amount in excess of 0.5% of the Contractor's total Bid. The Bidder shall also list below the portion of the work which will be done by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement shall result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3 Subcontracts, which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors that Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

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Name: <u>RB Plumbing</u> Address: _____ City: <u>Lakeside</u> State: <u>CA</u> Zip: _____ Phone: _____	<u>constructor</u>	<u>Plumbing</u>	<u>175,000</u>			
Name: <u>RRL Mechanical</u> Address: _____ City: <u>San Diego</u> State: <u>CA</u> Zip: _____ Phone: _____	<u>constructor</u>	<u>HVAC</u>	<u>105,000</u>			
Name: <u>Tri-Signal</u> Address: _____ City: <u>San Diego</u> State: <u>CA</u> Zip: _____ Phone: _____	<u>constructor</u>	<u>Fire Alarm</u>	269,594.4 <u>261,000</u>			

① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

② As appropriate, Bidder shall indicate if Subcontractor is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC	San Diego Regional Minority Supplier Diversity Council	SRMSDC
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

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Name: <u>Phazer Electric</u> Address: _____ City: <u>Lamesa</u> State: <u>CA</u> Zip: _____ Phone: _____	<u>constructor</u>	<u>ELECTRICAL</u>	<u>346,000</u> <u>337,300</u> <u>A.A.</u>	<u>SLBE</u>	<u>City of San Diego</u>	
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____						

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- | | | | |
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| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |

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- | | | | |
|--|--------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
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NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB®	WHERE CERTIFIED②	CHECK IF JOINT VENTURE PARTNERSHIP
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____						

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BIDDING DOCUMENTS

NAMED EQUIPMENT/MATERIAL SUPPLIER LIST

The Bidder seeking the recognition of equipment, materials, or supplies obtained from Suppliers towards achieving any mandatory, voluntary, or both subcontracting participation percentages shall list the Supplier(s) on the Named Equipment/Material Supplier List. The Named Equipment/Material Supplier List, at a minimum, shall have the name, locations (City) and the **DOLLAR VALUE** of the Suppliers. The Bidder will be credited up to 60% of the amount to be paid to the Suppliers for such materials and supplies unless vendor manufactures or substantially alters materials and supplies in which case 100% will be credited. The Bidder is to indicate (Yes/No) whether listed firm is a supplier or manufacturer. In calculating the subcontractor participation percentages, vendors/suppliers will receive 60% credit of the listed **DOLLAR VALUE**, whereas manufacturers will receive 100% credit. If no indication provided, listed firm will be credited at 60% of the listed dollar value for purposes of calculating the Subcontractor Participation Percentage, Suppliers will receive 60% credit of the listed **DOLLAR VALUE**, whereas manufacturers will receive 100% credit. If no indication provided, listed firm will be credited at 60% of the listed **DOLLAR VALUE** for purposes of calculating the subcontractor participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER	MATERIALS OR SUPPLIES	DOLLAR VALUE OF MATERIAL OR SUPPLIES	SUPPLIER (Yes/No)	MANUFACTURER (Yes/No)	MBE, WBE, DBE, DVBE, OBE, EEBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB	WHERE CERTIFIED
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____						

① As appropriate, Bidder shall identify Vendor/Supplier as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

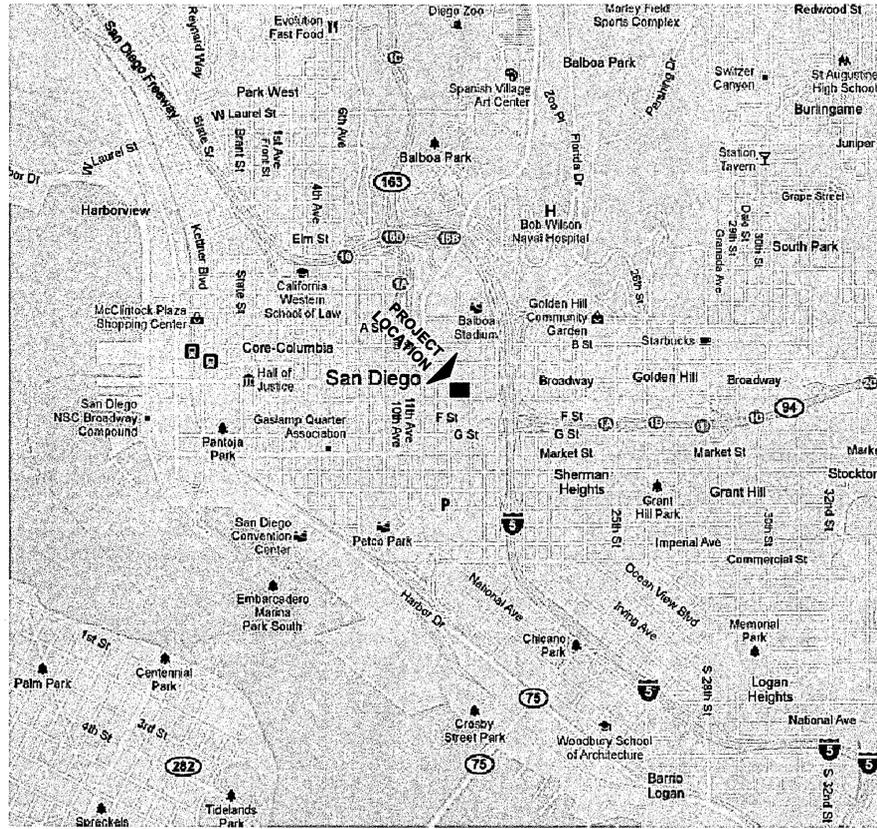
Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

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State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

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POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

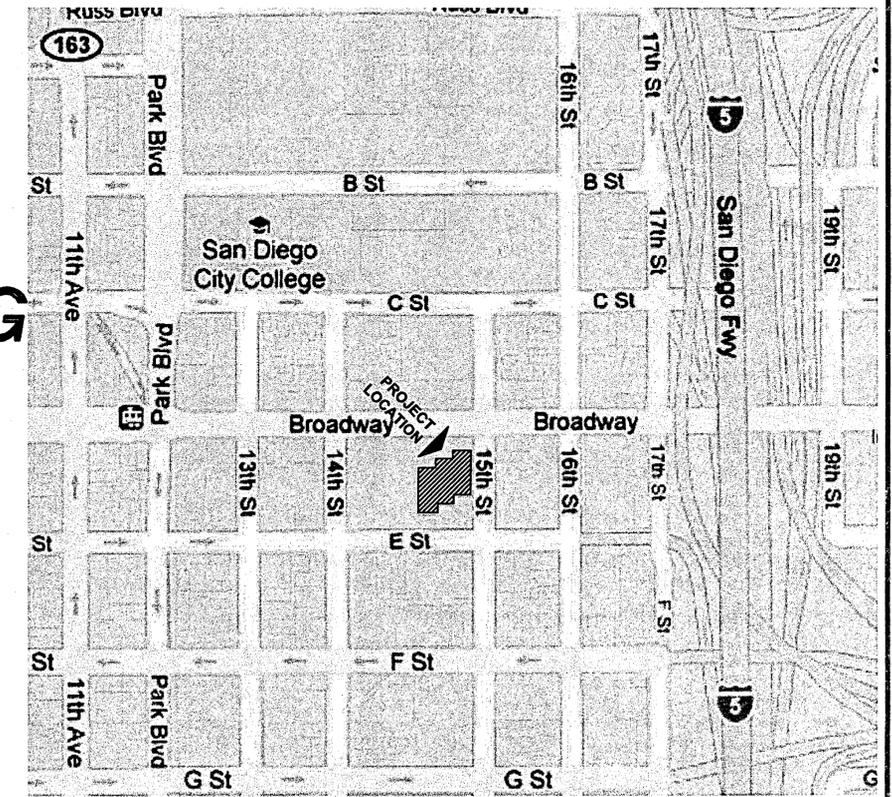


VICINITY MAP
NOT TO SCALE



SDPD HEADQUARTERS LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

FEBRUARY 2012



KEY MAP
NOT TO SCALE



CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

 MANUEL OMCINA
 ARCHITECTS INC.
 ARCHITECTURE
 PLANNING
 INTERIORS
 514 Pennsylvania Ave.
 San Diego, CA 92103
 619.225-4900 FAX
 619.225-4955 FX
 www.moaarchitects.com

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:
 FOR CITY ENGINEER
 CHECKED BY:
 CONSTRUCTION ENGINEER
 CHECKED BY:
 INSPECTOR

FUNDING CP/SAP	SPEC. NO.	G-1
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
COVER SHEET		
CITY OF SAN DIEGO, CALIFORNIA SHEET 1 OF 66 SHEETS		W.B.S. B-00852, B-10008 B-10010
FOR CITY ENGINEER	DATE	SECTION HEAD
DESCRIPTION	BY	APPROVED
DSD BACKCHECK	MOA	2/14/2012
CONSTRUCTION ENGINEER	CHECKED BY:	PROJECT MANAGER
INSPECTOR	CHECKED BY:	CCS27 COORDINATE
AS-BUILTS	CHECKED BY:	CCS83 COORDINATE
CONTRACTOR	DATE STARTED	36392-1-D
INSPECTOR	DATE COMPLETED	

POLICE HEADQUARTERS LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES CITY OF SAN DIEGO, CALIFORNIA

FIRE RESISTANCE DATA

BASED ON CBC TABLE 601:	BUILDING TYPE I-B	BASED ON CBC TABLE 602:
STRUCTURAL FRAME:	2 HOUR	X < 5 FT: 1 HOUR
BEARING WALLS (INT & EXT):	2 HOUR	5 FT - 10 FT: 1 HOUR
NONBEARING WALLS - EXT:	1 HOUR	10 FT - 30 FT: 1 HOUR
NONBEARING WALLS - INT:	0 HOUR	X > 30FT: 0 HOUR
FLOOR CONSTRUCTION:	2 HOUR	
ROOF CONSTRUCTION:	1 HOUR	

* FIRE RESISTANCE RATING REQ'D FOR EXT WALLS BASED ON FIRE SEPARATION DISTANCE

BUILDING DATA

OCCUPANCY:	B
CONSTRUCTION TYPE:	I-B
NO. OF STORIES:	7
BUILDING HEIGHT:	EXISTING, APPROX 110'-0"
ALLOWABLE AREA:	UL
SPRINKLERED:	YES
GOVERNING CODES:	2010 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE 2010 CALIFORNIA BUILDING CODE 2010 CALIFORNIA GREEN BUILDING CODE 2010 CALIFORNIA ELECTRICAL CODE 2010 CALIFORNIA MECHANICAL CODE 2010 CALIFORNIA PLUMBING CODE 2010 CALIFORNIA ENERGY CODE 2010 CALIFORNIA FIRE CODE

PROJECT DATA

APN:	534-351-05-00	
SITE ADDRESS:	1401 BROADWAY SAN DIEGO, CA 92101	
LEGAL DESCRIPTION:	LOTS 1 THRU 10 IN BLOCK 5 OF CULVERWELL'S ADDITION, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA. ACCORDING TO MAP THEREOF #143, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JUNE 3, 1870 AND LOTS A-L IN BLOCK 178 OF HORTON'S ADDITION, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO STATE OF CALIFORNIA ACCORDING TO THE MAP THEREOF	
ZONING:	CCPD-ER	
PROPOSED F.A.R.:	NO CHANGE	
BUILDING COVERAGE:	NO CHANGE	
SETBACKS:		
FRONT (STREET):	N/A	
SIDE YARD:	N/A	
REAR YARD:	N/A	
EXISTING FLOOR AREA (NO CHANGE):	AREA OF IMPROVEMENTS:	
PARKING LEVEL P-2	110,784 SF	4,680 SF
PARKING LEVEL P-1	110,784 SF	483 SF
FLOOR LEVEL 1:	15,000 SF	1,017 SF
FLOOR LEVEL 2:	22,995 SF	664 SF
FLOOR LEVEL 3:	23,445 SF	1,398 SF
FLOOR LEVEL 4:	26,595 SF	729 SF
FLOOR LEVEL 5:	26,595 SF	630 SF
FLOOR LEVEL 6:	26,595 SF	630 SF
FLOOR LEVEL 7:	26,552 SF	934 SF
ROOF:	4,940 SF	10 SF
TOTAL EXISTING AREA:	394,822 SF	
TOTAL AREA OF IMPROVEMENTS:		11,175 SF
PARKING PROVIDED:	LEVEL P-2: 297	8 ACCESSIBLE
NOTE: NO PARKING ON-SITE IS ALLOWED FOR PUBLIC USE.	LEVEL P-1: 241	
	LEVEL 1: 162	1 ACCESSIBLE
	ON STREET: 5	5 ACCESSIBLE
	TOTAL: 700	14 ACCESSIBLE
ACCESSIBLE PARKING REQ'D:	14 SPACES	

SCOPE OF WORK

LEVEL 2 ENTRY UPGRADES:
PROPOSED WORK INCLUDES REMOVAL OF EXISTING GLASS ENTRY DOORS AND INSTALLATION OF NEW AUTOMATIC TELESCOPING DOORS (3 INSTANCES).

PLUMBING UPGRADES:
PROPOSED WORK INCLUDES REMOVAL AND REPLACEMENT OF ALL RESTROOM FIXTURES, NEW SOLID SURFACE COUNTERTOPS IN ALL RESTROOMS (ALL FLOOR LEVELS), REMOVAL AND REPLACEMENT OF EJECTOR PUMPS (LEVEL P-2), REMOVAL AND INSTALLATION OF NEW WASTE LINE AT KITCHEN (LEVEL 4).

MECHANICAL UPGRADES:
PROPOSED WORK INCLUDES INSTALLATION OF NEW ROOF TOP COOLING UNIT AND CEILING MOUNT ZONING SYSTEM UNITS IN UTILITY ROOMS ON EACH FLOOR.

ELECTRICAL UPGRADES:
ELECTRICAL SCOPE NOTE: ELECTRICAL DRAWINGS E1 THROUGH E23 SUPPORT A SERIES OF SCOPE ITEMS AT THE SAN DIEGO POLICE HEADQUARTERS.

PROJECT 'A': DURING NORMAL OPERATION OF THE FACILITY, PERFORM AN INFRA-RED THERMAL IMAGING SCAN OF THE ENTIRE 277/480V AND 120/208V DISTRIBUTION SYSTEM TO LOCATE POTENTIAL TROUBLE SPOTS SUCH AS LOOSE CONNECTIONS ETC. THE CONTRACTOR SHALL ALSO PREPARE A COMPLETE FACILITY SINGLE LINE DIAGRAM. SEE DRAWING E6.

PROJECT 'B': OPEN UP ALL EQUIPMENT SCANNED IN THE PRECEDING PROJECT, CLEAN AND VACUUM ALL EQUIPMENT, TIGHTEN ALL LOOSE CONNECTIONS (REPLACE FEEDERS IF BURNT, ETC.) AND RETURN EQUIPMENT TO SERVICE.
NOTE: NO DRAWINGS REQUIRED FOR THIS PROJECT.

PROJECT 'C': REPLACE THE EXISTING ATS. SEE DRAWING E7.

PROJECT 'D': REPLACE EXISTING UPS BATTERIES AND INSTALL NEW BATTERIES. SEE DRAWING E8.

PROJECT 'E': REPLACE MAIN TRANSFORMER IN 6TH FLOOR ELECTRICAL ROOM. SEE DRAWING E9.

PROJECT 'F': INSTALL ENGINE TAP BOX AT 'E' LEVEL PLAZA. SEE DRAWINGS E10 & E10.1.

PROJECT 'G': INSTALL GENERATOR REMOTE ANNUNCIATOR AT WATCH COMMANDERS OFFICE ON 1ST FLOOR. SEE DRAWING E11.

PROJECT 'H': INSTALL UPS REMOTE READ-OUT PANEL AT WATCH COMMANDERS OFFICE ON 1ST FLOOR. SEE DRAWING E12.

PROJECT 'I': REPLACE BUILDING-WIDE FIRE ALARM SYSTEM IN ITS ENTIRETY. SEE DRAWING E13.

PROJECT 'J': REPLACE POLE LIGHTS AT OPEN PARKING LEVEL DECK AREAS. SEE DRAWINGS E2, & E14.

PROJECT 'K': REPLACE STEP LIGHTS AT BROADWAY AND 'E' STREET ENTRANCES. SEE DRAWINGS E2, & E14.

PROJECT 'L': INSTALL NEW TRANSFORMER ON P-1 LEVEL FOR FUTURE PROPERTY ROOM FREEZERS. SEE DRAWING E15.

PROJECT 'M': PROVIDE A BATTERY MANAGEMENT/CHARGING SYSTEM FOR THE NEW UPS BATTERIES INSTALLED UNDER PROJECT 'D' ABOVE. SEE DRAWING E16.

ELECTRICAL SCOPE NOTE: DRAWINGS E17 THROUGH E18 SUPPORT THE MAIN ENTRY WORK SHOWN ON DRAWINGS A1.0 AND A2.0.

ELECTRICAL SCOPE NOTE: DRAWINGS E19 THROUGH E23 SUPPORT THE MECHANICAL WORK SHOWN ON DRAWINGS M-1 THROUGH M-7.

I HEREBY DECLARE THAT I AM THE ARCHITECT OF WORK FOR THIS PROJECT AND HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN THE ARCHITECT'S PRACTICE ACT AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS, I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY OF SAN DIEGO IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS ARCHITECT OF WORK, OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

MANUEL ONCINA, ARCHITECT *[Signature]* 02/14/2012
(ARCHITECT'S NAME) DATE

SHEET INDEX

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2	G-2	TITLE SHEET
3	G-3	GENERAL NOTES
4	G-4	GENERAL NOTES
5	G-5	GENERAL NOTES
6	G-6	GENERAL ACCESS DETAILS
7	G-7	KEY PLANS
8	G-8	KEY PLANS
9	G-9	KEY PLANS
10	G-10	KEY PLANS
11	D1	DEMOLITION PLAN - LEVEL 2 ENTRY
12	D2	DEMOLITION PLAN - RESTROOMS
13	D3	DEMOLITION PLAN - RESTROOMS
14	A1.0	ACCESSIBLE PARKING PLANS
15	A2.0	LEVEL 2 ENTRY - IMPROVEMENT PLAN
16	A2.1	RESTROOM IMPROVEMENT PLANS
17	A2.2	RESTROOM IMPROVEMENT PLANS
18	A3.0	LEVEL 2 ENTRY - INT ELEV, SECTION, DETAILS
19	A3.1	RESTROOM - INTERIOR ELEVATIONS
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21	A4.0	SCHEDULES
22	A4.1	DETAILS
23	A4.2	DETAILS
24	P-1	ABBREVIATIONS, LEGEND, SYMBOLS, GEN. NOTES
25	P-2	PLUMBING SITE AND PARKING PLAN
26	P-3	PLUMBING ENLARGED PLAN
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28	P-5	PLUMBING ENLARGED PLAN
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30	P-7	PLUMBING ENLARGED PLAN
31	P-8	PLUMBING ENLARGED PLAN
32	P-9	PLUMBING ENLARGED PLAN
33	P-10	PLUMBING DETAILS
34	M-1	GENERAL NOTES, ABBREVIATIONS, SYMBOLS
35	M-2	MECHANICAL ENLARGED PLAN
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SHEET NO.	DISCIPLINE CODE	TITLE
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45	E2	LIGHT FIXTURE SCHEDULE
46	E3	TITLE 24 - EXTERIOR
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48	E6	PROJECT A: THERMAL IMAGING
49	E7	PROJECT C: REPLACE EXISTING ATS
50	E8	PROJECT D: REPLACE UPS BATTERIES
51	E9	PROJECT E: REPLACE 6TH FLOOR TRANSFORMER
52	E10	PROJECT F: ENGINE TAP BOX
53	E10.1	PROJECT F: ENGINE TAP BOX
54	E11	PROJECT G: GENERATOR REMOTE ANNUNCIATOR
55	E12	PROJECT H: UPS REMOTE ALARM PANEL
56	E13	PROJECT I: FIRE ALARM SYSTEM REPLACEMENT
57	E14	PROJECT J & K: REPLACE SITE LIGHTING
58	E15	PROJECT L: NEW TRANSFORMER ON LEVEL P-1
59	E16	PROJECT M: PROVIDE AND INSTALL UPS BMP
60	E17	MECHANICAL ELECTRICAL PLANS - SHEET 1
61	E18	MECHANICAL ELECTRICAL PLANS - SHEET 2
62	E19	MECHANICAL ELECTRICAL PLANS - SHEET 3
63	E20	MECHANICAL ELECTRICAL PANEL SCHEDULES
64	E21	MECHANICAL ELECTRICAL PANEL SCHEDULES
65	E22	LEVEL 2 ENTRY - ELECTRICAL POWER PLAN
66	E23	LEVEL 2 ENTRY - SINGLE LINE AND PANEL SCHED.

DEFERRED SUBMITTAL ITEMS

- ELECTRICAL PROJECT 'I': FIRE ALARM SYSTEM.
- SEISMIC ANCHORAGE/METHOD OF CONNECTION FOR ELECTRICAL EQUIPMENT IDENTIFIED AS WEIGHING 300 POUNDS OR GREATER.

OWNER/APPLICANT

OWNER:
CITY OF SAN DIEGO
ENGINEERING AND CAPITAL PROJECTS DEPARTMENT
ATTN: SHIVASH HAGHKHAH
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PROJECT TEAM

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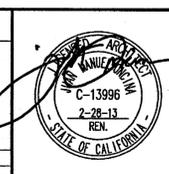
FUNDING CP/SAP	SPEC. NO.	G-2
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
PROJECT DATA		
CITY OF SAN DIEGO, CALIFORNIA		W.B.S. B-00852, B-10008 B-10010
SHEET 2 OF 66 SHEETS		
APPROVED BY:	DATE	SECTION HEAD
FOR CITY ENGINEER	2/14/2012	PROJECT MANAGER
FOR CITY ENGINEER		
CHECKED BY:		
CONSTRUCTION ENGINEER		CCS27 COORDINATE
CHECKED BY:		
INSPECTOR		CCS83 COORDINATE
AS-BUILTS		
CONTRACTOR	DATE STARTED	36392-2-D
INSPECTOR	DATE COMPLETED	

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

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SCALE: HORIZONTAL NO SCALE
VERTICAL NO SCALE



**CITY OF SAN DIEGO
PUBLIC WORKS PROJECT**



WARNING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

GENERAL ACCESS REGULATIONS

GENERAL ACCESSIBILITY REQUIREMENTS:

THE FOLLOWING ARE ONLY SELECT REQUIREMENTS FROM THE 2010 CALIFORNIA BUILDING CODE (2010 CBC). REFER TO ARCHITECTURAL DRAWINGS, SPECIFICATIONS AND 2010 CBC FOR ADDITIONAL ACCESSIBILITY REQUIREMENTS.

DEFINITIONS:

ACCESSIBLE: IS DEFINED AS APPROACHABLE AND USABLE BY PERSONS WITH DISABILITIES IN COMPLIANCE WITH THE 2010 CBC.

ACCESSIBILITY: IS DEFINED AS THE COMBINATION OF VARIOUS ELEMENTS IN A BUILDING, FACILITY, SITE OR AREA, OR PORTION THEREOF WHICH ALLOWS ACCESS, CIRCULATION AND THE FULL USE OF THE BUILDING AND FACILITIES BY PERSONS WITH DISABILITIES IN CONFORMANCE WITH CHAPTERS 11A, 11B AND 11C OF THE 2010 CBC.

ACCESSIBLE ROUTE OF TRAVEL: IS A CONTINUOUS UNOBSTRUCTED PATH CONNECTING ALL ACCESSIBLE ELEMENTS AND SPACES IN AN ACCESSIBLE BUILDING OR FACILITY THAT CAN BE NEGOTIATED BY A PERSON WITH A SEVERE DISABILITY USING A WHEELCHAIR, AND THAT IS ALSO SAFE FOR AND USABLE BY PERSONS WITH OTHER DISABILITIES, AND THAT ALSO IS CONSISTENT WITH THE DEFINITION OF "PATH OF TRAVEL". INTERIOR ACCESSIBLE ROUTES MAY INCLUDE CORRIDORS, FLOORS, RAMPS, ELEVATORS, LIFTS AND CLEAR FLOOR SPACE AT FIXTURES. EXTERIOR ACCESSIBLE ROUTES MAY INCLUDE PARKING ACCESS AISLES, CURB RAMPS, CROSSWALKS AT VEHICULAR WAYS, WALKS, SIDEWALKS, RAMPS AND LIFTS. AN ACCESSIBLE ROUTE DOES NOT INCLUDE STAIRS, STEPS, OR ESCALATORS.

AMERICANS WITH DISABILITIES ACT (ADA): IS A COMPREHENSIVE CIVIL RIGHTS LAW FOR PEOPLE WITH DISABILITIES. THE DEPARTMENT OF JUSTICE ENFORCES THE ADA'S REQUIREMENTS. THOUGH THE ADA IS NOT THE BUILDING CODE, IT HAS SIMILAR DIMENSIONAL AND CLEARANCE REQUIREMENTS TO THE 2010 CBC. THESE REQUIREMENTS ARE SUBJECT TO CHANGE BY FEDERAL REGULATORY BODIES AND/OR COURT DECISIONS. ALL WORK SHALL ALSO COMPLY WITH THE ADA.

CONTRACTOR SHALL NOT INSTALL WORK THAT VIOLATES 2010 CBC OR ADA REQUIREMENTS AND REGULATIONS. CONTRACTOR SHALL NOT ASSUME THAT NON-COMPLIANT WORK COMPLIES BASED ON ACCEPTANCE OF THE OVERALL WORK BY ANY BUILDING OFFICIAL HAVING JURISDICTION OVER THE WORK.

FACILITY ACCESSIBILITY:

- WHEN A BUILDING, OR PORTION OF A BUILDING, IS REQUIRED TO BE ACCESSIBLE OR ADAPTABLE, AN ACCESSIBLE ROUTE OF TRAVEL COMPLYING WITH CBC SECTIONS 1102B, 1114B, 1124B, 1133B.3, 1133B.5, 1133B.7 AND 1133B.8.6 SHALL BE PROVIDED TO ALL PORTIONS OF THE BUILDING, TO ACCESSIBLE BUILDING ENTRANCES AND BETWEEN THE BUILDING AND THE PUBLIC WAY. ALL WALKS, HALLS, CORRIDORS, AISLES, SKYWALKS, TUNNELS AND OTHER SPACES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE 2010 CBC. EXCEPT WITHIN AN INDIVIDUAL DWELLING UNIT, AN ACCESSIBLE ROUTE OF TRAVEL SHALL NOT PASS THROUGH KITCHENS, STORAGE ROOMS, RESTROOMS, CLOSETS OR OTHER SPACES USED FOR SIMILAR PURPOSES. AT LEAST ONE ACCESSIBLE ROUTE WITHIN THE BOUNDARY OF THE SITE SHALL BE PROVIDED FROM PUBLIC TRANSPORTATION STOPS, ACCESSIBLE PARKING, AND ACCESSIBLE PASSENGER LOADING ZONES, AND PUBLIC STREETS OR SIDEWALKS TO THE ACCESSIBLE BUILDING ENTRANCE THEY SERVE. THE ACCESSIBLE ROUTE SHALL, TO THE MAXIMUM EXTENT FEASIBLE, COINCIDE WITH THE ROUTE FOR THE GENERAL PUBLIC. AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDINGS, FACILITIES, ELEMENTS AND SPACES THAT ARE ON THE SAME SITE. AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDING OR FACILITY ENTRANCES WITH ALL ACCESSIBLE SPACES AND ELEMENTS AND WITH ALL ACCESSIBLE DWELLING UNITS WITHIN THE BUILDING OR FACILITY. AN ACCESSIBLE ROUTE SHALL CONNECT AT LEAST ONE ACCESSIBLE ENTRANCE OF EACH ACCESSIBLE DWELLING UNIT WITH THOSE EXTERIOR AND INTERIOR SPACES AND FACILITIES THAT SERVE THE ACCESSIBLE DWELLING UNIT.

- ALL ENTRANCES AND ALL EXTERIOR GROUND-LEVEL EXITS SHALL BE ACCESSIBLE IN COMPLIANCE WITH CBC SECTION 1133B.1.1.

BUILDING ACCESSIBILITY:

- ALL ENTRANCES AND EXTERIOR GROUND-FLOOR EXIT DOORS TO BUILDINGS AND FACILITIES SHALL BE MADE ACCESSIBLE TO PERSONS WITH DISABILITIES. SUCH ENTRANCES SHALL BE CONNECTED BY AN ACCESSIBLE ROUTE TO PUBLIC TRANSPORTATION STOPS, TO ACCESSIBLE PARKING AND PASSENGER LOADING ZONES AND TO PUBLIC STREETS OR SIDEWALKS, IF AVAILABLE. ENTRANCES SHALL BE CONNECTED BY AN ACCESSIBLE ROUTE TO ALL ACCESSIBLE SPACES OF ELEMENTS WITHIN THE BUILDING OR FACILITY. DOORWAYS SHALL HAVE A MINIMUM CLEAR OPENING OF 32 INCHES WITH THE DOOR OPEN 90 DEGREES, MEASURED BETWEEN THE FACE OF THE DOOR AND THE OPPOSITE STOP. AT EVERY PRIMARY PUBLIC ENTRANCE, THERE SHALL BE A SIGN DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

- DURING PERIODS OF PARTIAL OR RESTRICTED USE OF A BUILDING OR FACILITY, THE ENTRANCES USED FOR PRIMARY ACCESS SHALL BE ACCESSIBLE TO AND USABLE BY PERSONS WITH DISABILITIES.

- RECESSED DOORMATS SHALL BE ADEQUATELY ANCHORED TO PREVENT INTERFERENCE WITH WHEELCHAIR TRAFFIC.

- ALL GATES, INCLUDING TICKET GATES, SHALL MEET ALL APPLICABLE SPECIFICATIONS FOR DOORS.

WALKS AND SIDEWALKS:

- WALKWAYS SHALL HAVE A CONTINUOUS COMMON SURFACE, NOT INTERRUPTED BY STEPS OR BY ABRUPT CHANGE IN LEVEL EXCEEDING 1/2 INCH, AND SHALL BE A MINIMUM OF 48 INCHES IN WIDTH.

- SURFACES WITH A SLOPE OF LESS THAN 6 PERCENT GRADIENT SHALL BE AT LEAST AS SLIP-RESISTANT AS THAT DESCRIBED AS A MEDIUM SALTED FINISH.

- SURFACES WITH A SLOPE OF 6 PERCENT GRADIENT OR GREATER SHALL BE SLIP-RESISTANT.

- SURFACE CROSS SLOPES SHALL NOT EXCEED 1 UNIT VERTICAL IN 50 UNITS HORIZONTAL (2% SLOPE).

- WALKWAYS SHALL BE FREE OF GRATINGS WHENEVER POSSIBLE. FOR GRATINGS LOCATED IN THE SURFACE OF ANY OF THESE AREAS, GRID OPENINGS IN GRATING SHALL BE LIMITED TO 1/2 INCH IN THE DIRECTION OF TRAFFIC FLOW.

- WHEN THE SLOPES IN THE DIRECTION OF TRAVEL OF ANY WALK EXCEEDS 1 UNIT VERTICAL TO 20 UNITS HORIZONTAL IT SHALL COMPLY WITH THE PROVISIONS FOR PEDESTRIAN RAMPS PER 2010 CBC SECTION 1133B.5.

- CHANGES IN LEVEL UP TO 1/4 INCH MAY BE VERTICAL AND WITHOUT EDGE TREATMENT. CHANGES IN LEVEL BETWEEN 1/4 INCH AND 1/2 INCH SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1 UNIT VERTICAL IN 2 UNITS HORIZONTAL. CHANGES IN LEVELS GREATER THAN 1/2 INCH SHALL BE ACCOMPLISHED BY MEANS OF A CURB RAMP, RAMP, ELEVATOR OR PLATFORM LIFT IN COMPLIANCE WITH CURRENT CODE.

- ALL WALKS WITH CONTINUOUS GRADIENTS SHALL HAVE LEVEL AREAS AT LEAST 5' IN LENGTH AT INTERVALS OF 400 FEET MAXIMUM.

SIGNS AND IDENTIFICATION:

- WHEN SIGNS IDENTIFY PERMANENT ROOM AND SPACES OF A BUILDING OR SITE, THEY SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS AS WELL AS ANY OTHER REQUIREMENT SPECIFIED IN 2010 CBC.

- FINISH AND CONTRAST:** CHARACTERS, SYMBOLS AND THEIR BACKGROUND SHALL HAVE A NONGLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND.

- PROPORTIONS:** CHARACTERS ON SIGNS SHALL HAVE A WIDTH-TO-HEIGHT RATIO OF BETWEEN 3:5 AND 1:1, MEASURED BY THE WIDTH OF AN UPPERCASE 'O' AND HEIGHT OF AN UPPERCASE 'I'; AND A STROKE WIDTH-TO-HEIGHT RATIO OF BETWEEN 1:5 AND 1:10 MEASURED BY THE WIDTH AND HEIGHT OF THE UPPERCASE 'I'.

(CONTINUED - NEXT COLUMN)

(SIGNS AND IDENTIFICATION CONTINUED)

- CHARACTER HEIGHT:** CHARACTERS AND NUMBERS ON SIGNS REQUIRED TO BE ACCESSIBLE BY CBC SECTION 1117B.5.1, ITEMS 2 AND 3 SHALL BE SIZE ACCORDING TO THE FOLLOWING TABLE. THE MINIMUM HEIGHT IS MEASURED USING AN UPPERCASE LETTER 'I'. LOWERCASE CHARACTERS ARE PERMITTED. VIEWING DISTANCE SHALL BE MEASURED AS THE HORIZONTAL DISTANCE BETWEEN THE CHARACTER AND AN OBSTRUCTION PREVENTING FURTHER APPROACH TOWARDS THE SIGN.

HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 inches to less than or equal to 70 inches	Less than 72 inches	5/8 inch
Greater than 70 inches to less than or equal to 120 inches	72 inches and greater	5/8 inch, plus 1/8 inch per foot of viewing distance above 72 inches
	Less than 180 inches	2 inches
Greater than 120 inches	180 inches and greater	2 inches, plus 1/8 inch per foot of viewing distance above 180 inches
	Less than 21 feet	3 inches
Greater than 120 inches	21 feet and greater	3 inches, plus 1/8 inch per foot of viewing distance above 21 feet

- RAISED CHARACTERS AND PICTORIAL SYMBOL SIGNS:** WHEN RAISED CHARACTERS ARE REQUIRED OR WHEN PICTORIAL SYMBOLS ARE USED ON SUCH SIGNS, THEY SHALL CONFORM WITH THE FOLLOWING REQUIREMENTS:

- CHARACTER TYPE:** CHARACTERS ON SIGNS SHALL BE RAISED 1/32 INCH MINIMUM AND SHALL BE SANS SERIF UPPERCASE CHARACTERS ACCOMPANIED BY CONTRACTED GRADE 2 BRAILLE.

- CHARACTER SIZE:** RAISED CHARACTERS SHALL BE A MINIMUM OF 5/8 INCH AND MAXIMUM OF 2 INCHES HIGH.

- PICTORIAL SYMBOL SIGNS:** PICTORIAL SYMBOLS SHALL BE ACCOMPANIED BY THE VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE OUTSIDE DIMENSION OF THE PICTOGRAM FIELD SHALL BE A MINIMUM OF 6 INCHES IN HEIGHT.

- CHARACTER PLACEMENT:** CHARACTERS AND BRAILLE SHALL BE IN A HORIZONTAL FORMAT. BRAILLE SHALL BE PLACED A MINIMUM OF 3/8 INCH AND MAXIMUM OF 1/2 INCH DIRECTLY BELOW THE TACTILE CHARACTERS; FLUSH LEFT OR CENTERED. WHEN TACTILE TEXT IS MULTI-LINED, ALL BRAILLE SHALL BE PLACED TOGETHER BELOW ALL LINES OF TACTILE TEXT.

- BRAILLE:** CONTRACTED GRADE 2 BRAILLE SHALL BE USED WHENEVER BRAILLE IS REQUIRED IN OTHER PORTIONS OF THESE STANDARDS. DOTS SHALL BE 1/10 INCH ON CENTER IN EACH CELL WITH 2/10 INCH SPACE BETWEEN CELLS, MEASURED FROM THE SECOND COLUMN OF DOTS IN THE FIRST CELL TO THE FIRST COLUMN OF DOTS IN THE SECOND CELL. DOTS SHALL BE RAISED A MINIMUM OF 1/40 INCH ABOVE THE BACKGROUND. BRAILLE DOTS SHALL BE DOMED OR ROUNDED.

7. MOUNTING LOCATION AND HEIGHT:

- WHERE PERMANENT IDENTIFICATION SIGNS ARE PROVIDED FOR ROOMS AND SPACES, SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR, WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING AT THE LEAF OF DOUBLE DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT.

- WHERE PERMANENT IDENTIFICATION SIGNAGE IS PROVIDED FOR ROOMS AND SPACES THEY SHALL BE LOCATED ON THE APPROACH SIDE OF THE DOOR AS ONE ENTERS THE ROOM OR SPACE. SIGNS THAT IDENTIFY EXITS SHALL BE LOCATED ON THE APPROACH SIDE OF THE DOOR AS ONE EXITS THE ROOM OR SPACE.

- MOUNTING HEIGHT SHALL BE 60 INCHES ABOVE THE FINISH FLOOR TO THE CENTER LINE OF THE SIGN. MOUNTING LOCATION SHALL BE DETERMINED SO THAT A PERSON MAY APPROACH WITHIN 3 INCHES OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF THE DOOR.

DOORS:

- EVERY REQUIRED EXIT DOORWAY SHALL BE OF A SIZE AS TO PERMIT THE INSTALLATION OF A DOOR NOT LESS THAN 3 FEET IN WIDTH AND NOT LESS THAN 6 FEET 8 INCHES IN HEIGHT. WHEN INSTALLED IN EXIT DOORWAYS, EXIT DOORS SHALL BE CAPABLE OF OPENING AT LEAST 90 DEGREES AND SHALL BE SO MOUNTED THAT THE CLEAR WIDTH OF THE EXIT WAY IS NOT LESS THAN 32 INCHES.

- FOR HINGED DOORS, THE OPENING WIDTH SHALL BE MEASURED WITH THE DOOR POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION.

- WHERE A PAIR OF DOORS IS UTILIZED, AT LEAST ONE OF THE DOORS SHALL PROVIDE A CLEAR, UNOBSTRUCTED OPENING WIDTH OF 32 INCHES WITH THE LEAF POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION.

- IF AN AUTOMATIC DOOR IS USED, THEN IT SHALL COMPLY WITH BHMA A156.10. SLOWLY OPENING, LOW-POWERED, AUTOMATIC DOORS SHALL COMPLY WITH BHMA A156.19. SUCH DOORS SHALL NOT OPEN TO BACK CHECK FASTER THAN 3 SECONDS AND SHALL REQUIRE NO MORE THAN 15lbf TO STOP DOOR MOVEMENT.

- REGARDLESS OF OCCUPANCY LOAD, THERE SHALL BE A FLOOR OR LANDING ON EACH SIDE OF A DOOR.

- THE FLOOR OR LANDING SHALL NOT BE MORE THAN 1/2 INCH LOWER THAN THE THRESHOLD OF THE DOORWAY. CHANGE IN LEVEL BETWEEN 1/4 INCH AND 1/2 INCH SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1 UNIT VERTICAL TO 2 UNITS HORIZONTAL. CHANGE IN LEVEL GREATER THAN 1/2 INCH SHALL BE ACCOMPLISHED BY MEANS OF A RAMP.

- MINIMUM MANEUVERING CLEARANCES AT DOORS SHALL BE AS SHOWN IN FIGURE 11B-26A, 11B-26B AND 11B-26C (2010 CBC). THE FLOOR OR GROUND AREA WITHIN THE REQUIRED CLEARANCES SHALL BE LEVEL AND CLEAR. THE LEVEL AREA SHALL HAVE A LENGTH IN THE DIRECTION OF THE DOOR SWING OF AT LEAST 60 INCHES AND A LENGTH OPPOSITE THE DIRECTION OF THE DOOR SWING OF 48 INCHES AS MEASURED AT RIGHT ANGLES TO THE PLANE OF THE DOOR IN ITS CLOSED POSITION.

- THE WIDTH OF THE LEVEL AREA ON THE SIDE TO WHICH THE DOOR SWINGS SHALL EXTEND 24 INCHES PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR DOORS AND 18 INCHES PAST THE STRIKE EDGE FOR INTERIOR DOORS. AN ADDITIONAL 12 INCHES IS REQUIRED AT THE PUSH SIDE IF A FRONTAL APPROACH, IF DOOR IS EQUIPPED WITH BOTH LATCH AND CLOSER.

- THE SPACE BETWEEN TWO CONSECUTIVE DOOR OPENINGS IN A VESTIBULE, SERVING OTHER THAN A REQUIRED EXIT STAIRWAY, SHALL PROVIDE A MINIMUM OF 48 INCHES OF CLEAR SPACE FROM ANY DOOR OPENING INTO SUCH VESTIBULE WHEN THE DOOR IS POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION. DOORS IN A SERIES SHALL SWING EITHER IN THE SAME DIRECTION OR AWAY FROM THE SPACE BETWEEN THE DOORS.

- MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 lbf FOR EXTERIOR AND INTERIOR DOORS. SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED NOT TO EXCEED 15 lbf.

- HAND-ACTIVATED DOOR OPENING HARDWARE SHALL BE CENTERED BETWEEN 30 INCHES AND 44 INCHES ABOVE THE FLOOR. LATCHING AND LOCKING DOORS THAT ARE HAND-ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL, SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER-TYPE HARDWARE, PANIC BARS, PUSH-PULL ACTIVATING BARS OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE. LOCKED EXIT DOORS SHALL OPERATE AS ABOVE IN EGRESS DIRECTION.

- THE BOTTOM 10 INCHES OF ALL DOORS, EXCEPT AUTOMATIC AND SLIDING, SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. WHERE NARROW FRAME DOORS ARE USED, A 10-INCH-HIGH SMOOTH PANEL SHALL BE INSTALLED ON THE PUSH SIDE OF THE DOOR, WHICH WILL ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.

- REGARDLESS OF THE OCCUPANT LOAD SERVED, EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT.

GENERAL NOTES

- THE CONTRACTOR SHALL REVIEW EXISTING CONDITIONS ON THE SITE DURING THE BIDDING. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING WORK. THE RESIDENT ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES PRIOR TO PROCEEDING.

- UNLESS OTHERWISE SHOWN OR NOTED, ALL PHASES OF WORK ARE TO CONFORM TO THE MINIMUM STANDARDS OF THE 2010 CBC (CALIFORNIA BUILDING CODE), AND ANY A.S.T.M. SPECIFICATIONS ON WHICH THESE STANDARDS ARE BASED. WHERE CONFLICT BETWEEN BUILDING CODES AND SPECIFICATIONS OCCURS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.

- ALL A.S.T.M. DESIGNATIONS REFERRED TO ON THESE DRAWINGS SHALL BE THE LATEST ADOPTED OR REVISED SPECIFICATION, AS OF THE DATE OF THESE DRAWINGS.

- ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS. DRAWINGS SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES.

- NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

- NEITHER THE OWNER NOR THE RESIDENT ENGINEER WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE; DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING AND BRACING AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE RESIDENT ENGINEER FREE AND HARMLESS FROM ALL CLAIMS, DEMANDS AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT. OBSERVATION VISITS TO THE SITE BY THE RESIDENT ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE SAFETY ITEMS.

- SATISFACTORY EXECUTION OF CONSTRUCTION IS DEPENDENT UPON CONFORMANCE WITH THE INTENT OF THESE DRAWINGS.

- CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOAD SHALL NOT EXCEED DESIGN LIVE LOAD FOR EACH PARTICULAR LEVEL. WHEN WEIGHT OF MATERIALS OR EQUIPMENT MAY EXCEED DESIGN LOAD, STRUCTURAL SYSTEMS SHALL BE SHORED.

- WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF THE WORK. THE DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

- ALL OMISSIONS AND/OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER. WORK SHOULD NOT PROCEED UNTIL A SOLUTION IS GIVEN BY THE RESIDENT ENGINEER.

- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ADEQUATE ERECTION SHORING AND BRACING AS REQUIRED FOR STABILITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE AND, UNLESS OTHERWISE INDICATED, DO NOT INDICATE THE METHOD OF CONSTRUCTION.

- PIPES, DUCTS, SLEEVES, OPENINGS, POCKETS, CHASES, BLOCK-OUTS, ETC. SHALL NOT BE PLACED IN SLABS, BEAMS, GIRDERS, COLUMNS, WALLS, FOUNDATION, ETC. NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR SUCH ITEMS, UNLESS SPECIFICALLY DETAILED ON THESE DRAWINGS. (IF ANY PIPES, DUCTS, ETC. DO OCCUR; THAT ARE NOT SHOWN ON THESE DRAWINGS, THE RESIDENT ENGINEER SHALL BE NOTIFIED.)

- THE WORK SITE SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH GREENBOOK AND 2010 CITY SUPPLEMENT, SECTION 7-8.

G-3

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

GENERAL NOTES

CITY OF SAN DIEGO, CALIFORNIA
SHEET 3 OF 66 SHEETS

W.B.S. B-00852, B-10008
B-10010

DESCRIPTION	BY	APPROVED	DATE	FILED
FOR CITY ENGINEER				
FOR CITY ENGINEER				
CONSTRUCTION ENGINEER				
INSPECTOR				
AS-BUILTS				
CONTRACTOR				
INSPECTOR				

SECTION HEAD
PROJECT MANAGER

CCS27 COORDINATE

CCS83 COORDINATE

36392-3-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

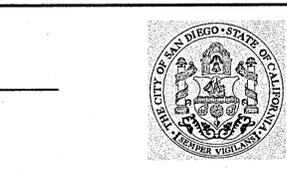
CONSULTANT

MANUEL OMCINA
ARCHITECTS INC.
ARCHITECTURE
PLANNING
INTERIORS
514 Pennsylvania Ave.
San Diego, CA 92103
619-295-9000 PH
619-295-4955 FX
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SCALE: HORIZONTAL NO SCALE
VERTICAL NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

ACCESS REGULATIONS FOR BATHING AND TOILET FACILITIES

BATHING AND TOILET FACILITIES - GENERAL:

- BATHING AND TOILET FACILITIES THAT SERVE BUILDINGS, FACILITIES OR PORTIONS OF BUILDINGS OR FACILITIES THAT ARE REQUIRED BY THESE STANDARDS TO BE ACCESSIBLE TO PERSONS WITH DISABILITIES, SHALL BE ON AN ACCESSIBLE ROUTE AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
- THE ACCESSIBLE FIXTURES AND CONTROLS REQUIRED IN THIS SECTION SHALL BE ON AN ACCESSIBLE ROUTE. AN UNOBSTRUCTED TURNING SPACE COMPLYING WITH CBC SECTION 1115B.3.1, ITEM 1, OR 1115B.3.2, ITEM 1, AS APPLICABLE, SHALL BE PROVIDED WITHIN AN ACCESSIBLE TOILET FACILITY. THE CLEAR FLOOR SPACES AT FIXTURES AND CONTROLS, THE ACCESSIBLE ROUTE AND THE TURNING SPACE MAY OVERLAP.
- WHERE SEPARATE FACILITIES ARE PROVIDED FOR PERSONS OF EACH SEX, THESE FACILITIES SHALL BE ACCESSIBLE TO PERSONS WITH DISABILITIES. WHERE UNISEX FACILITIES ARE PROVIDED, THESE FACILITIES SHALL BE ACCESSIBLE TO PERSONS WITH DISABILITIES.

SINGLE-ACCOMMODATION TOILET FACILITIES:

- WHEELCHAIR CLEARANCE: THERE SHALL BE SUFFICIENT SPACE IN THE TOILET ROOM FOR A WHEELCHAIR MEASURING 30 INCHES WIDE BY 48 INCHES LONG TO ENTER THE ROOM AND PERMIT THE DOOR TO CLOSE. THERE SHALL BE IN THE ROOM A CLEAR FLOOR SPACE OF AT LEAST 60 INCHES IN DIAMETER. NO DOOR SHALL ENCR OACH INTO THIS SPACE FOR MORE THAN 12 INCHES.
- CLEAR FLOOR SPACE AT FIXTURES: DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE REQUIRED FOR ANY FIXTURE.
- ACCESSIBLE WATER CLOSET: PROVIDE A MINIMUM OF 1 ACCESSIBLE WATER CLOSET IN COMPLIANCE WITH CBC SECTION 1115B.4.1. A MINIMUM 60 INCHES WIDE AND 48 INCHES DEEP MANEUVERING SPACE SHALL BE PROVIDED IN FRONT OF THE WATER CLOSET.
- ACCESSIBLE ROUTE: ALL DOOR, FIXTURES AND CONTROLS SHALL BE ON AN ACCESSIBLE ROUTE. THE MINIMUM CLEAR WIDTH OF AN ACCESSIBLE ROUTE SHALL BE 36 INCHES EXCEPT AT DOORS. IF A PERSON IN A WHEELCHAIR MUST MAKE A TURN AROUND AN OBSTRUCTION, THE MIN CLEAR WIDTH OF THE ACCESSIBLE ROUTE SHALL BE AS SHOWN IN CBC FIGURE 11B-5E. SEE ALSO CBC FIGURE 11B-1A.
- INTERIOR SURFACES: IN OTHER THAN DWELLING UNITS, TOILET ROOM FLOOR FINISH MATERIAL SHALL HAVE A SMOOTH, HARD NONABSORBENT SURFACE. THE INTERSECTIONS OF SUCH FLOORS WITH WALLS SHALL HAVE A SMOOTH, HARD NONABSORBENT VERTICAL BASE THAT EXTENDS UPWARD ONTO THE WALLS AT LEAST 4 INCHES. WALLS AND PARTITIONS WITHIN 2 FEET OF URINALS AND WATER CLOSETS SHALL HAVE A SMOOTH, HARD NONABSORBENT SURFACE, TO A HEIGHT OF 4 FEET ABOVE THE FLOOR, AND EXCEPT FOR STRUCTURAL ELEMENTS, THE MATERIALS USED IN SUCH WALLS SHALL BE A TYPE WHICH IS NOT ADVERSELY AFFECTED BY MOISTURE. ACCESSORIES SUCH AS GRAB BARS, TOWEL BARS, PAPER DISPENSERS AND SOAP DISHES, PROVIDED ON OR WITHIN WALLS, SHALL BE INSTALLED AND SEALED TO PROTECT STRUCTURAL ELEMENTS FROM MOISTURE.
- ACCESSIBLE LAVATORY: PROVIDE ONE ACCESSIBLE LAVATORY.
- PRIVACY LATCH: THE ENTRANCE DOOR SHALL CONTAIN A PRIVACY LATCH THAT COMPLIES WITH CBC SECTION 1117B.6.

PASSAGEWAYS:

- PASSAGEWAYS LEADING TO SANITARY FACILITIES SHALL HAVE A CLEAR ACCESS. ALL DOORWAYS LEADING TO SUCH SANITARY FACILITIES SHALL COMPLY WITH CBC SECTION 1133B.2, DOORS, DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE REQUIRED FOR ANY FIXTURE. ACCESSIBLE FIXTURES AND CONTROLS SHALL BE ON AN ACCESSIBLE ROUTE.

MULTIPLE ACCOMMODATION TOILET FACILITIES:

- WHEELCHAIR CLEARANCE: A CLEAR SPACE MEASURED FROM THE FLOOR TO A HEIGHT OF 27 INCHES ABOVE THE FLOOR, WITHIN THE SANITARY FACILITY ROOM, OF SUFFICIENT SIZE TO INSCRIBE A CIRCLE WITH A DIAMETER OF NOT LESS THAN 60 INCHES IN SIZE. OTHER THAN THE DOOR TO THE ACCESSIBLE WATER CLOSET COMPARTMENT, A DOOR IN ANY POSITION, MAY ENCR OACH INTO THIS SPACE BY NOT MORE THAN 12 INCHES.
- DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE REQUIRED FOR ANY FIXTURE.
- PROVIDE A MINIMUM OF 1 ACCESSIBLE WATER CLOSET IN COMPLIANCE WITH CBC SECTION 1115B.4.1 AND AT LEAST 1 ACCESSIBLE LAVATORY PER CBC SECTION 1115B.4.3.
- ACCESSIBLE WATER CLOSET COMPARTMENTS SHALL COMPLY WITH THE FOLLOWING:
 - THE COMPARTMENT SHALL BE A MINIMUM OF 60 INCHES WIDE.
 - IF THE COMPARTMENT HAS A SIDE-OPENING DOOR, A MINIMUM 60" WIDE AND 60" DEEP CLEAR FLOOR SPACE SHALL BE PROVIDED IN FRONT OF THE WATER CLOSET.
 - IF THE COMPARTMENT HAS AN END-OPENING DOOR (FACING THE WATER CLOSET), A MINIMUM 60 INCHES WIDE AND 48 INCHES DEEP CLEAR FLOOR SPACE SHALL BE PROVIDED IN FRONT OF THE WATER CLOSET. THE DOOR SHALL BE LOCATED IN FRONT OF THE CLEAR FLOOR SPACE AND DIAGONAL TO THE WATER CLOSET, WITH A MAXIMUM STILE WIDTH OF 4 INCHES.
 - THE WATER CLOSET COMPARTMENT SHALL BE EQUIPPED WITH A DOOR THAT HAS AN AUTOMATIC CLOSING DEVICE, AND SHALL HAVE A CLEAR, UNOBSTRUCTED OPENING WIDTH OF 32 INCHES WHEN LOCATED AT THE END AND 34 INCHES WHEN LOCATED AT THE SIDE WITH THE DOOR POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION.
 - THE INSIDE AND OUTSIDE OF THE COMPARTMENT DOOR SHALL BE EQUIPPED WITH A LOOP OR U-SHAPED HANDLE IMMEDIATELY BELOW THE LATCH. THE LATCH SHALL BE FLOP-OVER STYLE, SLIDING OR OTHER HARDWARE NOT REQUIRING THE USER TO GRASP OR TWIST, EXCEPT FOR DOOR OPENING WIDTHS AND DOOR SWINGS, A CLEAR, UNOBSTRUCTED ACCESS OF NOT LESS THAN 44 INCHES SHALL BE PROVIDED TO WATER CLOSET COMPARTMENTS DESIGNED FOR USE BY PERSONS WITH DISABILITIES. MANEUVERING SPACE AT THE COMPARTMENT DOOR SHALL COMPLY WITH CBC SECTION 1133B.2.4.2 AND 1133B.2.4.3, EXCEPT THAT THE SPACE IMMEDIATELY IN FRONT OF A WATER CLOSET COMPARTMENT SHALL NOT BE LESS THAN 48 INCHES AS MEASURED AT RIGHT ANGLE TO THE COMPARTMENT DOOR IN ITS CLOSED POSITION.

- WHERE SIX OR MORE COMPARTMENTS ARE PROVIDED WITHIN A MULTIPLE ACCOMMODATION TOILET ROOM, AT LEAST ONE COMPARTMENT SHALL COMPLY WITH ITEMS 3 AND 4 ABOVE, AND AT LEAST ONE ADDITIONAL AMBULATORY ACCESSIBLE COMPARTMENT SHALL BE 36 INCHES WIDE WITH AN OUTWARD SWINGING SELF CLOSING DOOR AND PARALLEL GRAB BARS COMPLYING WITH CBC SECTION 1115B.4.1, ITEM 3.

- IN OTHER THAN DWELLING UNITS, TOILET ROOM FLOOR FINISH MATERIAL SHALL HAVE A SMOOTH, HARD NONABSORBENT SURFACE. THE INTERSECTIONS OF SUCH FLOORS WITH WALLS SHALL HAVE A SMOOTH, HARD NONABSORBENT VERTICAL BASE THAT EXTENDS UPWARD ONTO THE WALLS AT LEAST 4 INCHES. WALLS AND PARTITIONS WITHIN 2 FEET OF URINALS AND WATER CLOSETS SHALL HAVE A SMOOTH, HARD NONABSORBENT SURFACE, TO A HEIGHT OF 4 FEET ABOVE THE FLOOR, AND EXCEPT FOR STRUCTURAL ELEMENTS, THE MATERIALS USED IN SUCH WALLS SHALL BE A TYPE WHICH IS NOT ADVERSELY AFFECTED BY MOISTURE. ACCESSORIES SUCH AS GRAB BARS, TOWEL BARS, PAPER DISPENSERS AND SOAP DISHES, PROVIDED ON OR WITHIN WALLS, SHALL BE INSTALLED AND SEALED TO PROTECT STRUCTURAL ELEMENTS FROM MOISTURE.

ACCESSIBLE WATER CLOSETS:

- THE CENTERLINE OF THE WATER CLOSET FIXTURE SHALL BE 18 INCHES FROM THE SIDE WALL OR PARTITION. ON THE OTHER SIDE OF THE WATER CLOSET, PROVIDE A MINIMUM OF 28 INCHES WIDE CLEAR FLOOR SPACE IF THE WATER CLOSET IS ADJACENT TO A FIXTURE OR 32 INCHES WIDE CLEAR FLOOR SPACE IF THE WATER CLOSET IS ADJACENT TO THE WALL OR PARTITION. THIS CLEAR FLOOR SPACE SHALL EXTEND FROM THE REAR WALL WALL TO THE FRONT OF THE WATER CLOSET.
 - PROVIDE CLEAR FLOOR SPACE AND MANEUVERING SPACE AT ACCESSIBLE WATER CLOSETS IN COMPLIANCE WITH CBC FIGURE 11B-1E (a, b, c, d or e).
 - GRAB BARS FOR WATER CLOSETS NOT LOCATED WITHIN A COMPARTMENT SHALL COMPLY WITH CBC SECTION 1115B.7 AND SHALL BE PROVIDED ON THE SIDE WALL CLOSET TO THE WATER CLOSET AND ON THE REAR WALL. GRAB BARS FOR WATER CLOSETS LOCATED WITHIN AMBULATORY ACCESSIBLE COMPARTMENTS SHALL COMPLY WITH CBC SECTION 1115B.7 AND SHALL BE PROVIDED ON THE SIDE WALL CLOSET TO THE WATER CLOSET AND ON THE REAR WALL. GRAB BARS FOR WATER CLOSETS LOCATED WITHIN AMBULATORY ACCESSIBLE COMPARTMENTS SHALL COMPLY WITH CBC SECTION 1115B.7 AND SHALL BE PROVIDED ON BOTH SIDES OF COMPARTMENT.
- GRAB BARS SHALL NOT PROJECT MORE THAN 3 INCHES INTO THE REQUIRED CLEAR FLOOR SPACE.

- THE SIDE GRAB BAR SHALL BE 42 INCHES LONG MINIMUM, LOCATED 12 INCHES MAXIMUM FROM THE REAR WALL AND EXTEND 54 INCHES MINIMUM FROM THE REAR WALL WITH THE FRONT END POSITIONED 24 INCHES MINIMUM IN FRONT OF THE WATER CLOSET. THE SIDE GRAB BAR SHALL BE SECURELY ATTACHED AND CENTERED 33 INCHES ABOVE AND PARALLEL TO THE FLOOR.
- THE REAR GRAB BAR SHALL BE 36 INCHES LONG MINIMUM AND EXTEND FROM THE CENTERLINE OF THE WATER CLOSET 12 INCHES MINIMUM ON ONE SIDE AND 24 INCHES MINIMUM ON THE OTHER SIDE. THE REAR GRAB BAR SHALL BE SECURELY ATTACHED AND CENTERED 33 INCHES ABOVE AND PARALLEL TO THE FLOOR, EXCEPT THAT WHERE A TANK TYPE TOILET IS USED WHICH OBSTRUCTS PLACEMENT AT 33 INCHES, THE GRAB BAR MAY BE AS HIGH AS 36 INCHES AND THE SPACE BETWEEN THE GRAB BAR AND THE TOP OF THE TANK SHALL BE 1-1/2 INCHES MINIMUM.

- THE HEIGHT OF ACCESSIBLE WATER CLOSETS SHALL BE A MINIMUM OF 17 INCHES AND A MAXIMUM OF 19 INCHES MEASURED TO THE TOP OF A MAXIMUM 2 INCH HIGH TOILET SEAT.
- CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING. CONTROLS FOR THE FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE FOR TOILET AREAS, NO MORE THAN 44 INCHES ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS FORCE (5bf).

- SEE CBC SECTION 1134A.7 FOR ADDITIONAL REQUIREMENTS FOR WATER CLOSETS IN PUBLICLY FUNDED HOUSING AND ALL NON-RESIDENTIAL OCCUPANCIES.

- AUTOMATIC SPRING TO LIFTED POSITION SEATS ARE NOT ALLOWED.

ACCESSIBLE URINALS:

- URINALS SHALL BE FLOOR MOUNTED, STALL-TYPE OR WALL HUNG. WHERE ONE OR MORE WALL-HUNG URINALS ARE PROVIDED, AT LEAST ONE WITH AN ELONGATED RIM PROJECTING A MINIMUM OF 14 INCHES FROM THE WALL AND A MAXIMUM OF 17 INCHES FROM THE WALL AND A MAXIMUM OF 17 INCHES ABOVE THE FLOOR SHALL BE PROVIDED.
- FLUSH CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST AND SHALL BE MOUNTED NO MORE THAN 44 INCHES ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 lbf. ELECTRONIC AUTOMATIC FLUSHING CONTROLS ARE ACCEPTABLE AND PREFERABLE.

- WHERE URINALS ARE PROVIDED, AT LEAST ONE SHALL HAVE A CLEAR FLOOR SPACE 30 INCHES BY 48 INCHES IN FRONT OF THE URINAL TO ALLOW FORWARD APPROACH. THIS CLEAR SPACE SHALL COMPLY WITH CBC SECTION 1118B.4

ACCESSIBLE LAVATORIES:

- FAUCET CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5lbf. 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.
- LAVATORIES, WHEN LOCATED ADJACENT TO A SIDE WALL OR PARTITION, SHALL BE A MINIMUM OF 18 INCHES TO THE CENTERLINE OF THE FIXTURE. ALL LAVATORIES THAT ARE DESIGNATED TO BE ACCESSIBLE SHALL BE A MIN 17 INCHES IN HORIZONTAL DEPTH AND MOUNTED WITH THE RIM OR COUNTER EDGE NO HIGHER THAN 34 INCHES ABOVE FINISHED FLOOR AND WITH VERTICAL CLEARANCE MEASURED FROM THE BOTTOM OF THE APRON OR THE OUTSIDE BOTTOM EDGE OF THE LAVATORY OF 29 INCHES REDUCING TO 27 INCHES AT A POINT LOCATED 8 INCHES BACK FROM THE FRONT EDGE. IN ADDITION, A MIN 9 INCH TOE CLEARANCE MUST BE PROVIDED EXTENDING BACK TOWARD THE WALL TO A DISTANCE NO MORE THAN 6 INCHES FROM THE BACK WALL. THE TOE CLEARANCE SPACE MUST BE FREE OF EQUIPMENT OR OBSTRUCTIONS.
- A CLEAR FLOOR SPACE 30 INCHES BY 48 INCHES SHALL BE PROVIDED IN FRONT OF A LAVATORY TO ALLOW FORWARD APPROACH. SUCH CLEAR FLOOR SPACE SHALL ADJOIN OR OVERLAP AN ACCESSIBLE ROUTE AND SHALL EXCEED A MAXIMUM OF 19 INCHES INTO KNEE AND TOE SPACE UNDERNEATH THE LAVATORY.

- HOT WATER AND DRAINPIPES ACCESSIBLE UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.

ACCESSORIES:

- ALL MIRRORS LOCATED ABOVE ACCESSIBLE LAVATORIES OR COUNTERTOPS SHALL BE INSTALLED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 40 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. WHEN MIRRORS ARE PROVIDED AT LOCATIONS OTHER THAN ABOVE LAVATORIES OR COUNTERTOPS, AT LEAST ONE SHALL BE INSTALLED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 35 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. MIRRORS IN FITTING AND DRESSING AREAS SHALL COMPLY WITH CBC SECTION 1117B.8.
- IF MEDICINE CABINETS ARE PROVIDED, AT LEAST ONE SHALL BE LOCATED WITH A USABLE SHELF NO HIGHER THAN 44 INCHES ABOVE THE FLOOR. A CLEAR FLOOR SPACE OF 30 INCHES BY 48 INCHES COMPLYING WITH CBC SECTION 1118B.4 SHALL BE PROVIDED IN FRONT OF A MEDICINE CABINET TO ALLOW A FORWARD OR PARALLEL APPROACH.

- WHERE TOWEL, SANITARY NAPKINS, WASTE RECEPTACLES, DISPENSERS, OTHER EQUIPMENT AND CONTROLS ARE PROVIDED, AT LEAST ONE OF EACH TYPE SHALL BE LOCATED ON AN ACCESSIBLE ROUTE, WITH ALL OPERABLE PARTS, INCLUDING COIN SLOTS, WITHIN 40 INCHES FROM THE FINISHED FLOOR AND SHALL COMPLY WITH CBC SECTION 1117B.6, CONTROLS AND OPERATING MECHANISMS.

- TOILET TISSUE DISPENSERS SHALL BE LOCATED ON THE WALL WITHIN 12 INCHES OF THE FRONT EDGE OF THE TOILET SEAT, MOUNTED BELOW THE GRAB BAR, AT A MINIMUM HEIGHT OF 19 INCHES, AND 36 INCHES MAXIMUM TO THE FAR EDGE FROM THE REAR WALL. DISPENSERS THAT CONTROL DELIVERY OR THAT DO NOT PERMIT CONTINUOUS PAPER FLOW SHALL NOT BE USED.

- WHERE LOCKERS ARE PROVIDED FOR THE PUBLIC, CLIENTS, EMPLOYEES, MEMBERS OR PARTICIPANTS, AT LEAST ONE LOCKER AND NOT LESS THAN 1 PERCENT OF ALL LOCKERS SHALL BE MADE ACCESSIBLE TO PERSONS WITH DISABILITIES. A PATH OF TRAVEL NOT LESS THAN 36 IN CLEAR WIDTH SHALL BE PROVIDED TO THESE LOCKERS.

GRAB BARS, TUB AND SHOWER SEATS:

- THE DIAMETER OR WIDTH OF THE GRIPPING SURFACE OF A GRAB BAR SHALL BE 1-1/4 INCHES TO 1-1/2 INCHES OR THE SHAPE SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE. IF GRAB BARS ARE MOUNTED ADJACENT TO A WALL, THE SPACE BETWEEN THE WALL AND THE GRAB BARS SHALL BE 1-1/2 INCHES.
- THE STRUCTURAL STRENGTH OF GRAB BARS, TUB AND SHOWER SEATS, FASTENERS AND MOUNTING DEVICES SHALL MEET THE FOLLOWING SPECIFICATIONS:
 - BENDING STRESS IN A GRAB BAR OR SEAT INDUCED BY THE MAXIMUM BENDING MOMENT FROM THE APPLICATION OF A 250 POUND POINT LOAD SHALL BE LESS THAN THE ALLOWABLE STRESS FOR THE MATERIAL OF THE GRAB BAR OR SEAT.
 - SHEAR STRESS INDUCED IN A GRAB BAR OR SEAT BY THE APPLICATION OF A 250 POUND POINT LOAD SHALL BE LESS THAN THE ALLOWABLE SHEAR STRESS FOR THE MATERIAL OF THE GRAB BAR OR SEAT, AND ITS MOUNTING BRACKET OR OTHER SUPPORT IS CONSIDERED TO BE FULLY RESTRAINED, THEN DIRECT AND TORSIONAL SHEAR STRESSES SHALL NOT EXCEED THE ALLOWABLE SHEAR STRESS.
 - SHEAR FORCE INDUCED IN A FASTENER OR MOUNTING DEVICE FROM THE APPLICATION OF A 250 POUND POINT LOAD SHALL BE LESS THAN THE ALLOWABLE LATERAL LOAD OF EITHER THE FASTENER OR MOUNTING DEVICE OR THE SUPPORTING STRUCTURE, WHICHEVER IS THE SMALLER ALLOWABLE LOAD.
 - TENSILE FORCE INDUCED IN A FASTENER BY A DIRECT TENSION FORCE OF A 250 POUND POINT LOAD, PLUS THE MAXIMUM MOMENT FROM THE APPLICATION OF A 250 POUND POINT LOAD, SHALL BE LESS THAN THE ALLOWABLE WITHDRAWAL LOAD BETWEEN THE FASTENER AND SUPPORTING STRUCTURE.
 - GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.
- A GRAB BAR AND ANY WALL OR OTHER SURFACE ADJACENT TO IT SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS. EDGES SHALL HAVE A MINIMUM RADIUS OF 1/8 INCH.

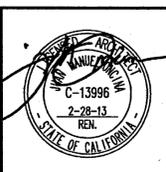
IDENTIFICATION SYMBOLS:

- DOORWAYS LEADING TO SANITARY FACILITIES SHALL BE IDENTIFIED BY A GEOMETRIC SYMBOL IN COMPLIANCE WITH THIS SECTION. GEOMETRIC SYMBOLS SHALL BE CENTERED HORIZONTALLY ON THE DOOR AT A HEIGHT OF 60 INCHES ABOVE THE FINISH FLOOR OR GROUND SURFACE MEASURED TO THE CENTER OF THE SYMBOL. EDGES OF SIGNS SHALL BE ROUNDED, CHAMFERED OR EASED. CORNERS OF SIGNS SHALL HAVE A MINIMUM RADIUS OF 1/8 INCH. SEE CBC SECTION 1117B.5.1, ITEM 1 FOR ADDITIONAL SIGNAGE REQUIREMENTS APPLICABLE TO SANITARY FACILITIES.
- MEN'S SANITARY FACILITIES SHALL BE IDENTIFIED BY AN EQUILATERAL TRIANGLE, 1/4 INCH THICK WITH EDGES 12 INCHES LONG AND A VERTEX POINTING UPWARD. THE TRIANGLE SYMBOL SHALL CONTRAST WITH THE DOOR, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND.
- WOMEN'S SANITARY FACILITIES SHALL BE IDENTIFIED BY A CIRCLE, 1/4 INCH THICK AND 12 INCHES IN DIAMETER. THE CIRCLE SYMBOL SHALL CONTRAST WITH THE DOOR, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND.
- UNISEX SANITARY FACILITIES SHALL BE IDENTIFIED BY A CIRCLE 1/4 INCH THICK, 12 INCHES IN DIAMETER WITH A 1/4 INCH THICK TRIANGLE SUPERIMPOSED ON THE CIRCLE AND WITHIN THE 12 INCH DIAMETER. THE TRIANGLE SYMBOL SHALL CONTRAST WITH THE CIRCLE SYMBOL, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND. THE CIRCLE SYMBOL SHALL CONTRAST WITH THE DOOR, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 MANUEL ONCINA ARCHITECTS INC.
 ARCHITECTURE PLANNING INTERIORS
 514 Penneyvaria Ave.
 San Diego, CA 92103
 619.295.4950 PH
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 www.oncina.com

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT

WARNING

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APPROVED BY:	FOR CITY ENGINEER	CHECKED BY:	CONSTRUCTION ENGINEER	INSPECTOR
DESCRIPTION	BY	APPROVED	DATE	FILMED
DSO BACKCHECK	MOA		2/14/2012	
AS-BUILTS				
CONTRACTOR		DATE STARTED		
INSPECTOR		DATE COMPLETED		

SECTION HEAD: PROJECT MANAGER
 CCS27 COORDINATOR
 CCS83 COORDINATOR

36392-4-D

POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

FUNDING CP/SAP: _____ SPEC. NO.: _____

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

GENERAL NOTES

CITY OF SAN DIEGO, CALIFORNIA
 SHEET 4 OF 66 SHEETS

W.B.S. B-00852, B-10008
 B-10010

FOR CITY ENGINEER	DATE	SECTION HEAD
3/9/12		PROJECT MANAGER

ACCESS REGULATIONS FOR BATHING AND TOILET FACILITIES (cont.)

BATHING AND SHOWER FACILITIES:

- WHERE FACILITIES FOR BATHING ARE PROVIDED FOR THE PUBLIC, CLIENTS OR EMPLOYEES, INCLUDING SHOWERS OF BATHTUBS, AT LEAST ONE SHOWER OR BATHTUB AND SUPPORT FACILITIES SUCH AS LOCKERS, AND NOT LESS THAN 1 PERCENT OF ALL FACILITIES, SHALL BE ACCESSIBLE AND CONFORM TO THE FOLLOWING STANDARDS:
- SHOWERS IN ALL OCCUPANCIES SHALL BE FINISHED AS SPECIFIED IN CBC SECTIONS 1210.1, 1210.3 AND 1210.4 TO A HEIGHT OF NOT LESS THAN 70 INCHES ABOVE THE DRAIN INLET. MATERIALS OTHER THAN STRUCTURAL ELEMENTS USED IN SUCH WALLS SHALL BE OF A TYPE WHICH IS NOT ADVERSELY AFFECTED BY MOISTURE.
- DOORS AND PANELS OF SHOWER AND BATHTUB ENCLOSURES SHALL BE SUBSTANTIALLY CONSTRUCTED FROM APPROVED, SHATTER RESISTANT MATERIALS. HINGED SHOWER DOORS SHALL OPEN OUTWARD.
- GLAZING USED IN DOORS AND PANELS OF SHOWER AND BATHTUB ENCLOSURES SHALL BE FULLY TEMPERED, LAMINATED SAFETY GLASS OR APPROVED PLASTIC. WHEN GLASS IS USED, IT SHALL HAVE A MINIMUM THICKNESS OF NOT LESS THAN 1/8 INCH WHEN FULLY TEMPERED, OR 1/4 INCH WHEN LAMINATED, AND SHALL PASS THE TEST REQUIREMENTS OF CBC SECTION 2406.
- PLASTICS USED IN DOORS AND PANELS OF SHOWERS AND BATHTUB ENCLOSURES SHALL BE OF A SHATTER RESISTANT TYPE.

PASSAGEWAYS:

- PASSAGEWAYS LEADING TO SANITARY FACILITIES SHALL HAVE A CLEAR ACCESS. ALL DOORWAYS LEADING TO SUCH SANITARY FACILITIES SHALL COMPLY WITH CBC SECTION 1133B.2. DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE REQUIRED FOR ANY FIXTURE. ACCESSIBLE FIXTURES AND CONTROLS SHALL BE ON AN ACCESSIBLE ROUTE.

ACCESSIBLE SHOWERS:

- SIZE AND CLEARANCE: ALTERNATE ROLL-IN SHOWER 60 INCHES MINIMUM IN WIDTH BETWEEN WALL SURFACES AND 36 INCHES IN DEPTH WITH AN ENTRANCE OPENING WIDTH OF 36 INCHES MINIMUM. SHOWER AND COMPARTMENT SPACE SHALL COMPLY WITH CBC FIGURE 11B-2B.
- THRESHOLDS IN ROLL-IN TYPE SHOWERS SHALL BE 1/2 INCH HIGH MAXIMUM AND SHALL COMPLY WITH CBC SECTION 1124B.2.
- WATER CONTROLS SHALL BE OF A SINGLE LEVER DESIGN, OPERABLE WITH ONE HAND, AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 lbf. THE CENTERLINE OF THE CONTROLS SHALL BE LOCATED 39 TO 41 INCHES ABOVE THE SHOWER FLOOR.
- CONTROLS IN A 60-INCH MINIMUM BY 36-INCH ALTERNATE ROLL-IN SHOWER SHALL BE LOCATED ON THE SIDE WALL OF THE COMPARTMENT ADJACENT TO THE SEAT AND THE CENTERLINE OF THE CONTROLS SHALL BE WITHIN A RANGE OF NO LESS THAN 19 INCHES AND NO MORE THAN 27 INCHES FROM THE SEAT WALL AS SHOWN IN CBC FIGURE 11B-2B.
- A FLEXIBLE HAND-HELD SPRAYER UNIT WITH A HOSE AT LEAST 60 INCHES LONG THAT CAN BE USED BOTH AS A FIXED SHOWER HEAD AND AS A HAND-HELD SHOWER SHALL BE PROVIDED. THIS UNIT SHALL BE MOUNTED SUCH THAT THE TOP OF THE MOUNTING BRACKET IS AT A MAXIMUM HEIGHT 48 INCHES ABOVE THE SHOWER FLOOR.
- THE HAND-HELD SPRAYER UNIT IN A 60-INCH MINIMUM BY 36-INCH ALTERNATE ROLL-IN SHOWER SHALL BE LOCATED ON THE SIDE WALL OF THE COMPARTMENT ADJACENT TO THE SEAT AND THE CENTERLINE OF THE UNIT SHALL BE 18 INCHES FROM THE SEAT WALL AS SHOWN IN CBC FIGURE 11B-2B.
- THE MAXIMUM FLOOR SLOPE OF THE FLOOR SHALL BE 1 UNIT VERTICAL IN 50 UNITS HORIZONTAL (2% SLOPE) IN ANY DIRECTION. WHERE DRAINS ARE PROVIDED, GRATE OPENINGS SHALL BE A MAXIMUM OF 1/4" INCH AND LOCATED FLUSH WITH THE FLOOR SURFACE.
- A FOLDING SEAT MOUNTED 18 INCHES ABOVE THE FLOOR, AND WITH A MINIMUM SPACE OF 1 INCH AND MAXIMUM SPACE OF 1 1/2" INCHES ALLOWED BETWEEN THE EDGE OF THE SEAT AND ANY WALL. WHEN FOLDED, THE SEAT SHALL NOT EXTEND MORE THAN 6 INCHES FROM THE MOUNTING WALL. THE SEAT DIMENSIONS AND MOUNTING POSITION SHALL COMPLY WITH CBC FIGURES 11B-2A, 11B02B, 11B-2C AND 11B-2D. THE STRUCTURAL STRENGTH OF SEATS AND THEIR ATTACHMENTS SHALL COMPLY WITH CBC SECTION 1115B.7.2.
- GRAB BARS LOCATED ON WALLS ADJACENT TO AND OPPOSITE THE SEAT. GRAB BARS SHALL ALSO COMPLY WITH THE DIAMETER, LOADING AND PROJECTION REQUIREMENTS OF CBC SECTION 1115B.7. GRAB BARS SHALL BE MOUNTED BETWEEN A MINIMUM OF 33 INCHES AND A MAXIMUM OF 36 INCHES ABOVE THE SHOWER FLOOR WITH AN L-SHAPED GRAB BAR MOUNTED ON WALLS OPPOSITE AND ADJACENT TO THE FRONT EDGE OF THE SEAT, BUT NOT EXTENDED TO INCLUDE THAT PORTION OF WALL OVER THE SEAT.
- WHEN A SOAP DISH IS PROVIDED, IT SHALL BE LOCATED ON THE CONTROL WALL AT A MAXIMUM HEIGHT OF 40 INCHES ABOVE SHOWER FLOOR AND WITHIN REACH LIMITS FROM THE SEAT.
- ENCLOSURES, WHEN PROVIDED FOR SHOWER COMPARTMENTS, SHALL NOT OBSTRUCT CONTROLS OR OBSTRUCT TRANSFER FROM WHEELCHAIRS ONTO SHOWER SEATS.

SUMMARY OF SPECIAL INSPECTION

- CONCRETE AND MASONRY ANCHORS: FOR ALL THREADED ROD AND REINFORCING STEEL ANCHORED WITH EPOXY ADHESIVE IN CONCRETE OR MASONRY; FOR ALL EXPANSION ANCHORS IN CONCRETE OR MASONRY, WHEN INDICATED ON PLANS AND NOTES. INSPECTION/TESTING SHALL BE IN CONFORMANCE WITH THE ANCHOR MANUFACTURER'S ICC REPORT AND SHALL INCLUDE A MINIMUM VERIFICATION ON HOLE DEPTH AND DIAMETER, CLEAN OUT, ALL MATERIALS, AND INSTALLATION TORQUE.

SPECIAL INSPECTION - GENERAL NOTES:

- The special inspections listed are in addition to the called inspections required by CBC Chapter 1, Division II, Section 110. Special inspection is not a substitute for inspections required by a City Inspector.
- Continuous inspection is always required during the performance of the work unless otherwise specified. When work in more than one category of work requiring special inspection is to be performed simultaneously, or the geographic location of the work is such that it cannot be continuously observed in as defined in CBC Section 1702, it is the agent's responsibility to employ a sufficient number of inspectors to assure that all the work is inspected in accordance with those provisions.
- The special inspectors must be certified by the City of San Diego Development Services to perform the type of inspection specified.
 - Soils inspections by the Soils engineer of record.
 - Smoke Control System, by the Mechanical engineer of record.
 - When waived by the Building Official.
- The construction materials testing laboratory must be approved by the City of San Diego Development Services for testing of materials, systems, components and equipment.
- It is the responsibility of the contractor to notify the special inspector or inspection agency at least one working day prior to performing any work that requires special inspection.
- Work requiring special inspection that is installed or covered without the approval of the City Inspector is subject to removal or exposure at no cost to the Owner.

NOTICE TO THE APPLICANT / OWNER / OWNER'S AGENT / ARCHITECT OR ENGINEER OF RECORD:

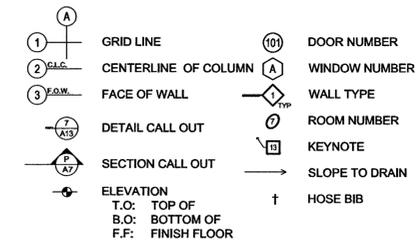
By using this permitted construction drawings for construction/installation of the work specified herein, you agree to comply with the requirements of City of San Diego for special inspections, structural observations, construction material testing and off-site fabrication of building components, contained in the statement of special inspections and, as required by the California construction codes.

NOTICE TO THE CONTRACTOR / BUILDER / INSTALLER / SUB-CONTRACTOR / OWNER-BUILDER:

By using this permitted construction drawings for construction/installation of the work specified herein, you acknowledge and are aware of, the requirements contained in the statement of special inspections. You agree to comply with the requirements of City of San Diego for special inspections, structural observations, construction material testing and off-site fabrication of building components, contained in the statement of special inspections and, as required by the California construction codes.

A PROPERTY OWNER'S FINAL REPORT FROM FOR WORK REQUIRED TO HAVE SPECIAL INSPECTIONS, TESTING AND STRUCTURAL OBSERVATIONS MUST BE COMPLETED BY THE PROPERTY OWNER, PROPERTY OWNER'S AGENT OF RECORD, ARCHITECT OF RECORD, OR ENGINEER OF RECORD AND SUBMITTED TO THE INSPECTION SERVICES DIVISION.

ARCHITECTURAL LEGEND



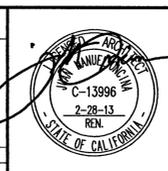
ABBREVIATIONS

- ADA: Americans with Disabilities Act of 1992
- AFF: Above Finished Floor
- ALUM: Aluminum
- ARCH: Architectural
- ASTM: American Society for Testing and Materials
- B.O.: Bottom Of
- BD: Board
- CONC: Concrete
- CONT: Continuous
- CY: Cubic Yard
- D: Deep
- DF: Douglas Fir
- DIA: Diameter
- DIM: Dimension
- DN: Down
- DS: Downspout
- (E): Existing
- EQ: Equal
- FAR: Floor Area Ratio
- FD: Floor drain
- FF: Finished Floor
- FT: Foot, Feet
- GA: Gauge
- GALV: Galvanized
- GFCI: Ground Fault Circuit Interrupter
- GFI: Ground Fault Interrupter
- GYP BD: Gypsum Board
- HB: Hose Bib
- HR: Hour
- ID: Inside Diameter
- IN: Inch
- LB: Pound (weight)
- MAX: Maximum
- MIN: Minimum
- NIC: Not in Contract
- NTS: Not To Scale
- OC: On Center
- OD: Outside Diameter
- PTD: Painted
- PLAM: Plastic Laminate
- R: Radius
- RCP: Reflected Ceiling Plan
- SCHED: Schedule
- SF: Square Foot
- SG: Square
- SS: Stainless Steel
- STL: Steel
- T&G: Tongue & Groove
- T.O.: Top of
- TYP: Typical
- UL: Underwriters' Laboratories
- UON: Unless Otherwise Noted
- VIF: Verify in the Field
- WD: Wood
- WH: Water Heater

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 MANUEL ORCINA
 ARCHITECTS INC.
 ARCHITECTURE
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 www.orcina.com

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**CITY OF SAN DIEGO
PUBLIC WORKS PROJECT**



WARNING
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APPROVED BY:	FOR CITY ENGINEER
CHECKED BY:	CONSTRUCTION ENGINEER
CHECKED BY:	INSPECTOR

FUNDING OP/SAP: _____ SPEC. NO.: _____ G-5

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

GENERAL NOTES

CITY OF SAN DIEGO, CALIFORNIA
SHEET 5 OF 66 SHEETS

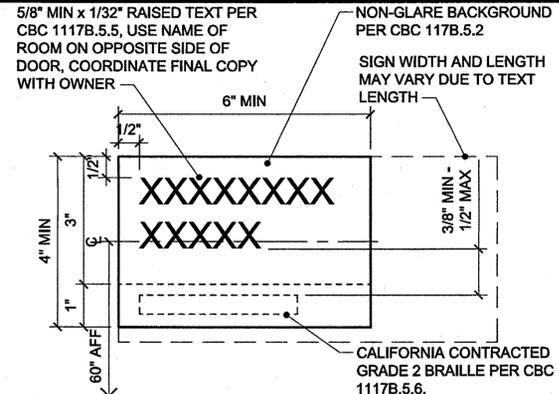
W.B.S. B-00952, B-10008
B-10010

DESCRIPTION	BY	APPROVED	DATE	FILED	SECTION HEAD
DSD BACKCHECK	MOA		2/14/2012		PROJECT MANAGER
AS-BUILTS					CCS27 COORDINATE
					CCS83 COORDINATE

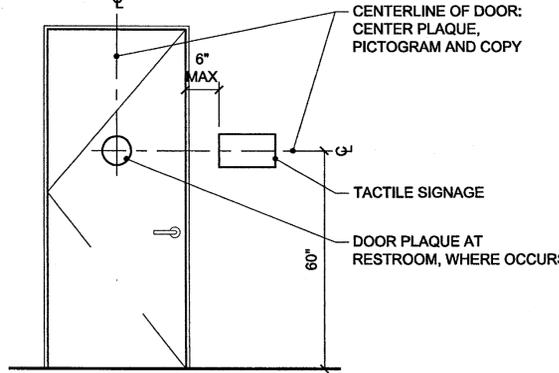
CONTRACTOR: _____ DATE STARTED: _____
 INSPECTOR: _____ DATE COMPLETED: _____

36392- 5-D

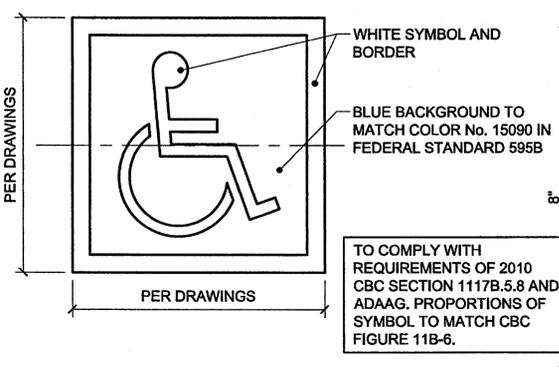
POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES



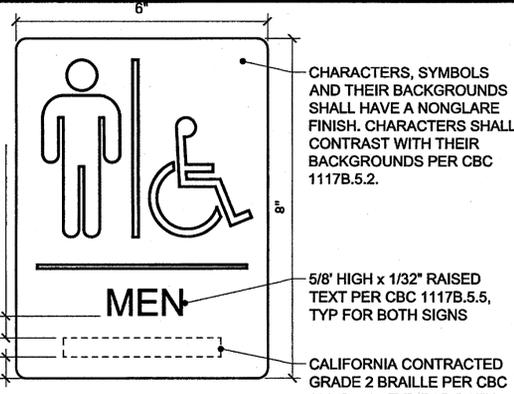
10 TACTILE SIGNAGE - ROOM I.D.
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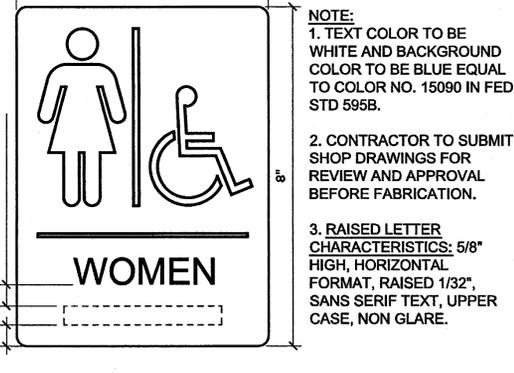
11 SIGNAGE MOUNTING LOCATION
SCALE: NOT TO SCALE



12 INTERNATIONAL SYMBOL OF ACCESSIBILITY
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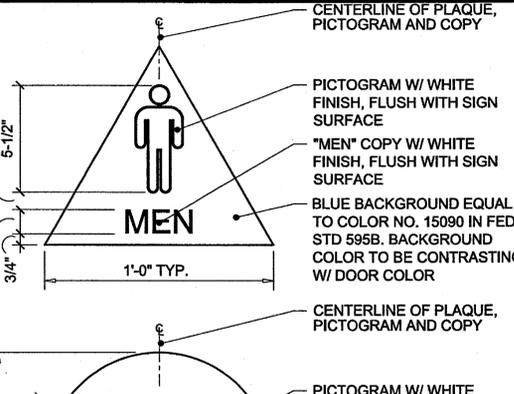
8 TACTILE SIGNAGE - RESTROOM
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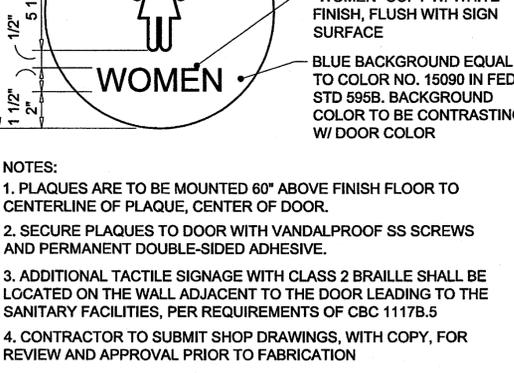
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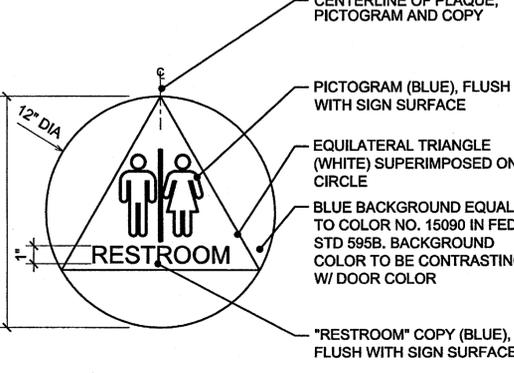
7 RESTROOM DOOR PLAQUE
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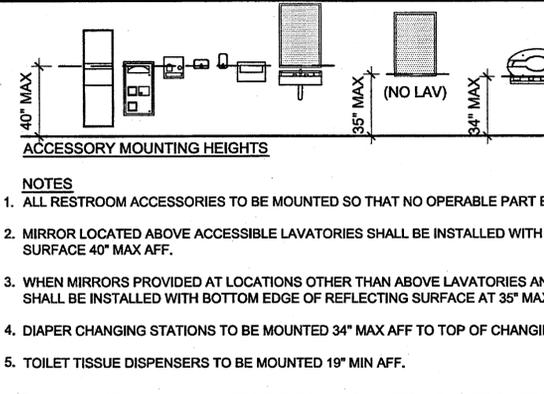
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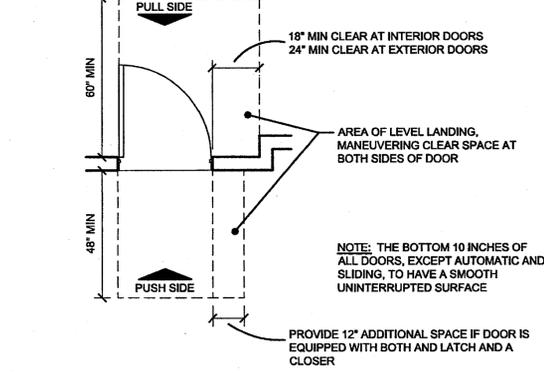
2 ACCESS REQUIREMENTS AT TOILET
SCALE: 3/8"=1'-0"



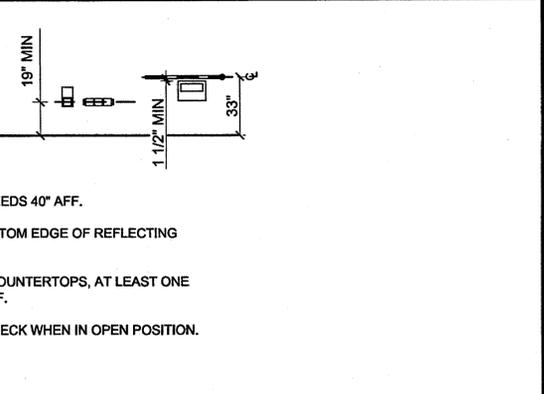
4 REQUIRED CLEARANCES AT ALL DOORS
SCALE: NOT TO SCALE



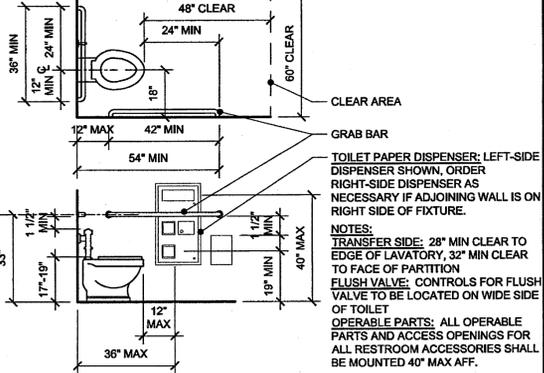
5 ACCESSIBLE SHOWER
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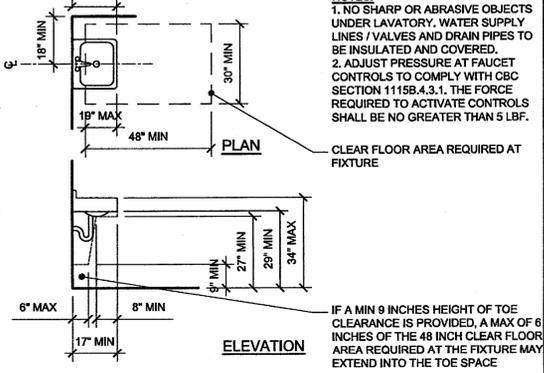
3 ACCESS REQUIREMENTS AT LAVATORY
SCALE: 3/8"=1'-0"



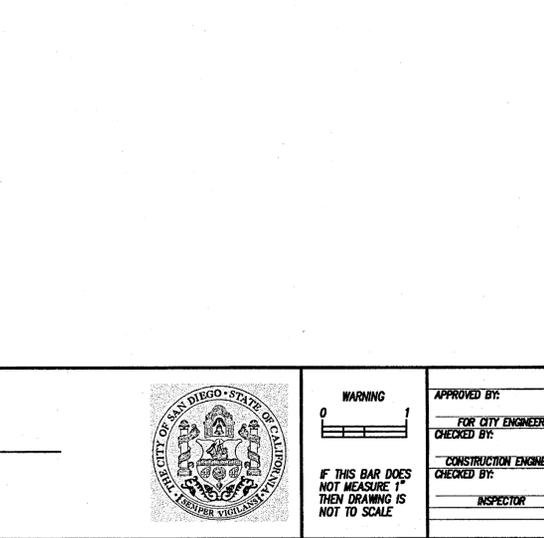
11 SIGNAGE MOUNTING LOCATION
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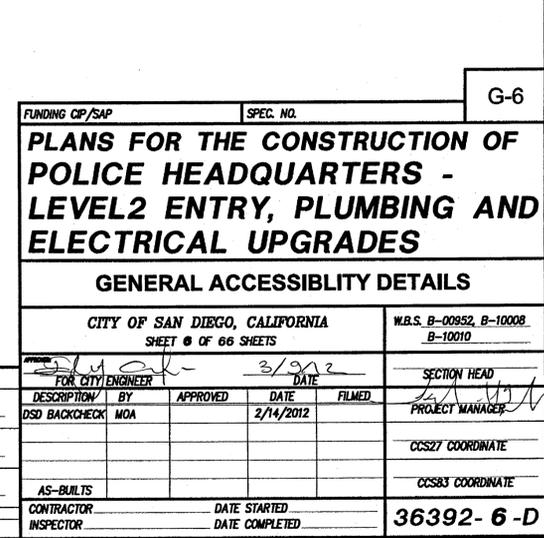
12 INTERNATIONAL SYMBOL OF ACCESSIBILITY
SCALE: 6"=1'-0"



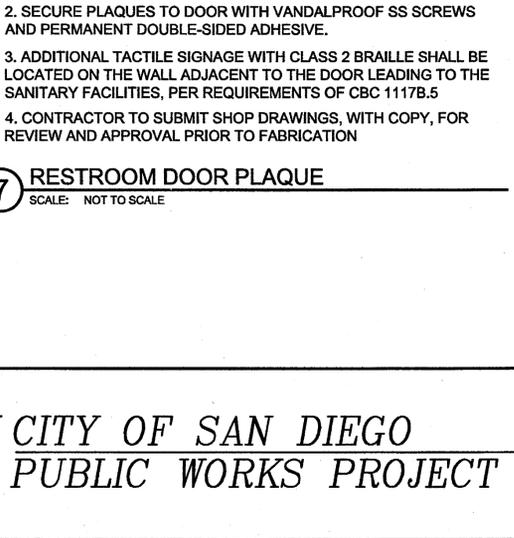
7 RESTROOM DOOR PLAQUE
SCALE: NOT TO SCALE



1 RESTROOM ACCESSORY MOUNTING HEIGHTS
SCALE: 1/4"=1'-0"



2 ACCESS REQUIREMENTS AT TOILET
SCALE: 3/8"=1'-0"



4 REQUIRED CLEARANCES AT ALL DOORS
SCALE: NOT TO SCALE

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
MANUEL ONCINA ARCHITECTS INC.
ARCHITECTURE PLANNING INTERIORS
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San Diego, CA 92103
619/295-4900 PH
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www.oncinainc.com

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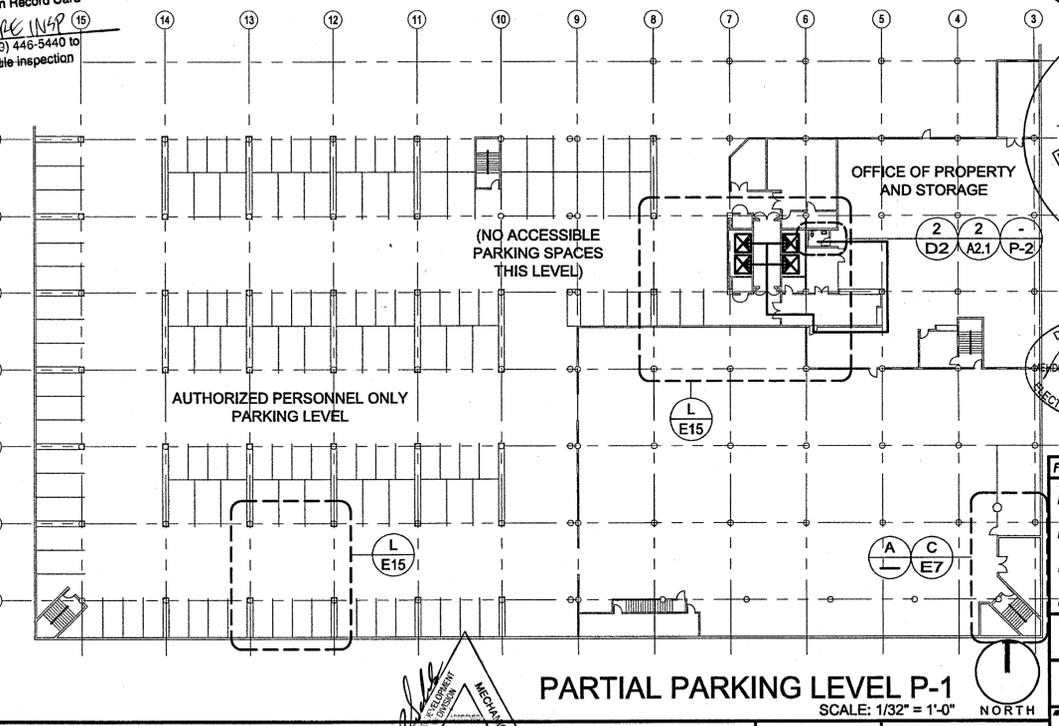
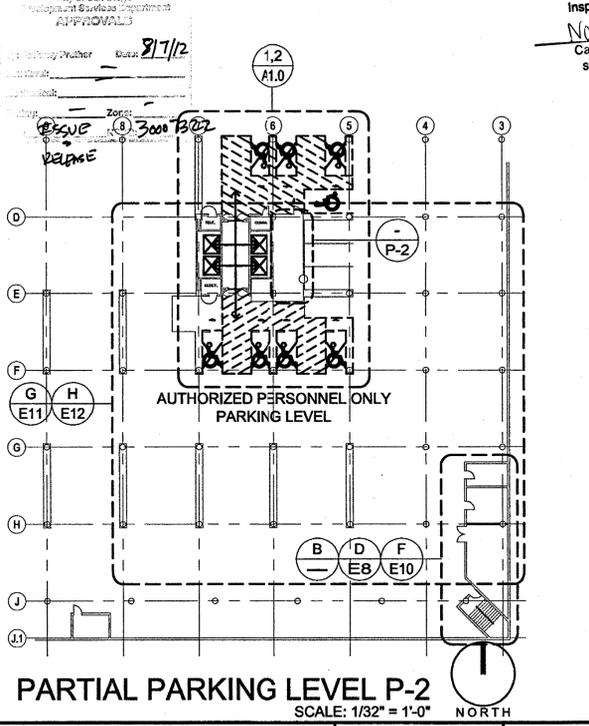
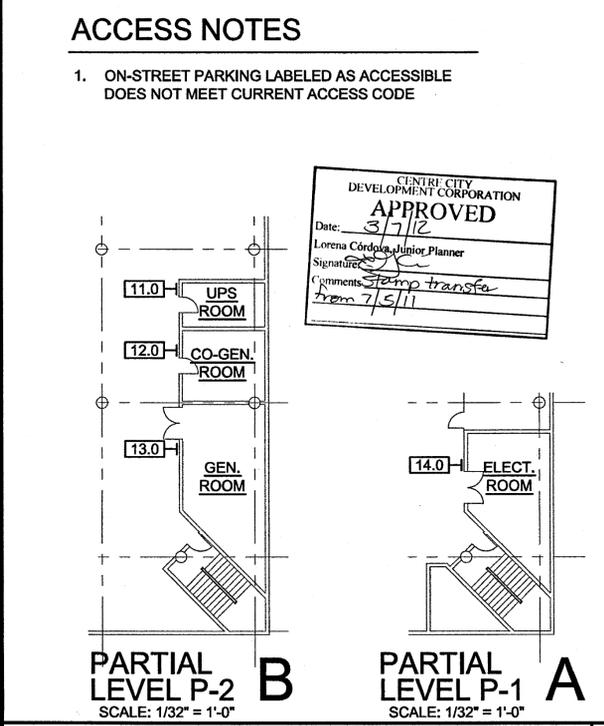
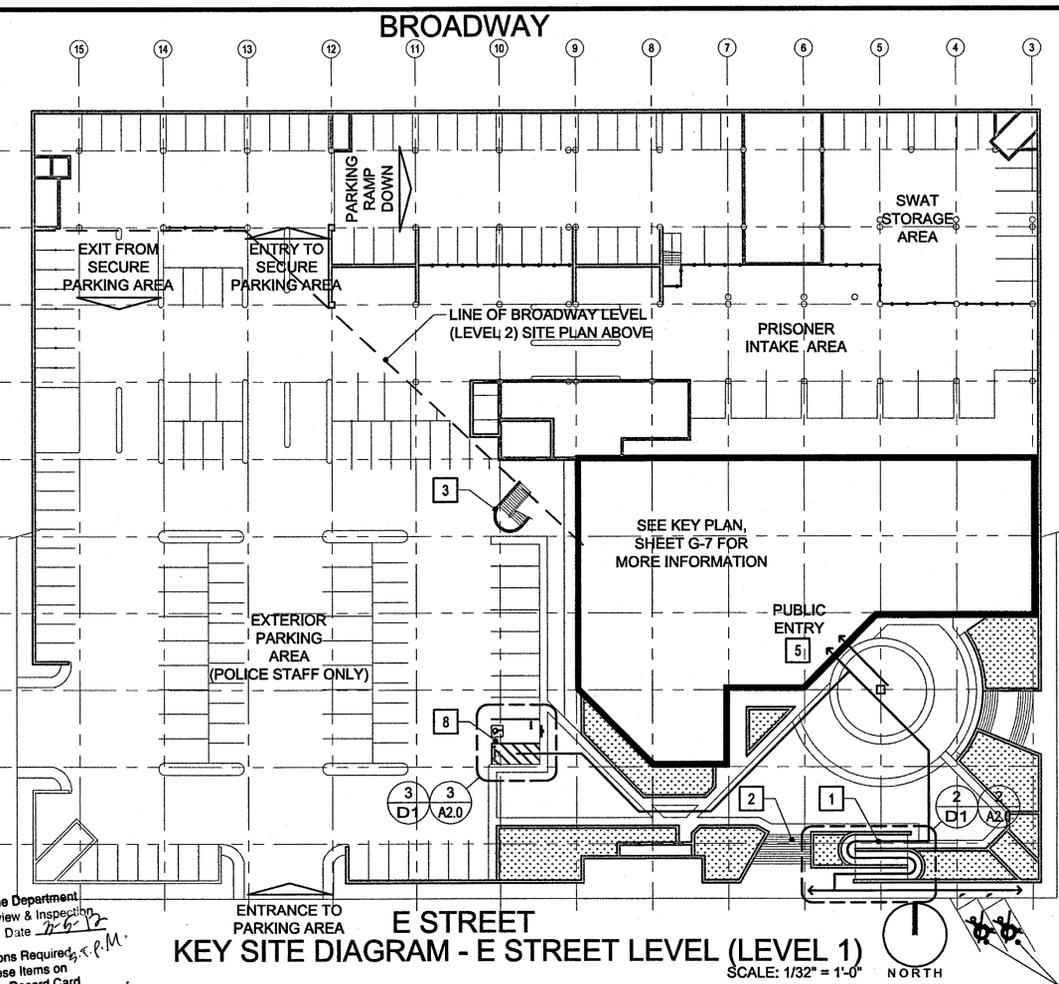
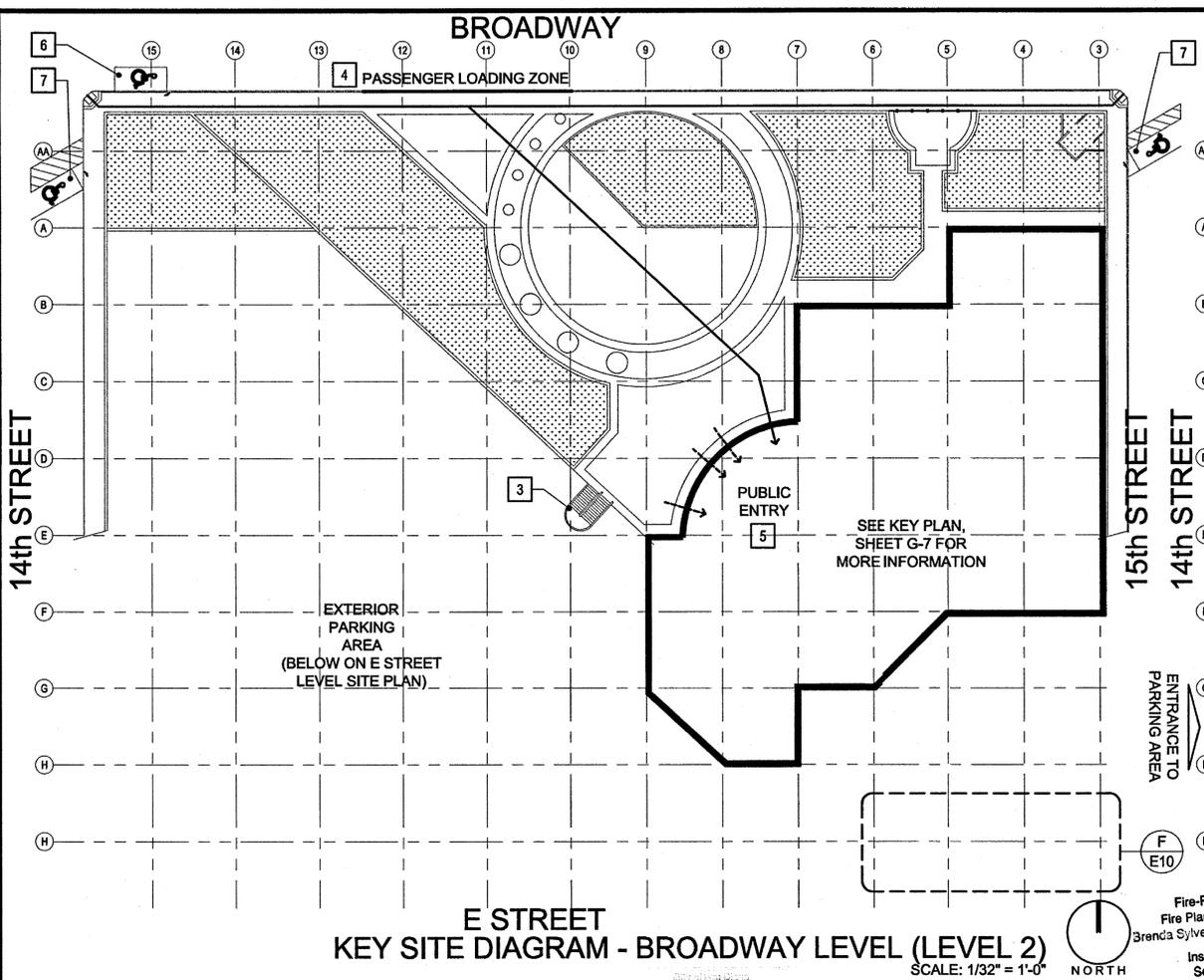
CITY OF SAN DIEGO PUBLIC WORKS PROJECT

APPROVED BY: [Signature]
CHECKED BY: [Signature]

WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESCRIPTION	BY	APPROVED	DATE	FILED
AS-BUILTS				
CONTRACTOR				
INSPECTOR				

GENERAL ACCESSIBILITY DETAILS	
CITY OF SAN DIEGO, CALIFORNIA SHEET # OF 66 SHEETS	W.B.S. B-00952, B-10008 B-10010
SECTION HEAD	PROJECT MANAGER
CCS27 COORDINATE	CCS83 COORDINATE
DATE STARTED	DATE COMPLETED
	36392-6-D



- NOTES**
- EXISTING RAMP, DOES NOT MEET CURRENT ACCESS CODE, REMOVE AND REPLACE RAILING AT CODE COMPLIANT HEIGHT.
 - EXISTING STAIR, ACCESSIBLE
 - EXISTING STAIR, DOES NOT MEET CURRENT ACCESS CODE
 - EXISTING PASSENGER DROP-OFF AND LOADING ZONE, DOES NOT MEET CURRENT ACCESS CODE
 - PRIMARY PUBLIC ENTRANCE, ACCESSIBLE, APPLY ISA DECAL TO DOOR INDICATING ACCESSIBLE.
 - EXISTING ACCESSIBLE PARKING SPACE
 - EXISTING PARKING SPACE MARKED ACCESSIBLE, DOES NOT MEET CURRENT ACCESS CODE
 - NEW VAN ACCESSIBLE PARKING SPACE

- GENERAL NOTES**
- IF BUILDING INSPECTOR DETERMINES NON-COMPLIANCE WITH ANY ACCESSIBILITY PROVISIONS, HE/SHE SHALL REQUIRE COMPLETE, DETAILED PLANS CLEARLY SHOWING ALL EXISTING NON-COMPLYING CONDITIONS AND THE PROPOSED MODIFICATIONS TO MEET CURRENT ACCESSIBILITY PROVISIONS AFFECTED BY THE REMODEL (INCLUDING SITE PLAN, FLOOR PLANS, DETAILS, ETC.). THE PLANS MUST BE STAMPED BY THE FIELD INSPECTOR AND RESUBMITTED TO THE BUILDING DEVELOPMENT REVIEW DIVISION.

- SYMBOL LEGEND**
- ACCESSIBLE PATH OR TRAVEL
 - ACCESSIBLE ENTRANCE
 - ENTRANCE TO BE MADE ACCESSIBLE, PER SCOPE OF THIS PROJECT
 - ACCESSIBLE PARKING SPACE
 - PARKING SPACE WITH ACCESS SIGNAGE, DOES NOT MEET CURRENT ACCESS CODE
 - ACCESSIBLE ELEVATOR, TYP OF 4

Fire-Rescue Department
Fire Plan Review & Inspection
Brenda Sylvester Date 2/6/12

Inspections Required, See these Items on Inspection Record Card

No FIRE INSPECTION

Call (619) 446-5440 to schedule inspection

#240535

BUILDING DEVELOPMENT REVIEW DIVISION-STRUCTURAL

John C. Anderson Date 3-7-12

DEVELOPMENT SERVICES DIVISION-NASHOLAHNA DATE 3/7/12

#240535

ELECTRICAL PLAN REVIEW DIVISION

FUNDING CIP/SAP SPEC. NO. G-7

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

KEY SITE / PARKING PLANS

CITY OF SAN DIEGO, CALIFORNIA		SHEET 7 OF 66 SHEETS		W.B.S. B-00952, B-10008	
DATE: 3/9/12		DATE: 2/14/2012		SECTION HEAD	
FOR CITY ENGINEER	BY: [Signature]	APPROVED	DATE	FILED	PROJECT MANAGER
DESCRIPTION	BY	APPROVED	DATE	FILED	CCS27 COORDINATE
AS-BUILTS	CONTRACTOR	INSPECTOR	DATE STARTED	DATE COMPLETED	CCS83 COORDINATE
					36392-7-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

MANUEL ONCINA ARCHITECTS INC. ARCHITECTURE PLANNING INTERIORS

514 Pennsylvania Ave. San Diego, CA 92103

619/295-4955 FAX 619/295-4955

www.moa.com

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MOA

STATE OF CALIFORNIA

C-13996

2-28-13

RBL

CITY OF SAN DIEGO PUBLIC WORKS PROJECT

JOSE SALCEDO

MECHANICAL

WARNING

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APPROVED BY: [Signature]

FOR CITY ENGINEER

CHECKED BY: [Signature]

CONSTRUCTION ENGINEER

INSPECTOR

CITY OF SAN DIEGO - STATE OF CALIFORNIA

KEY SECTION

NO SCALE

ROOF

LEVEL 7

LEVEL 6

LEVEL 5

LEVEL 4

LEVEL 3

BROADWAY LEVEL (LEVEL 2)

E STREET LEVEL (LEVEL 1)

PARKING LEVEL P-1

PARKING LEVEL P-2

GRADE

GRADE

NORTH

SOUTH

NOTES

- 1 PRIMARY PUBLIC ENTRANCE, ACCESSIBLE, PROVIDE ISA DECAL, 6"x6" MIN PER DETAIL 12/G-6
- 2 EXISTING DRINKING FOUNTAIN, DOES NOT MEET CURRENT ACCESS CODE, TO BE REPLACED WITH ACCESSIBLE LOW UNIT PER PLUMBING DRAWINGS

GENERAL NOTES

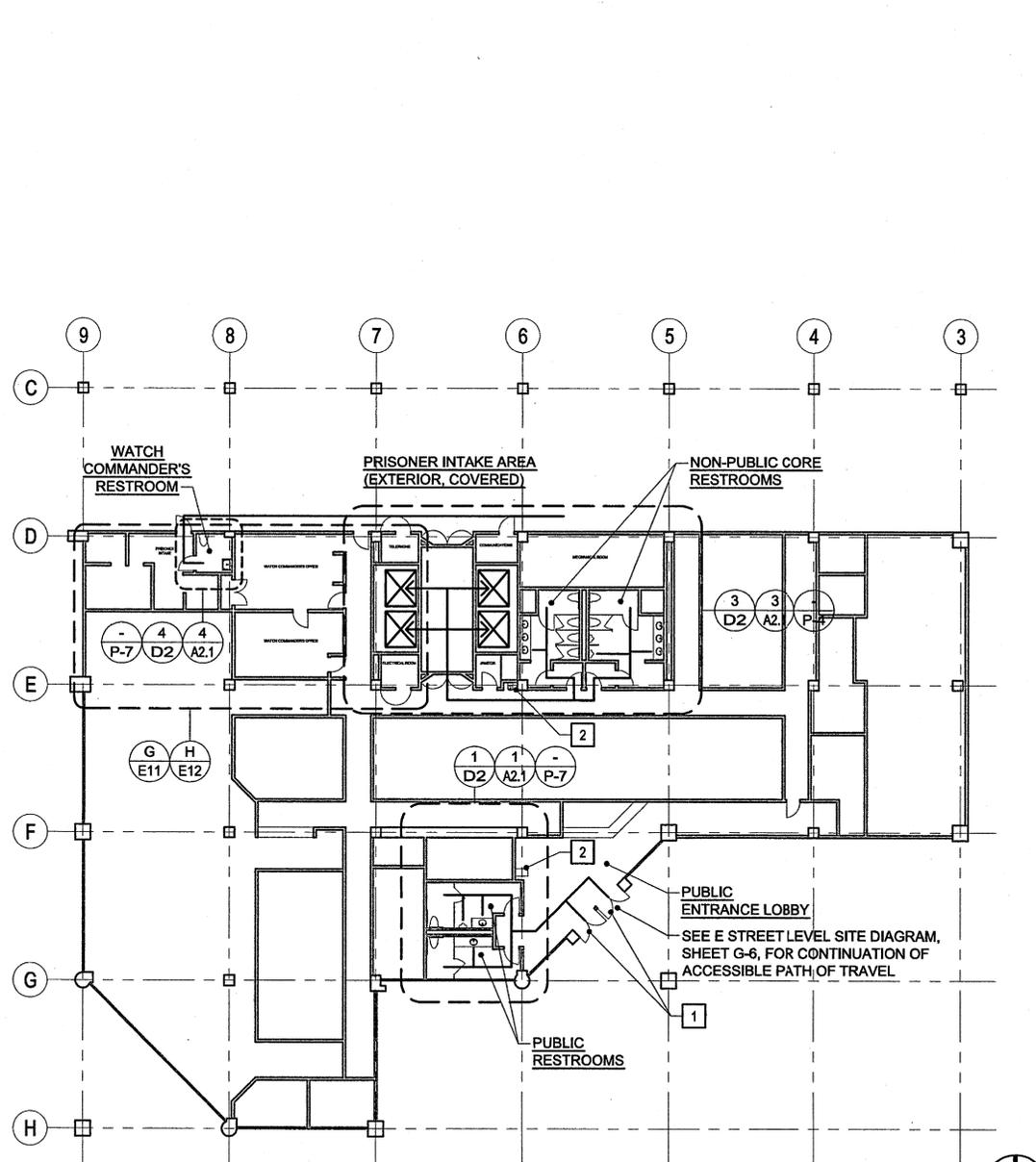
- 1. IF BUILDING INSPECTOR DETERMINES NON-COMPLIANCE WITH ANY ACCESSIBILITY PROVISIONS, HE/SHE SHALL REQUIRE COMPLETE, DETAILED PLANS CLEARLY SHOWING ALL EXISTING NON-COMPLYING CONDITIONS AND THE PROPOSED MODIFICATIONS TO MEET CURRENT ACCESSIBILITY PROVISIONS AFFECTED BY THE REMODEL (INCLUDING SITE PLAN, FLOOR PLANS, DETAILS, ETC.). THE PLANS MUST BE STAMPED BY THE FIELD INSPECTOR AND RESUBMITTED TO THE BUILDING DEVELOPMENT REVIEW DIVISION.
- 2. THERE ARE NO EXISTING PUBLIC TELEPHONES.

SYMBOL LEGEND

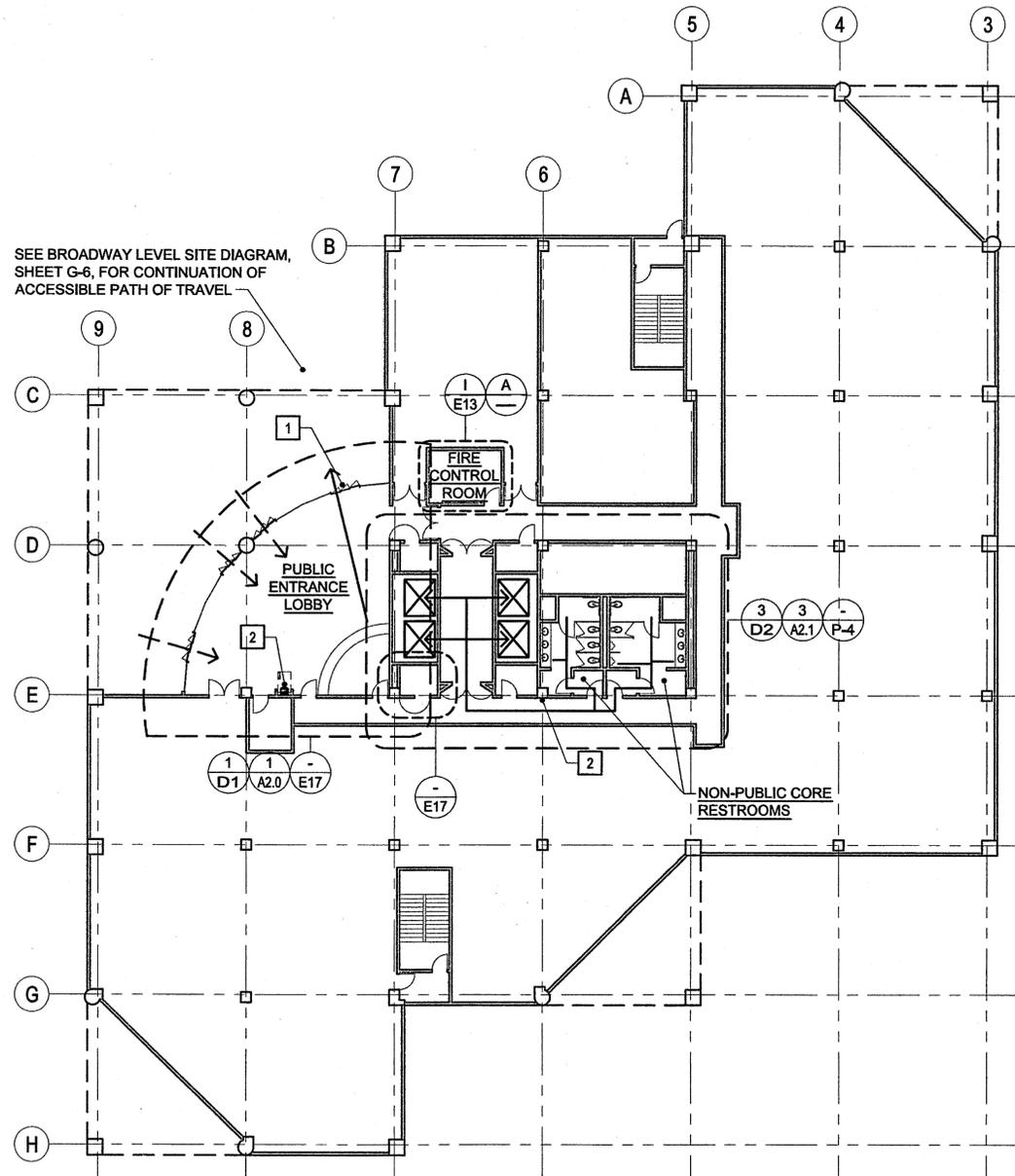
- ACCESSIBLE PATH OR TRAVEL
- ← ENTRANCE TO BE MADE ACCESSIBLE, PER SCOPE OF THIS PROJECT
- ⊠ ACCESSIBLE ELEVATOR, TYP OF 4

ROOF
LEVEL 7
LEVEL 6
LEVEL 5
LEVEL 4
LEVEL 3
GRADE
BROADWAY LEVEL (LEVEL 2)
E STREET LEVEL (LEVEL 1)
PARKING LEVEL P-1
PARKING LEVEL P-2

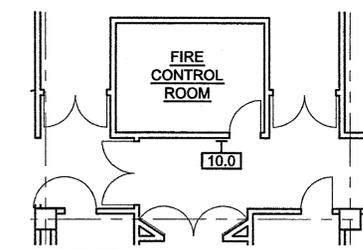
KEY SECTION
NO SCALE



KEY FLOOR PLAN - E STREET LEVEL (LEVEL 1)
SCALE: 1/16" = 1'-0" NORTH



KEY FLOOR PLAN - BROADWAY LEVEL (LEVEL 2)
SCALE: 1/16" = 1'-0" NORTH



PARTIAL BROADWAY LEVEL (LEVEL 2)
SCALE: 1/16" = 1'-0" NORTH

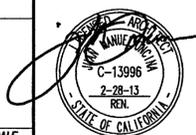
FUNDING CIP/SAP	SPEC. NO.	G-8
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
KEY PLANS		
CITY OF SAN DIEGO, CALIFORNIA SHEET # OF 66 SHEETS		W.B.S. B-00952, B-10008 B-10010
FOR CITY ENGINEER	DATE	SECTION HEAD
OSD BACKCHECK MOA	2/14/2012	PROJECT MANAGER
CONSTRUCTION ENGINEER		CCS27 COORDINATE
INSPECTOR		CCS83 COORDINATE
AS-BUILTS		
CONTRACTOR	DATE STARTED	36392-8-D
INSPECTOR	DATE COMPLETED	

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
MANUEL ONCINA ARCHITECTS INC. ARCHITECTURE PLANNING INTERIORS
614 Pennsylvania Ave. San Diego, CA 92103
619/295-4900 PH 619/295-4955 FX
www.oncina.com

MOA

SCALE HORIZONTAL NO SCALE VERTICAL NO SCALE

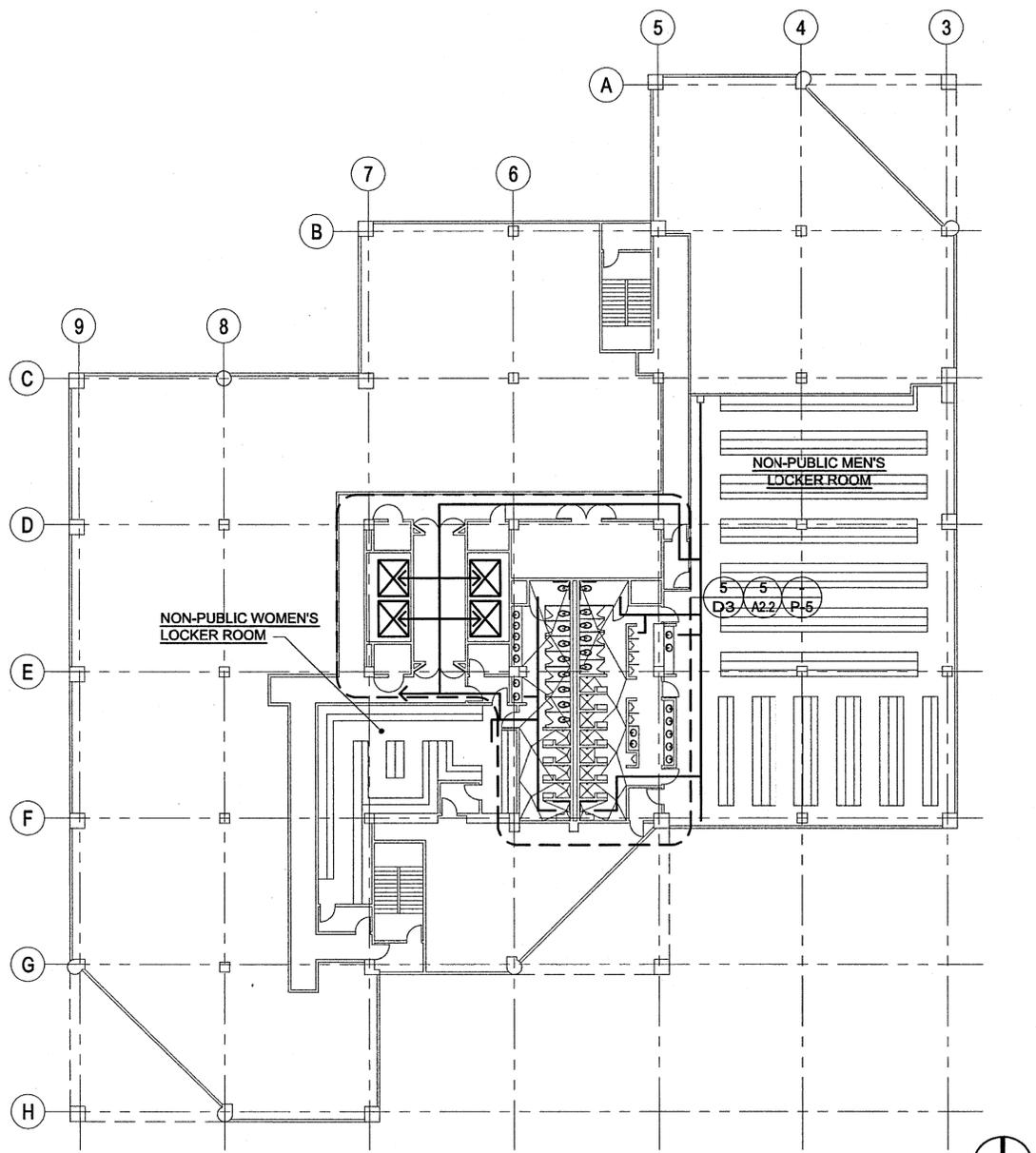


CITY OF SAN DIEGO PUBLIC WORKS PROJECT

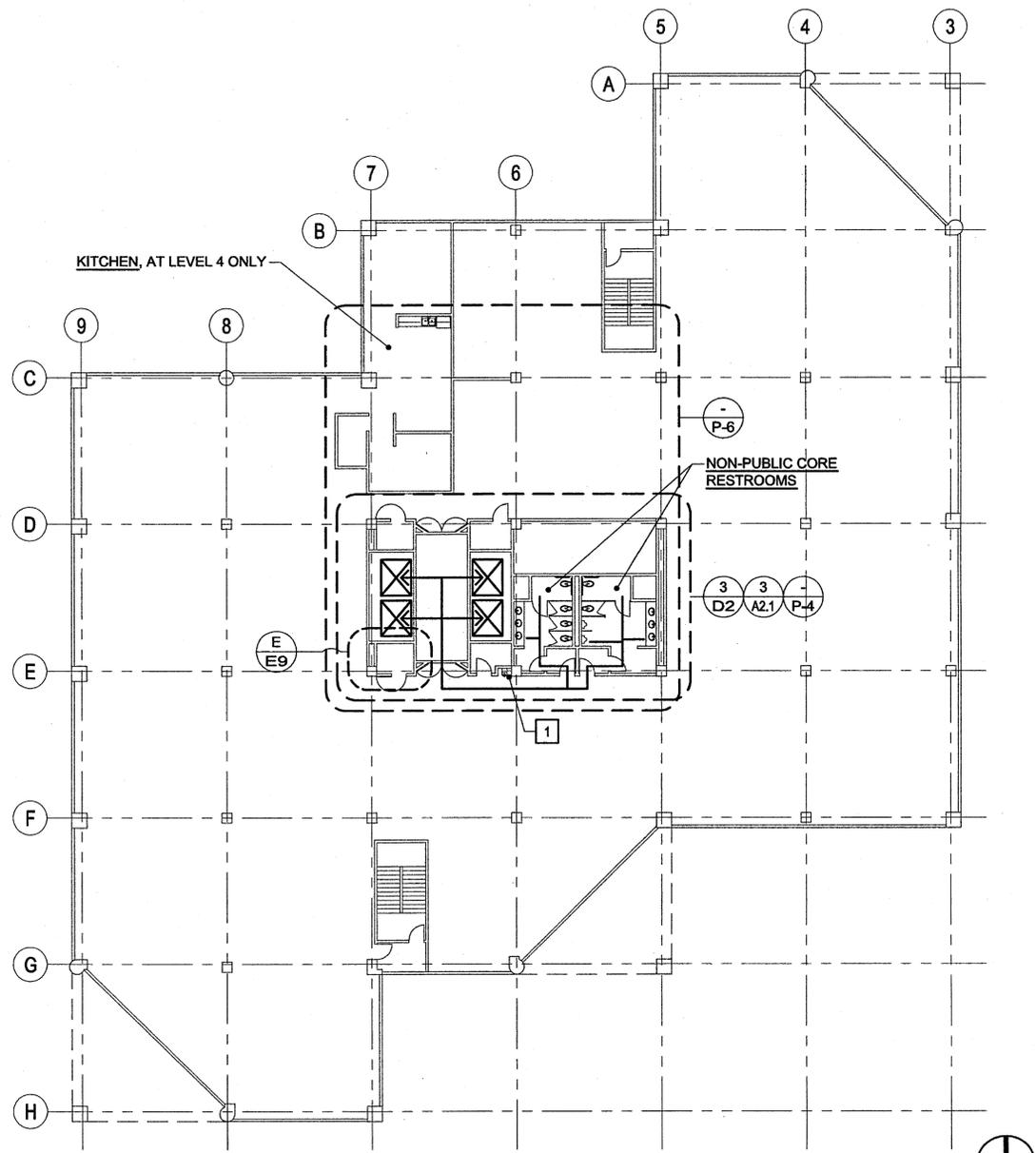


WARNING
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APPROVED BY:
FOR CITY ENGINEER
CHECKED BY:
CONSTRUCTION ENGINEER
CHECKED BY:
INSPECTOR



KEY FLOOR PLAN - LEVEL 3
SCALE: 1/16" = 1'-0" NORTH

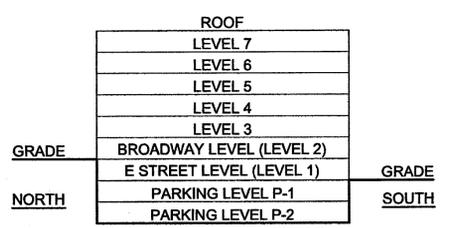


KEY FLOOR PLAN - LEVELS 4, 5 AND 6
SCALE: 1/16" = 1'-0" NORTH

NOTES
1 EXISTING DRINKING FOUNTAIN, DOES NOT MEET CURRENT ACCESS CODE, TO BE REPLACED WITH ACCESSIBLE LOW UNIT PER PLUMBING DRAWINGS

GENERAL NOTES
1. IF BUILDING INSPECTOR DETERMINES NON-COMPLIANCE WITH ANY ACCESSIBILITY PROVISIONS, HE/SHE SHALL REQUIRE COMPLETE, DETAILED PLANS CLEARLY SHOWING ALL EXISTING NON-COMPLYING CONDITIONS AND THE PROPOSED MODIFICATIONS TO MEET CURRENT ACCESSIBILITY PROVISIONS AFFECTED BY THE REMODEL (INCLUDING SITE PLAN, FLOOR PLANS, DETAILS, ETC.). THE PLANS MUST BE STAMPED BY THE FIELD INSPECTOR AND RESUBMITTED TO THE BUILDING DEVELOPMENT REVIEW DIVISION.

SYMBOL LEGEND
— ACCESSIBLE PATH OR TRAVEL
⊠ ACCESSIBLE ELEVATOR, TYP OF 4



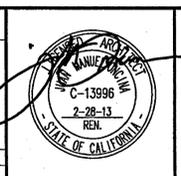
KEY SECTION
NO SCALE

FUNDING CIP/SAP		SPEC. NO.		G-9	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES					
KEY PLANS					
CITY OF SAN DIEGO, CALIFORNIA SHEET 9 OF 66 SHEETS				M.B.S. B-00952, B-10008 B-10010	
FOR CITY ENGINEER		DATE		SECTION HEAD	
DESCRIPTION	BY	APPROVED	DATE	FILED	PROJECT MANAGER
DSD BACKCHECK	MOA		2/14/2012		
CONSTRUCTION ENGINEER		DATE		CCS27 COORDINATE	
CHECKED BY:		DATE		CCS83 COORDINATE	
INSPECTOR		DATE STARTED		36392-9-D	
CONTRACTOR		DATE COMPLETED			
INSPECTOR					

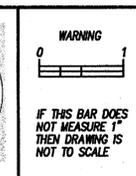
CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
MANUEL ONCINA ARCHITECTS INC. ARCHITECTURE PLANNING INTERIORS
514 Pennsylvania Ave. San Diego, CA 92103
619/295-4952 FAX 619/295-4955 FAX
www.oncina.com

SCALE
HORIZONTAL NO SCALE
VERTICAL NO SCALE



**CITY OF SAN DIEGO
PUBLIC WORKS PROJECT**



APPROVED BY:	DATE
FOR CITY ENGINEER	3/9/12
CHECKED BY:	
CONSTRUCTION ENGINEER	
CHECKED BY:	
INSPECTOR	

NOTES

- 1 EXISTING DRINKING FOUNTAIN, DOES NOT MEET CURRENT ACCESS CODE, TO BE REPLACED WITH ACCESSIBLE LOW UNIT PER PLUMBING DRAWINGS
- 2 PERMANENT ROOF ACCESS STAIR, PROVIDES ACCESS TO MECHANICAL ROOM AND EQUIPMENT
- 3 NEW MECHANICAL UNIT, PER SCHEDULE SHEET M-1, CONNECTIONS PER DETAIL 7/A4.2

GENERAL NOTES

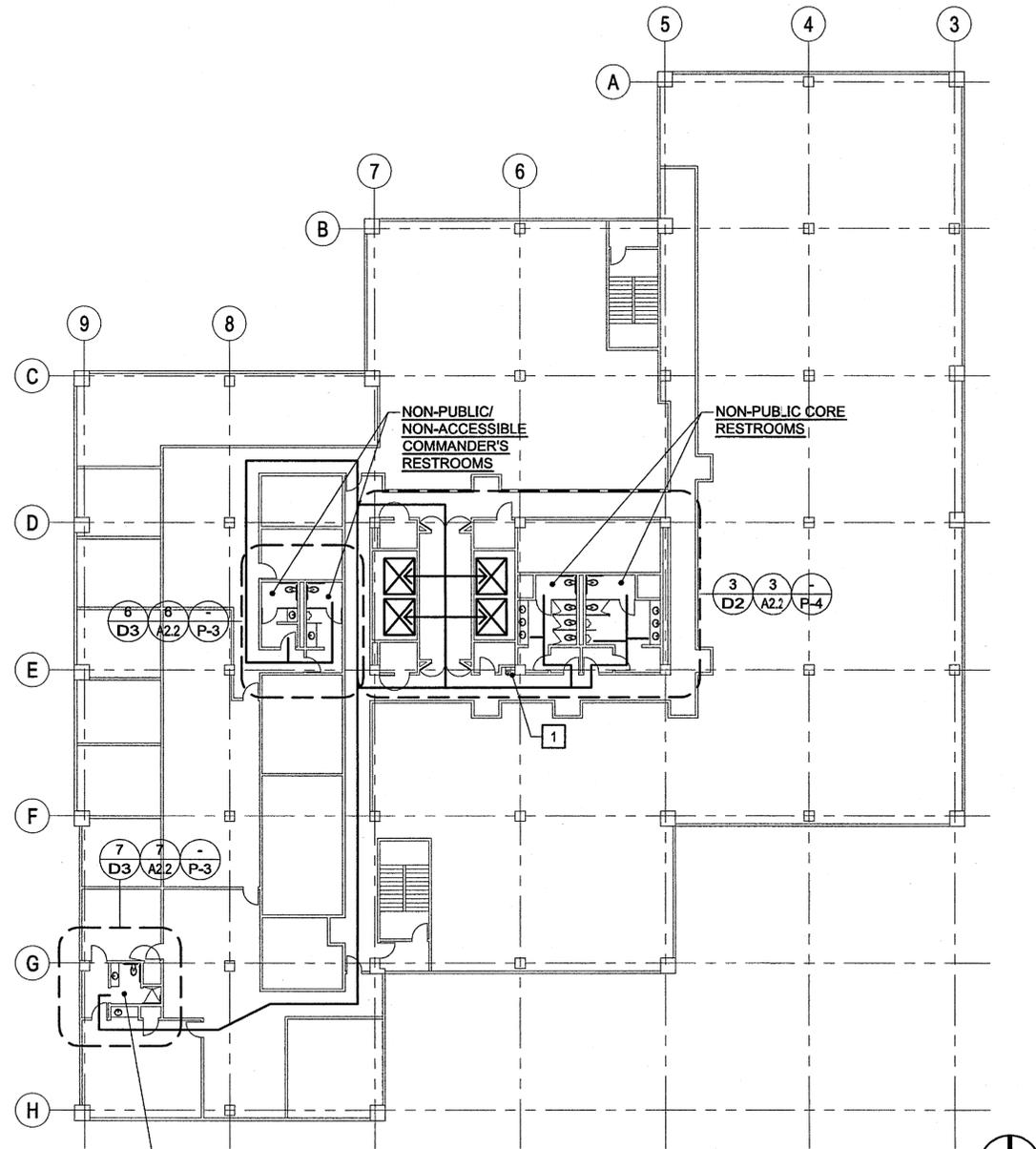
- 1. IF BUILDING INSPECTOR DETERMINES NON-COMPLIANCE WITH ANY ACCESSIBILITY PROVISIONS, HE/SHE SHALL REQUIRE COMPLETE, DETAILED PLANS CLEARLY SHOWING ALL EXISTING NON-COMPLYING CONDITIONS AND THE PROPOSED MODIFICATIONS TO MEET CURRENT ACCESSIBILITY PROVISIONS AFFECTED BY THE REMODEL (INCLUDING SITE PLAN, FLOOR PLANS, DETAILS, ETC.). THE PLANS MUST BE STAMPED BY THE FIELD INSPECTOR AND RESUBMITTED TO THE BUILDING DEVELOPMENT REVIEW DIVISION.

SYMBOL LEGEND

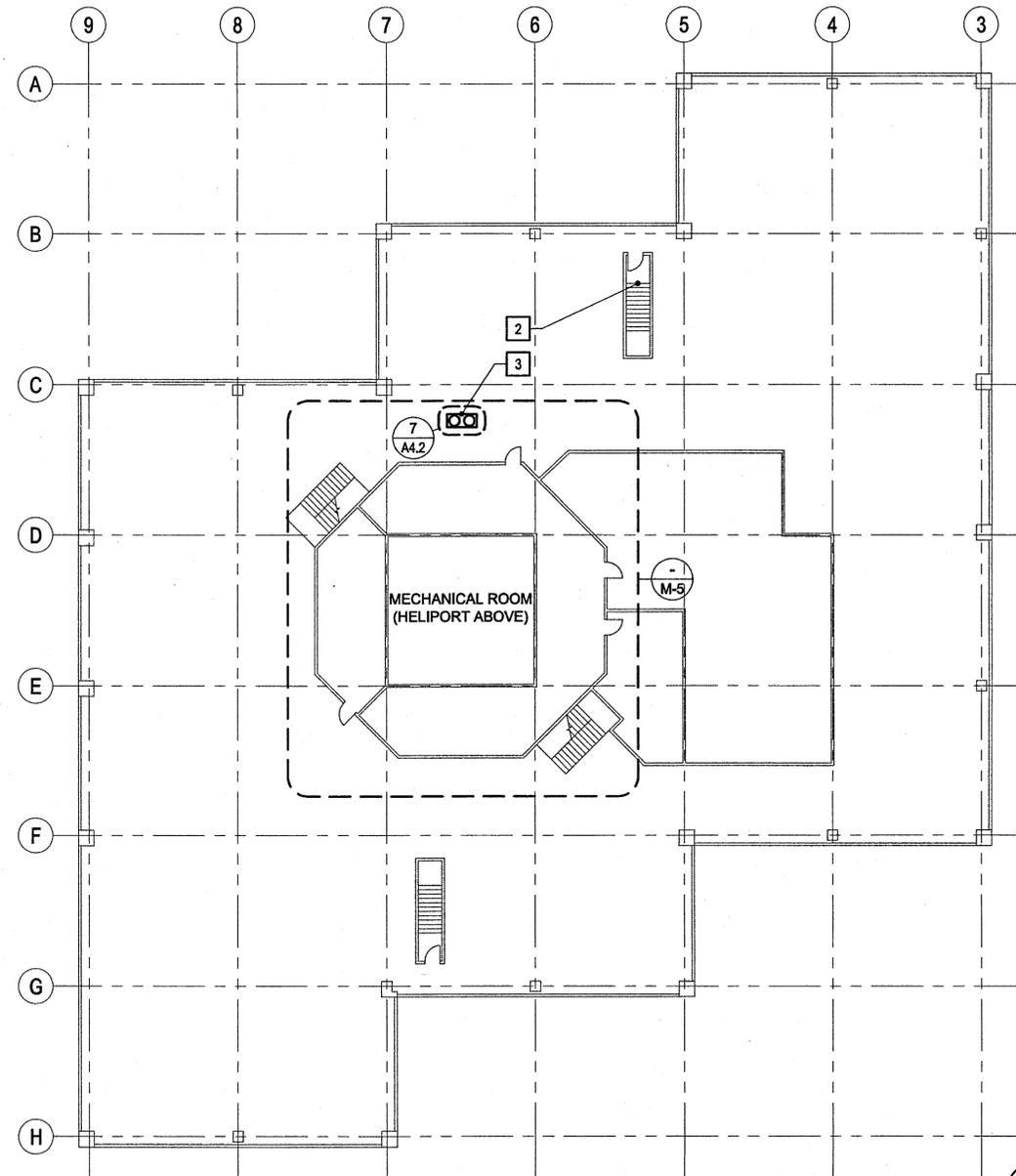
- ACCESSIBLE PATH OR TRAVEL
- ☒ ACCESSIBLE ELEVATOR, TYP OF 4

ROOF	
LEVEL 7	
LEVEL 6	
LEVEL 5	
LEVEL 4	
LEVEL 3	
GRADE	
BROADWAY LEVEL (LEVEL 2)	
E STREET LEVEL (LEVEL 1)	
PARKING LEVEL P-1	
PARKING LEVEL P-2	
NORTH	SOUTH

KEY SECTION
NO SCALE



KEY FLOOR PLAN - LEVEL 7
SCALE: 1/16" = 1'-0" NORTH



KEY ROOF PLAN
SCALE: 1/16" = 1'-0" NORTH

G-10

FUNDING CIP/SAP		SPEC. NO.	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES			
KEY PLAN / KEY ROOF PLAN			
CITY OF SAN DIEGO, CALIFORNIA		W.B.S. B-00932, B-10008	
SHEET 10 OF 66 SHEETS		B-10010	
FOR CITY ENGINEER		DATE	
DESCRIPTION / BY	APPROVED	DATE	FILMED
DSD BACKCHECK MOA		2/14/2012	
CONSTRUCTION ENGINEER		SECTION HEAD	
CHECKED BY:			PROJECT MANAGER
INSPECTOR			CCS27 COORDINATE
			CCS83 COORDINATE
CONTRACTOR	DATE STARTED	36392-10-D	
INSPECTOR	DATE COMPLETED		

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

MANUEL ONGCINA ARCHITECTS INC. ARCHITECTURE PLANNING INTERIORS
514 Penney Avenue, San Diego, CA 92103
619/295-4000 PH 619/295-4955 FX
www.moa.com

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT



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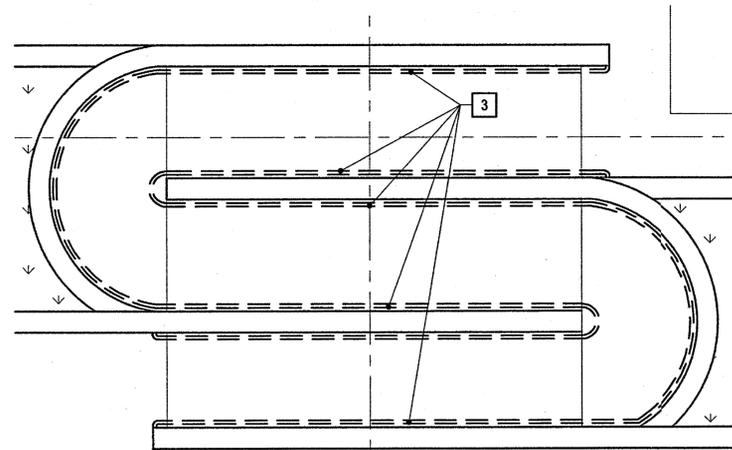
APPROVED BY:
FOR CITY ENGINEER
CHECKED BY:
CONSTRUCTION ENGINEER
CHECKED BY:
INSPECTOR

GENERAL DEMOLITION NOTES

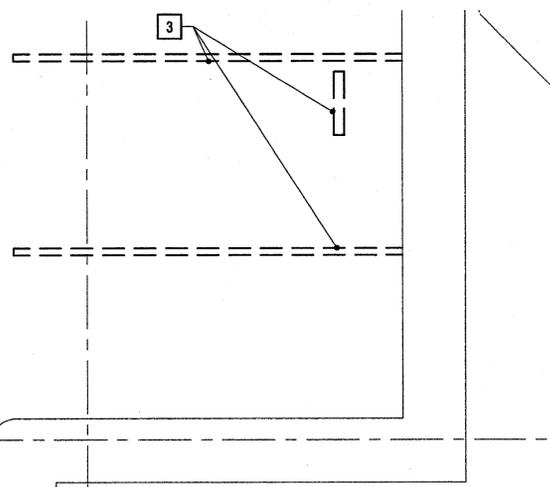
- PATCH, REPAIR AND RESTORE TO MATCHING CONDITIONS AT ANY DAMAGED AREA BEHIND OR SURROUNDING ITEMS THAT ARE REMOVED UNLESS OTHERWISE NOTED.
- IN BUILDING CORE RESTROOMS ON LEVEL 2 AND 4, SOLID SURFACE COUNTERTOP IS TO REMAIN.
- EVERYTHING SHOWN ON DEMO PLAN IS EXISTING AND TO REMAIN EXCEPT WHERE INDICATED TO BE REMOVED. CONTRACTOR SHALL PROTECT ITEMS TO REMAIN FROM DAMAGE.
- COORDINATE DEMOLITION SHEET WITH REST OF SHEETS IN PLAN SET AND SPECIFICATIONS. ITEMS THAT WILL CONFLICT WITH THE SUCCESSFUL COMPLETION OF THE WORK DESCRIBED IN THESE CONSTRUCTION DOCUMENTS MUST BE REMOVED. WHERE EXISTING STRUCTURE OR MATERIALS CONFLICT WITH CONSTRUCTION OF FINISHED PROJECT, AND ARE NOT SPECIFICALLY SHOWN ON THIS SHEET, NOTIFY OWNER AND ARCHITECT PRIOR TO REMOVAL.
- COORDINATE RESTROOM DEMOLITION AND CONSTRUCTION WITH CITY REPRESENTATIVE AND BUILDING OFFICIAL. TEMPORARY ACCESSIBLE, EQUIVALENT FACILITIES (TOILETS AND HAND SINKS) NEED TO BE PROVIDED.
- REMOVE EXTERIOR AND INTERIOR FINISHES WHERE NECESSARY TO COMPLETE NEW WORK AS SHOWN IN THIS PLAN SET, UNLESS SPECIFICALLY NOTED OTHERWISE.
- CAP CONNECTIONS WHERE UTILITIES ARE REMOVED AND TO BE ABANDONED.
- CONTRACTOR TO FINISH ANY UNFINISHED SURFACES THAT ARE THE RESULT OF DEMOLITION, WITH MATERIAL OF LIKE KIND UNLESS OTHERWISE NOTED.
- WHERE FIXTURES ARE REMOVED, REMOVE ALL ASSOCIATED MOUNTING HARDWARE
- ALL EXISTING PAPER TOWEL / TRASH UNITS ARE TO BE REMOVED, U.O.N. WHERE EXISTING UNITS ARE RECESSED OR SEMI-RECESSED, WALL MUST BE PATCHED PRIOR TO INSTALLATION OF THE MIRROR OR WALL TILE.
- IN FIRST FLOOR PUBLIC RESTROOM AND WATCH COMMANDER'S RESTROOM ONLY, WHERE SANITARY NAPKIN DISPENSER AND PAPER TOWEL / TRASH UNIT IS REMOVED, PATCH WALL AND TILE TO MATCH EXISTING.
- ALL PLUMBING FIXTURES IN RESTROOMS AND LOCKER ROOMS ARE TO BE REMOVED, UNLESS OTHERWISE NOTED.

NOTES

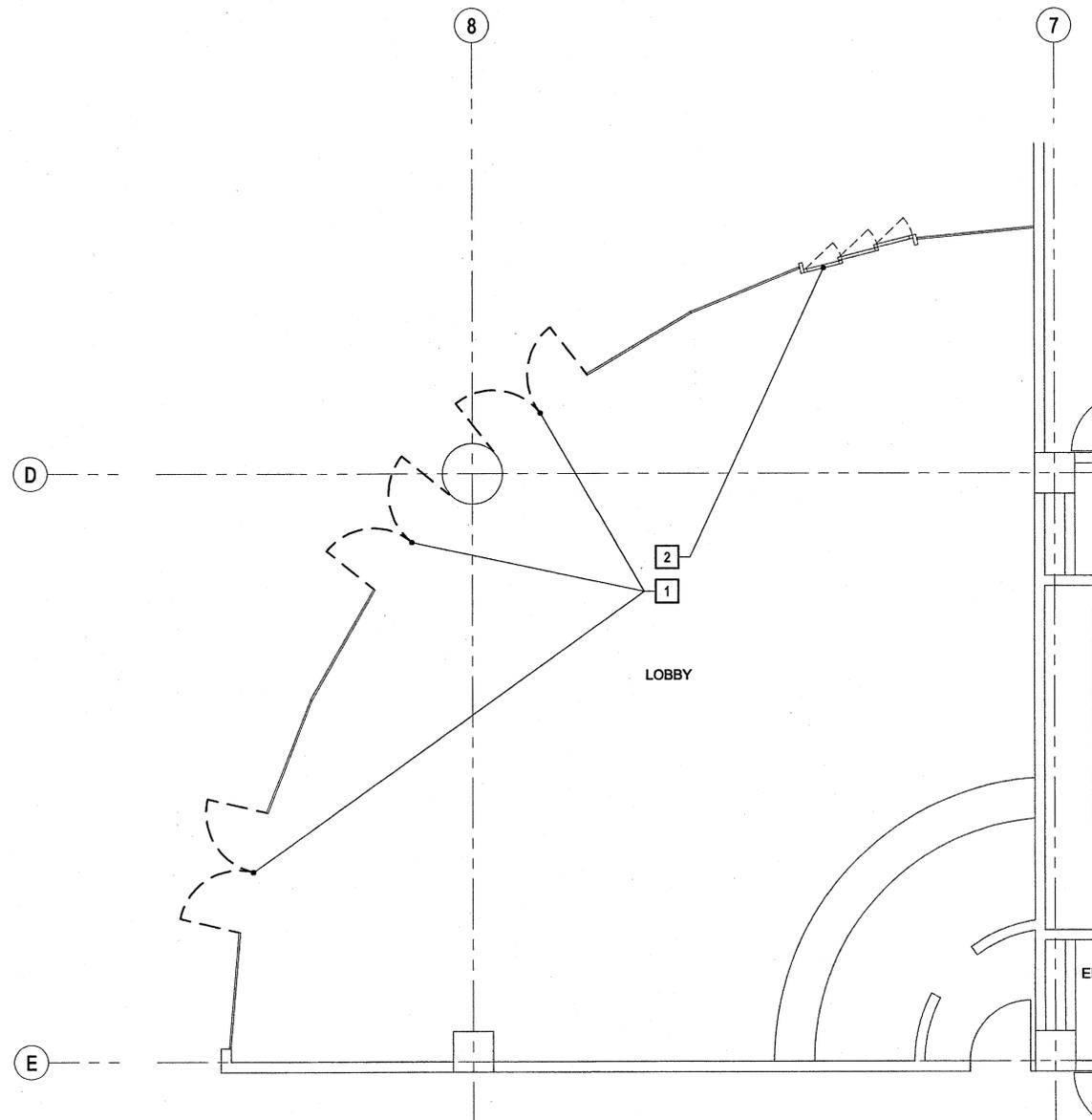
- REMOVE DOORS, ALL MOUNTING HARDWARE AND THRESHOLD, TYP OF 3
- EXISTING ACCESSIBLE AUTOMATIC TELESCOPING DOOR, TO REMAIN
- REMOVE EXISTING HANDRAIL TUBING ONLY, BOTH SIDES OF RAMP, FROM TOP TO BOTTOM, CUT CLEANLY FROM BRACKET AND PROTECT EXISTING BRACKETS FROM TEMPORARY INTRUSION OF MOISTURE
- REMOVE STRIPING LINES AND WHEELSTOP AT LOCATION INDICATED



DEMOLITION PLAN - E STREET SITE RAMP **2** NORTH
SCALE: 1/4" = 1'-0"



DEMOLITION PLAN - E STREET PARKING **3** NORTH
SCALE: 1/4" = 1'-0"



DEMOLITION PLAN - PUBLIC ENTRY (LEVEL 2) **1** NORTH
SCALE: 1/4" = 1'-0"

GENERAL NOTES

- GLASS COLOR AND TINT TO MATCH EXISTING ADJACENT FIXED WINDOW.

SYMBOLS LEGEND

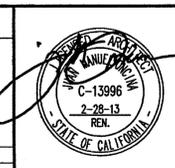


FUNDING CIP/SAP		SPEC. NO.		D1
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
DEMOLITION PLAN - LEVEL 2 ENTRY				
CITY OF SAN DIEGO, CALIFORNIA SHEET 11 OF 66 SHEETS			W.B.S. B-00952, B-10008 B-10010	
APPROVED BY:	FOR CITY ENGINEER	DATE	SECTION HEAD	
CHECKED BY:	DSD BACKCHECK	2/14/2012	PROJECT MANAGER	
CHECKED BY:	CONSTRUCTION ENGINEER		CCS27 COORDINATE	
CHECKED BY:	INSPECTOR		CCS83 COORDINATE	
CONTRACTOR	DATE STARTED	36392-11-D		
INSPECTOR	DATE COMPLETED			

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 MANUEL OJICINA ARCHITECTS INC.
 ARCHITECTURE PLANNING INTERIORS
 814 Pennsylvania Ave. San Diego, CA 92103
 619/226-4900 (PH) 619/226-4955 (FX)
 www.moaarchitect.com

SCALE: HORIZONTAL NO SCALE VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT



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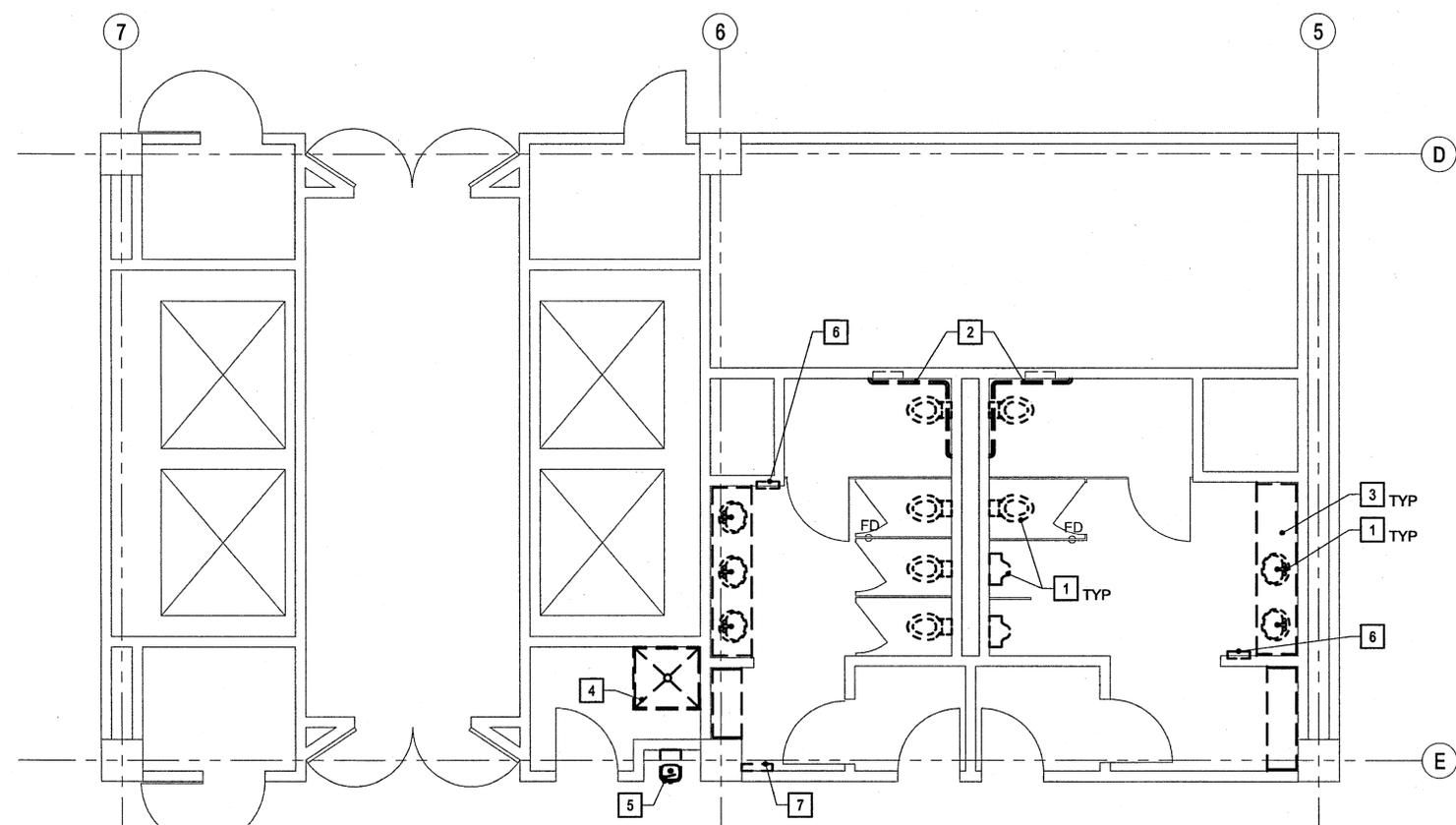
POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

NOTES

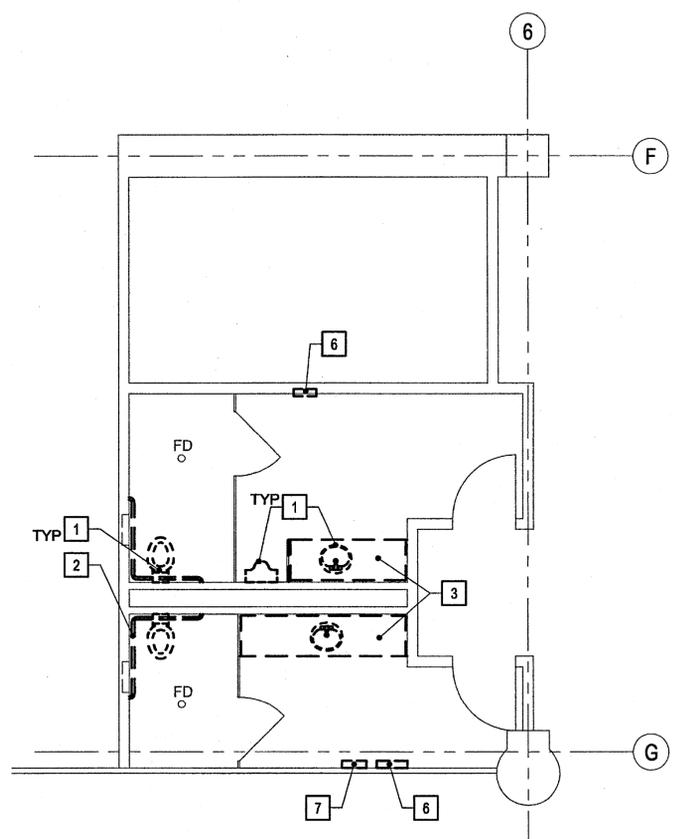
- 1 REMOVE EXISTING RESTROOM FIXTURES, PER PLUMBING, TYP
- 2 REMOVE EXISTING GRAB BARS
- 3 REMOVE EXISTING PLASTIC LAMINATE COUNTERTOP AND BACKSPLASH
- 4 REMOVE EXISTING MOP SINK AND FRP BACKSPLASH, PER PLUMBING
- 5 REMOVE DRINKING FOUNTAIN, PER PLUMBING DRAWINGS
- 6 REMOVE EXISTING PAPER TOWEL/TRASH RECEPTACLE UNITS
- 7 REMOVE EXISTING SANITARY NAPKIN DISPENSERS

SYMBOLS LEGEND

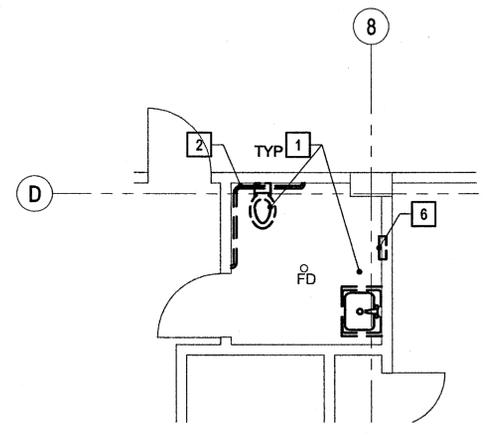
- TO BE REMOVED
- LAVATORY TO BE REMOVED
- URINAL TO BE REMOVED
- WATER CLOSET TO BE REMOVED



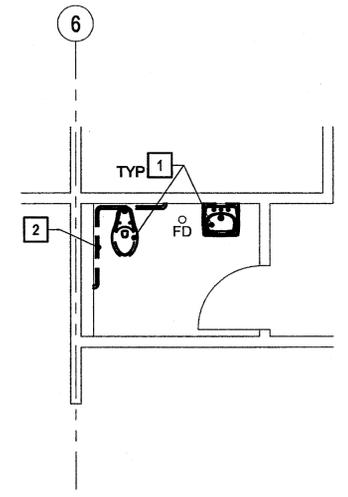
DEMOLITION PLAN - BUILDING CORE RESTROOM (TYP AT LEVELS 1, 2, 4, 5, 6, 7) 3
SCALE: 1/4" = 1'-0"



DEMOLITION PLAN - LEVEL 1 PUBLIC RESTROOMS 1
SCALE: 1/4" = 1'-0"



DEMOLITION PLAN - LEVEL 1 WATCH COMMANDER'S RESTROOM 4
SCALE: 1/4" = 1'-0"



DEMOLITION PLAN - LEVEL P-1 UNISEX RESTROOM 2
SCALE: 1/4" = 1'-0"

FUNDING CIP/SAP		SPEC. NO.		D2	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES					
DEMOLITION PLANS - RESTROOMS					
CITY OF SAN DIEGO, CALIFORNIA SHEET 12 OF 66 SHEETS				W.B.S. B-00952, B-10008 B-10010	
FOR CITY ENGINEER	BY	APPROVED	DATE	FILMED	SECTION HEAD
DSD BACKCHECK	MOA		2/14/2012		PROJECT MANAGER
CONSTRUCTION ENGINEER	CHECKED BY:				CCS27 COORDINATE
INSPECTOR					CCS83 COORDINATE
AS-BUILTS					
CONTRACTOR		DATE STARTED			36392-12-D
INSPECTOR		DATE COMPLETED			

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

 MANUEL ONCINA ARCHITECTS INC.
 ARCHITECTURE PLANNING INTERIORS
 514 PENNY AVENUE AVE.
 SAN DIEGO, CA 92103
 619/295-4900 PH
 619/295-4955 FX
 WWW.MOAINC.COM

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT



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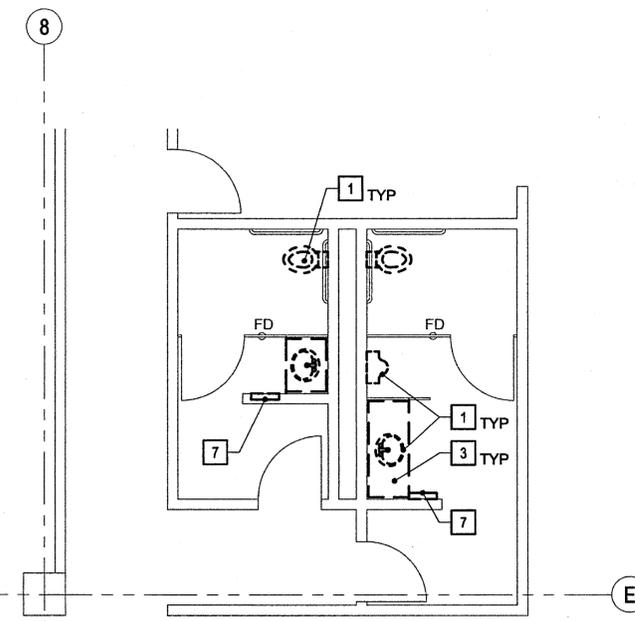
APPROVED BY:	
FOR CITY ENGINEER	
CHECKED BY:	
CONSTRUCTION ENGINEER	
CHECKED BY:	
INSPECTOR	

SYMBOLS LEGEND

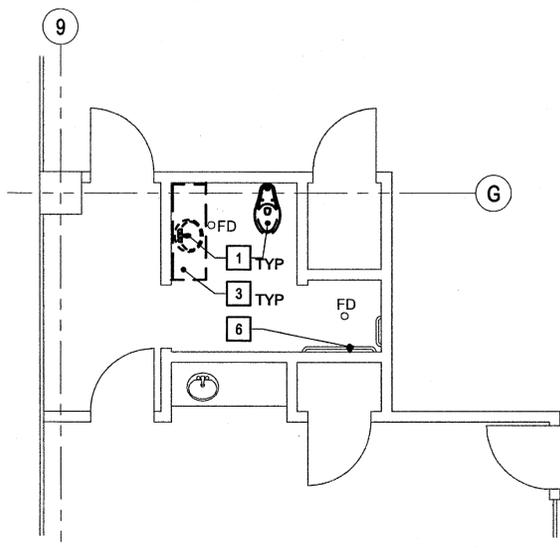
- TO BE REMOVED
-  LAVATORY TO BE REMOVED
-  URINAL TO BE REMOVED
-  WATER CLOSET TO BE REMOVED

NOTES

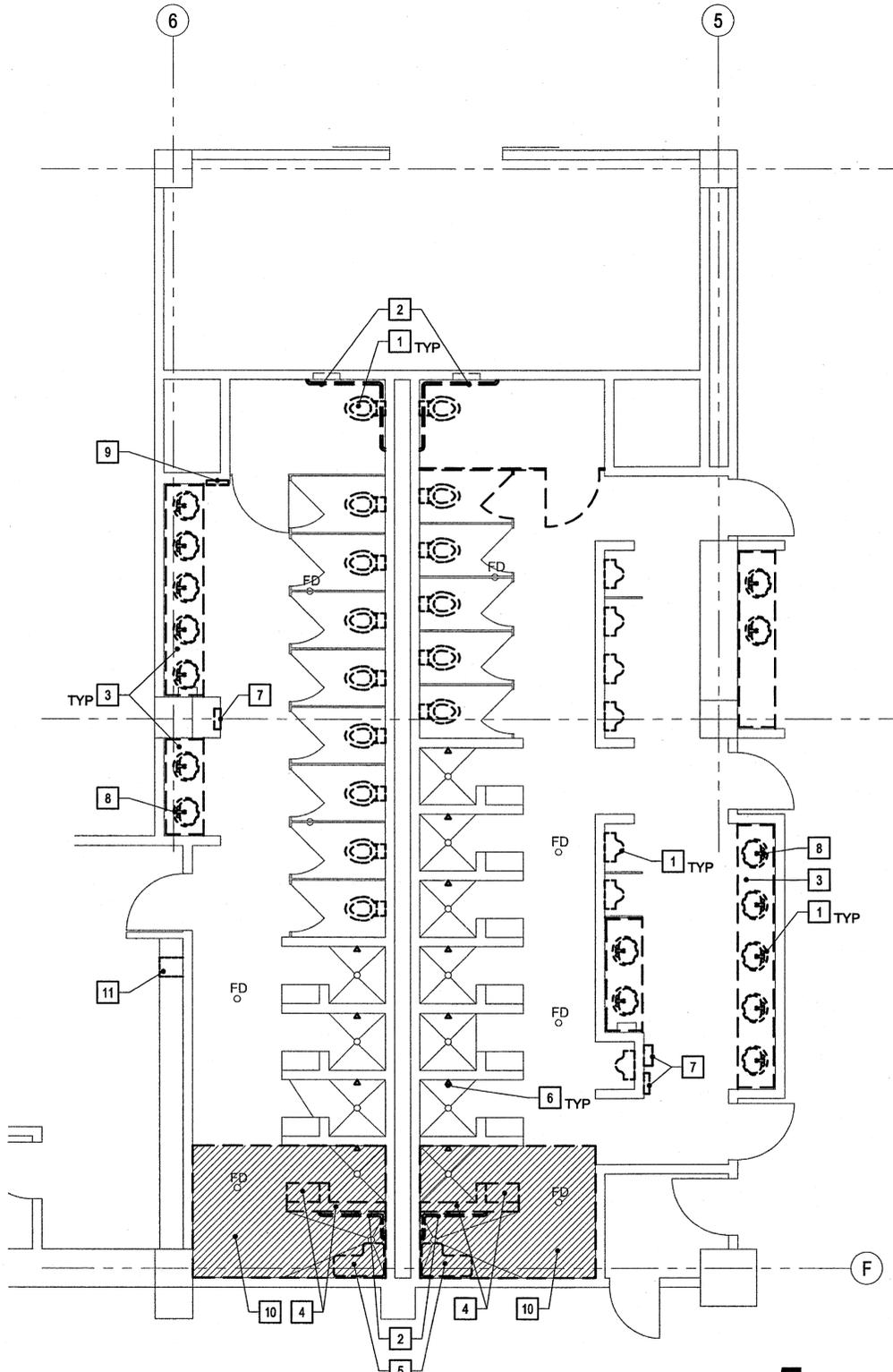
- 1 REMOVE EXISTING PLUMBING FIXTURES, REPLACE PER PLUMBING, TYP
- 2 REMOVE EXISTING GRAB BARS
- 3 REMOVE EXISTING PLASTIC LAMINATE COUNTERTOP AND BACKSPLASH
- 4 REMOVE EXISTING WALL, BENCH SEAT AND UTILITIES
- 5 REMOVE EXISTING SHOWER SEAT
- 6 REMOVE EXISTING SHOWER FIXTURE, PER PLUMBING, TYP OF 14
- 7 REMOVE EXISTING PAPER TOWEL DISPENSER/TRASH RECEPTACLE UNIT
- 8 REMOVE EXISTING LAVATORY, DO NOT REPLACE, TYP OF 2
- 9 REMOVE EXISTING SANITARY NAPKIN DISPENSERS
- 10 REMOVE FLOOR TILE, FLOOR IS TO SLOPE TO EXISTING FLOOR DRAINS AND NOT EXCEED 1.5% SLOPE IN ANY DIRECTION. FINISH-TO-FINISH TRANSITION AT EXISTING RESTROOM AREA TO BE FLUSH. GRIND AND/OR LEVEL AS NECESSARY TO ACHIEVE THESE REQUIREMENTS IN THE AREA INDICATED
- 11 REMOVE LOCKER IN LOCATION OF FUTURE NEW ACCESSIBLE LOCKER



DEMOLITION PLAN - LEVEL 7 COMMANDERS RESTROOM (NON-PUBLIC) 6
SCALE: 1/4" = 1'-0"



DEMOLITION PLAN - LEVEL 7 CHIEF'S RESTROOM (NON-PUBLIC) 7
SCALE: 1/4" = 1'-0"



DEMOLITION PLAN - LEVEL 3 LOCKER ROOM 5
SCALE: 1/4" = 1'-0"

FUNDING CIP/SAP		SPEC. NO.		D3
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
DEMOLITION PLANS - RESTROOMS				
CITY OF SAN DIEGO, CALIFORNIA SHEET 13 OF 66 SHEETS			W.B.S. B-00852, B-10008 B-10010	
FOR CITY ENGINEER		APPROVED	DATE	SECTION HEAD
DESCRIPTION	BY			PROJECT MANAGER
DSD BACKCHECK	MOA	2/14/2012		
CONSTRUCTION ENGINEER				CCS27 COORDINATE
CHECKED BY:				CCS83 COORDINATE
INSPECTOR				
AS-BUILTS				
CONTRACTOR		DATE STARTED		36392-13-D
INSPECTOR		DATE COMPLETED		

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

MANUEL ONCINA ARCHITECTS INC.
ARCHITECTURE
PLANNING
INTERIORS
014 Pommeblanca Ave.
San Diego, CA 92103
619/295-4900 FAX
www.oncina.com

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT



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APPROVED BY:
FOR CITY ENGINEER
CHECKED BY:
CONSTRUCTION ENGINEER
CHECKED BY:
INSPECTOR

NOTES

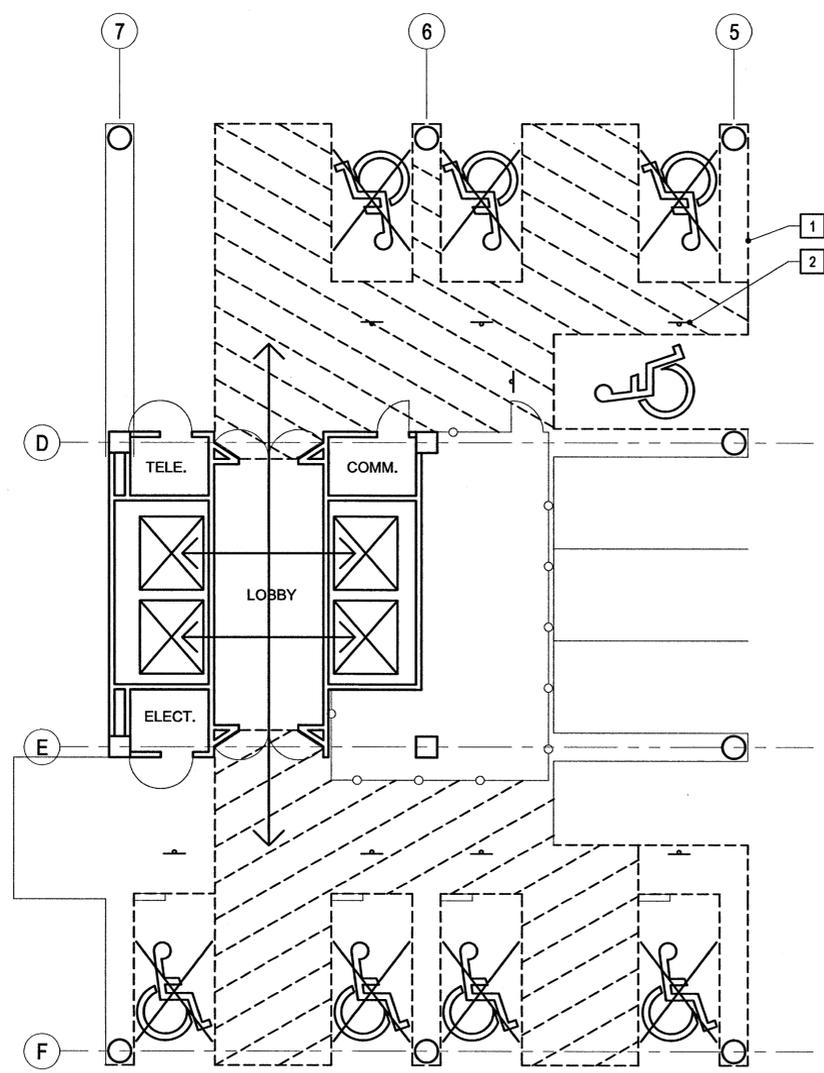
- 1 REMOVE ALL STRIPING AS INDICATED AT ACCESSIBLE PARKING SPACES
- 2 REMOVE ALL SIGNAGE AT ACCESSIBLE PARKING SPACES
- 3 NEW PAINT STRIPING, ISA AND "NO PARKING" COPY, AS INDICATED, PER SDM-117
- 4 NEW CONC WHEEL STOP, ANCHOR TO PAVEMENT, TYP
- 5 NEW SIGNAGE, PER SCHEDULE, DETAILS 10,11/A4.1 AND SDM-117

GENERAL NOTES

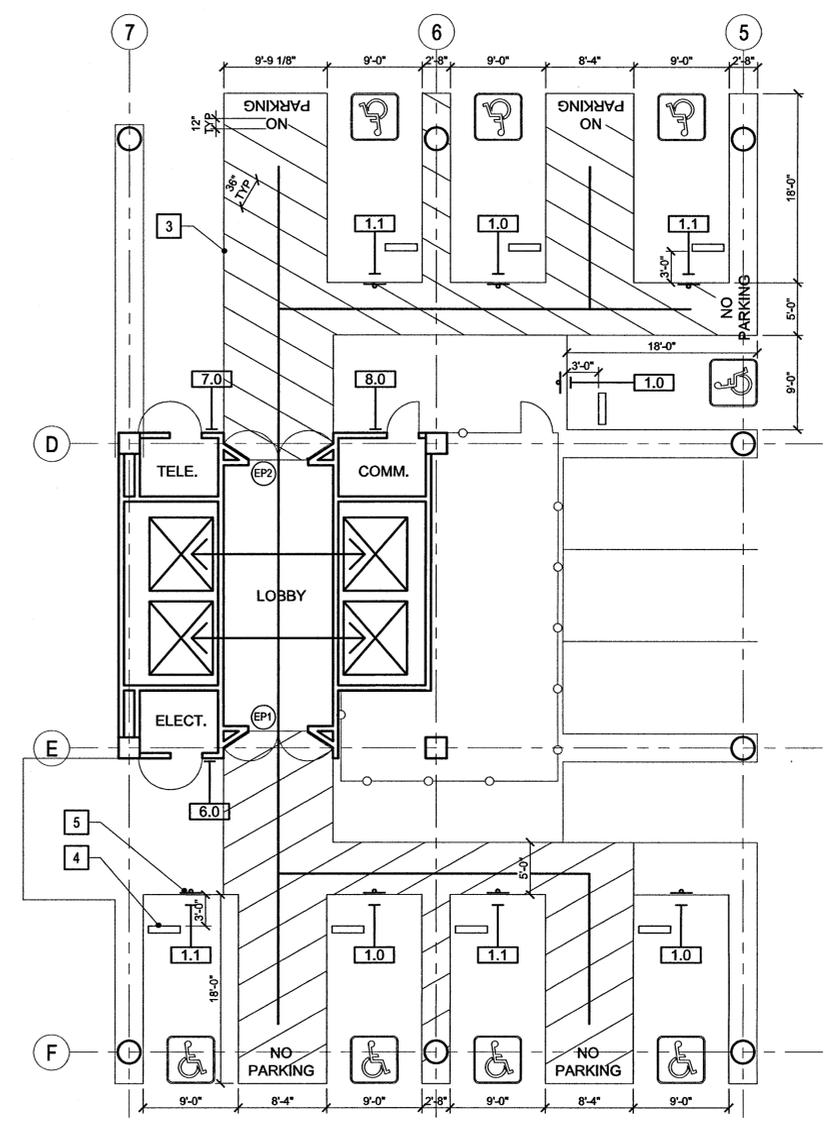
1. PATCH, REPAIR AND RESTORE TO MATCHING CONDITIONS AT ANY DAMAGED AREA BEHIND OR SURROUNDING ITEMS THAT ARE REMOVED UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO FINISH ANY UNFINISHED SURFACES THAT ARE THE RESULT OF DEMOLITION, WITH MATERIAL OF LIKE KIND UNLESS OTHERWISE NOTED TO BE.
3. GLASS COLOR AND TINT TO MATCH EXISTING ADJACENT FIXED WINDOW.

SYMBOL LEGEND

- ACCESSIBLE PATH OF TRAVEL
- ACCESSIBLE ENTRANCE
- ACCESSIBLE ELEVATOR, TYP OF 4
- ISA AT ACCESSIBLE PARKING SPACE, 4'-6"x4'-6" PER SDM-117
- PARKING SPACE, DOES NOT MEET CURRENT ACCESS CODE
- SIGNAGE PER SCHEDULE, SHEET A4.0



LEVEL P2 ACCESSIBLE PARKING - DEMO PLAN
SCALE: 1/8" = 1'-0"



LEVEL P2 ACCESSIBLE PARKING - IMPROVEMENT PLAN
SCALE: 1/8" = 1'-0"



FUNDING CIP/SAP		SPEC. NO.		A1.0
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
LEVEL P2 ACCESSIBLE PARKING				
CITY OF SAN DIEGO, CALIFORNIA			W.B.S. B-00852, B-10008	
SHEET 14 OF 66 SHEETS			B-10010	
APPROVED BY:		DATE		SECTION HEAD
FOR CITY ENGINEER	BY	APPROVED	DATE	FILMED
DESCRIPTION	BY	APPROVED	DATE	FILMED
DSD BACKCHECK	MOA		2/14/2012	
CHECKED BY:		DATE		PROJECT MANAGER
CONSTRUCTION ENGINEER		DATE		CCS27 COORDINATE
CHECKED BY:		DATE		CCS83 COORDINATE
INSPECTOR		DATE		
AS-BUILTS		DATE		
CONTRACTOR		DATE		
INSPECTOR		DATE		
		DATE STARTED		36392-14-D
		DATE COMPLETED		

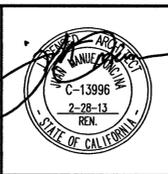
CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

MANUEL ONCINA ARCHITECTS INC. ARCHITECTURE PLANNING INTERIORS
514 Poinsettia Ave. San Diego, CA 92103
619/295-4900 FAX 619/295-4965 FX
www.oncina.com

MOA

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT



WARNING

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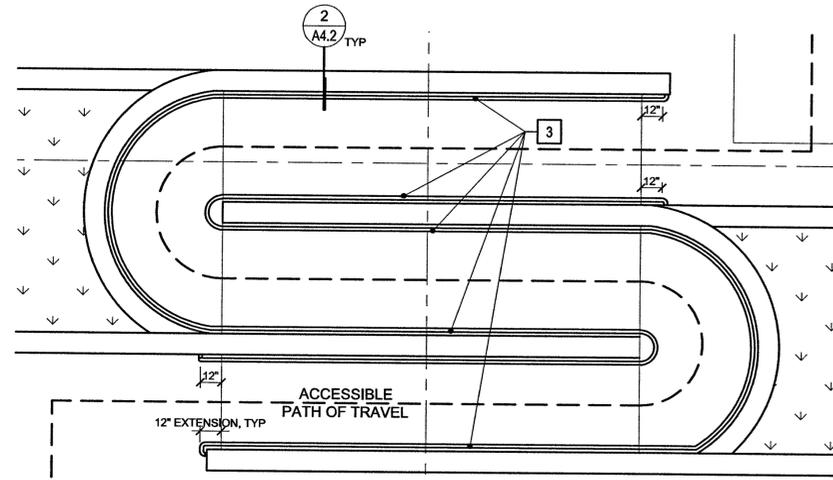
APPROVED BY:	DATE
FOR CITY ENGINEER	
CHECKED BY:	
CONSTRUCTION ENGINEER	
CHECKED BY:	
INSPECTOR	

NOTES

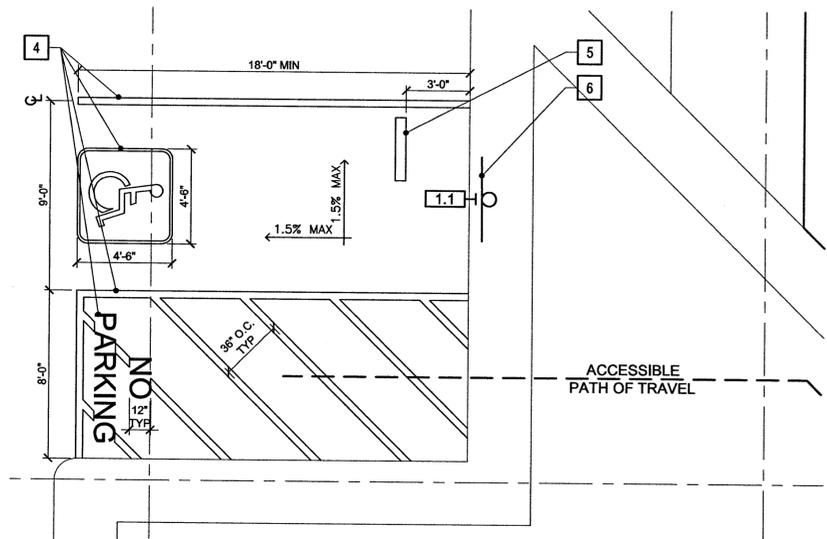
- 1 EXISTING ACCESSIBLE AUTOMATIC TELESCOPING DOOR
- 2 NEW ACCESSIBLE AUTOMATIC, 3 PANEL TELESCOPING DOOR WITH FULL BREAKOUT PANELS, PER SCHEDULE AND SPECIFICATIONS, TYP OF 3
- 3 ADD VERTICAL HANDRAIL BRACKET EXTENSION AT EACH EXISTING HANDRAIL BRACKET TO ACHIEVE CONT TOP OF RAIL AT 36" ABOVE FINISHED RAMP SURFACE. MATCH SIZE AND WALL THICKNESS OF EXISTING TUBING. VERIFY 12" HANDRAIL EXTENSION PAST TOP AND BOTTOM OF RAMP, BOTH SIDES, EXTENSION TO BE LEVEL AND 36" ABOVE FINISHED LANDING SURFACE. MODIFY EXISTING HANDRAIL AND BRACKETS AS NECESSARY TO ACHIEVE THESE REQUIREMENTS. ALL CONNECTIONS TO BE WELDED, GRIND SMOOTH. REPAINT ENTIRE HANDRAIL, BRACKETS AND ALL OTHER STEEL RAILINGS INCLUSIVE OF RAMP AND RAMP WALLS, COLOR TO MATCH EXISTING. SUBMIT DRAWDOWN SAMPLE TO RESIDENT ENGINEER FOR APPROVAL. SEE DETAIL 2/A4.2
- 4 NEW PAINT STRIPING, ISA AND "NO PARKING" COPY, AS INDICATED, PER SDM-117 FOR VAN ACCESSIBLE SPACE
- 5 NEW CONC WHEEL STOP, ANCHOR TO PAVEMENT
- 6 NEW SIGNAGE, PER SCHEDULE, DETAIL 11/A4.1 AND SDM-117 FOR VAN ACCESSIBLE SPACE
- 7 FLUSH TRANSITION AT CONC WALK ALONG ACCESSIBLE PATH OF TRAVEL, GRIND/ LEVEL AS NECESSARY TO ACHIEVE REQUIREMENT
- 8 NEW ACCESSIBLE LOW DRINKING FOUNTAIN, PER PLUMBING

GENERAL NOTES

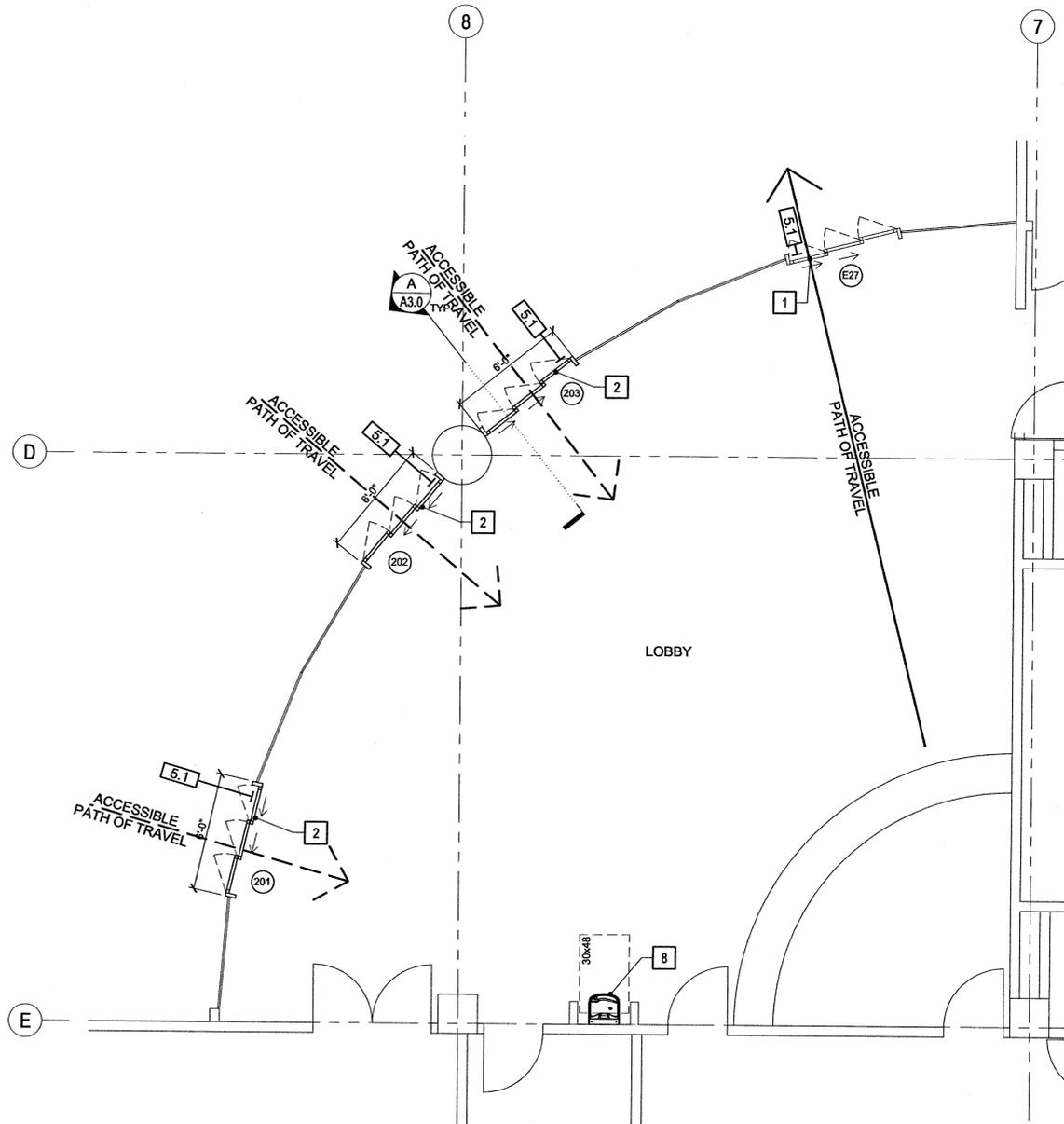
1. PATCH, REPAIR AND RESTORE TO MATCHING CONDITIONS AT ANY DAMAGED AREA BEHIND OR SURROUNDING ITEMS THAT ARE REMOVED UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO FINISH ANY UNFINISHED SURFACES THAT ARE THE RESULT OF DEMOLITION, WITH MATERIAL OF LIKE KIND UNLESS OTHERWISE NOTED TO BE.
3. GLASS COLOR AND TINT TO MATCH EXISTING ADJACENT FIXED WINDOW.
4. APPLY INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) DECAL AT EACH ACCESSIBLE ENTRANCE. 6"x6", PROPORTIONS PER DETAIL 12/G-6



E STREET SITE RAMP
SCALE: 1/4" = 1'-0"



E STREET ACCESSIBLE PARKING SPACE
SCALE: 1/4" = 1'-0"



PROPOSED DOOR PLAN (LEVEL 2)
SCALE: 1/4" = 1'-0"



SYMBOL LEGEND

- ACCESSIBLE PATH OF TRAVEL
- ACCESSIBLE ENTRANCE
- ISA AT ACCESSIBLE PARKING SPACE, 4'-6"x4'-6" PER SDM-117
- SIGNAGE PER SCHEDULE, SHEET A4.0

FUNDING CIP/SAP	SPEC. NO.	A2.0
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
LEVEL 2 ENTRY IMPROVEMENT PLAN		
CITY OF SAN DIEGO, CALIFORNIA SHEET 15 OF 66 SHEETS		W.B.S. B-00852, B-10008 B-10010
FOR CITY ENGINEER	DATE	SECTION HEAD
DESCRIPTION / BY	APPROVED / DATE	PROJECT MANAGER
OSD BACKCHECK / MOA	2/14/2012	CCS27 COORDINATE
CONSTRUCTION ENGINEER		CCS83 COORDINATE
CHECKED BY:		
INSPECTOR		
CONTRACTOR	DATE STARTED	36392-15-D
INSPECTOR	DATE COMPLETED	

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 MANUEL ONCINA ARCHITECTS INC.
 ARCHITECTURE PLANNING INTERIORS
 814 Pennsylvania Ave.
 San Diego, CA 92103
 619/295-4900 PH
 619/295-4955 FX
 www.moa.com

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



**CITY OF SAN DIEGO
PUBLIC WORKS PROJECT**



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APPROVED BY:
 FOR CITY ENGINEER
 CHECKED BY:
 CONSTRUCTION ENGINEER
 CHECKED BY:
 INSPECTOR

NOTES

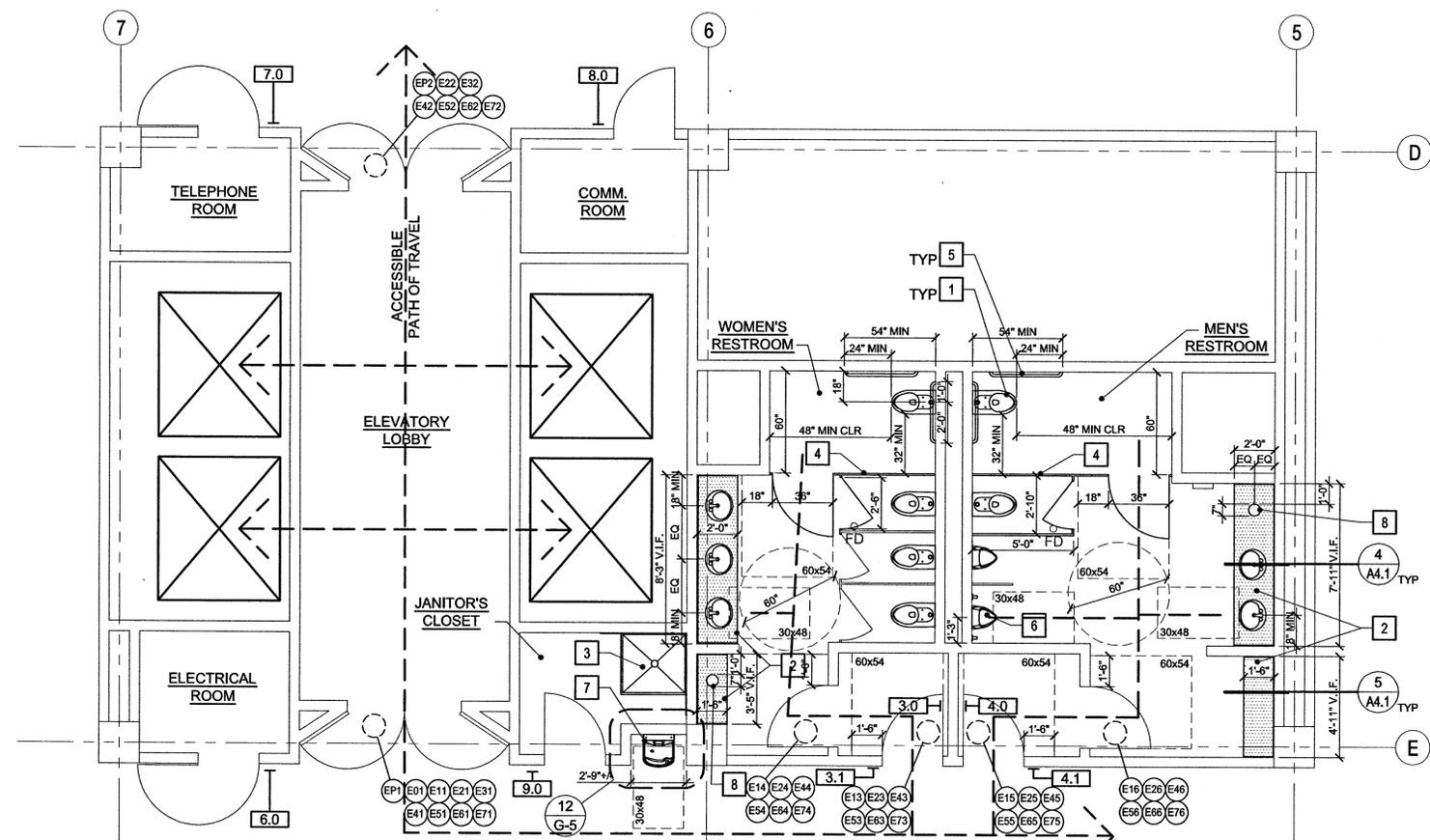
- 1 NEW RESTROOM FIXTURES, PER PLUMBING PLAN, TYP
- 2 NEW SOLID SURFACE COUNTERTOP AND BACKSPASH, FINISH PER SCHEDULE
- 3 NEW MOP SINK PER PLUMBING, NEW SOLID SURFACE WALL COVERING PER DETAIL 9/A4.1, PER PLUMBING
- 4 NEW TOILET PARTITION, FINISH TO MATCH EXISTING
- 5 INSTALL GRAB BAR PER DETAILS 2/G-6, 1/A4.1 AND NOTES ON SHEET G-4
- 6 INSTALL ACCESSIBLE URINAL AND GRAB BARS PER ELEVATIONS AND NOTES ON SHEET G-4 AND DETAIL 1/A4.1, INSTALL NEW BLOCKING AS REQ'D
- 7 NEW DRINKING FOUNTAIN, PER PLUMBING AND DETAIL 1/A4.2
- 8 CORE 7" DIA OPENING IN NEW SOLID SURFACE COUNTER FOR TRASH WASTE, 1/8" RADIUS AT TOP EDGE
- 9 NEW DOOR PER SCHEDULE

GENERAL NOTES

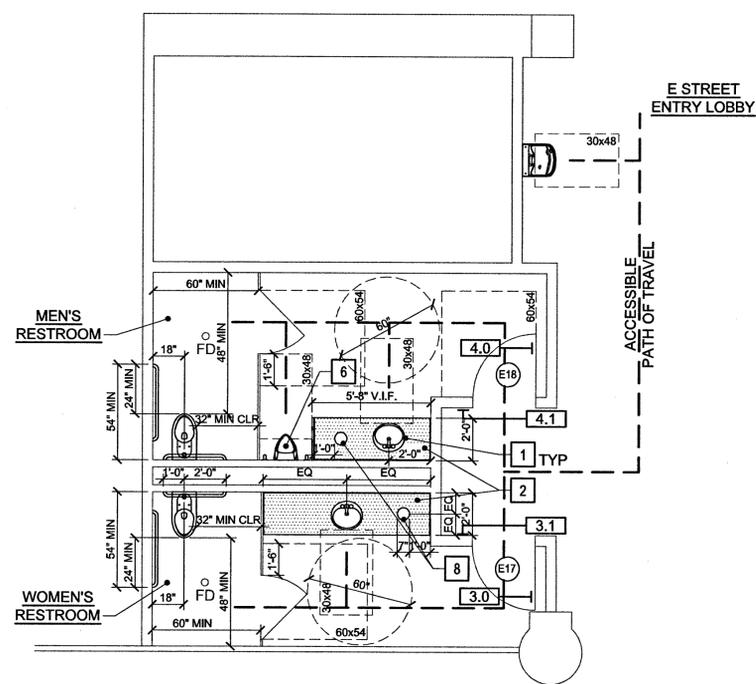
1. PATCH, REPAIR AND RESTORE TO MATCHING CONDITIONS AT ANY DAMAGED AREA BEHIND OR SURROUNDING ITEMS THAT ARE REMOVED UNLESS OTHERWISE NOTED.
2. ALL RESTROOM ENTRY DOORS AND ADJACENT WALL TO RECEIVE NEW SIGNAGE, PER DETAILS 6-9,11/G-5 AND SIGNAGE SCHEDULE, UNLESS OTHERWISE NOTED.
3. RESTROOM INTERIOR ELEVATIONS PER SHEETS A3.0 AND A3.1
4. ALL RESTROOM AREAS TO SLOPE TO DRAIN AT NO GREATER THAN 1.5% IN ANY DIRECTION.
5. ALL PARTITION DOORS TO ACCESSIBLE RESTROOM STALLS TO HAVE U-SHAPED DOOR PULLS INSTALLED ON INTERIOR AND EXTERIOR SIDES OF DOOR PER DETAIL 4/A4.2 AND INTERNATIONAL SYMBOL OF ACCESSIBILITY SIGNAGE APPLIED TO EXTERIOR SIDE.

SYMBOL LEGEND

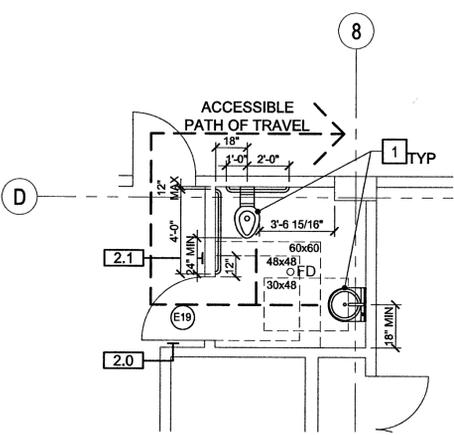
- ACCESSIBLE PATH OF TRAVEL
- ACCESSIBLE ELEVATOR, TYP OF 4
- ISA AT ACCESSIBLE PARKING SPACE, 4'-6"x4'-6" PER SDM-117
- SIGNAGE PER SCHEDULE, SHEET A4.0



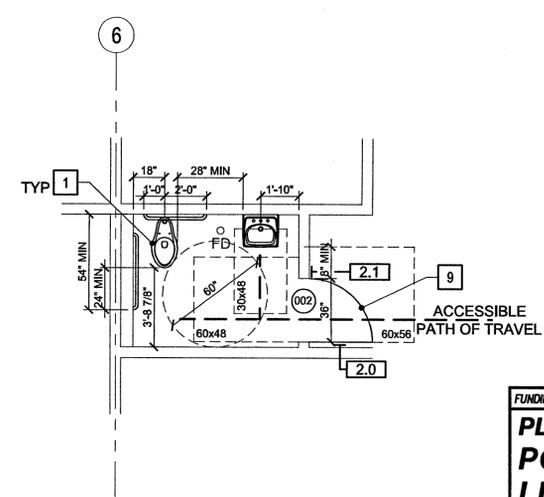
FLOOR PLAN - BUILDING CORE RESTROOM 3
(FLOORS 1, 2, 4-7)
SCALE: 1/4" = 1'-0"



FLOOR PLAN - LEVEL 1 PUBLIC RESTROOM 1
SCALE: 1/4" = 1'-0"



FLOOR PLAN - LEVEL 1 WATCH COMMANDER'S RESTROOM 4
SCALE: 1/4" = 1'-0"



FLOOR PLAN - LEVEL P-1 UNISEX RESTROOM 2
SCALE: 1/4" = 1'-0"

FUNDING CIP/SAP		SPEC. NO.		A2.1
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
RESTROOM IMPROVEMENT PLANS				
CITY OF SAN DIEGO, CALIFORNIA			W.B.S. B-00952, B-10008	
SHEET #8 OF 66 SHEETS			B-10010	
FOR CITY ENGINEER	DATE	SECTION HEAD		
DESCRIPTION	BY	APPROVED	DATE	FILMED
DSD BACKCHECK	MOA		2/14/2012	
CONSTRUCTION ENGINEER		PROJECT MANAGER		
CHECKED BY:		CCS27 COORDINATE		
INSPECTOR		CCS83 COORDINATE		
AS-BUILTS	DATE STARTED	36392-16-D		
CONTRACTOR	DATE COMPLETED			
INSPECTOR				

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

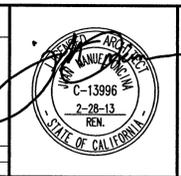
CONSULTANT

MANUEL ONCINA ARCHITECTS INC. ARCHITECTURE PLANNING INTERIORS

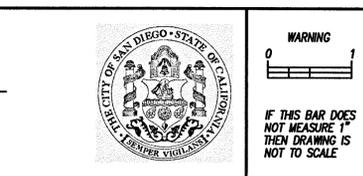
MOA

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619/295-4900 PH
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www.moaarchitects.com

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT



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APPROVED BY:	DATE
FOR CITY ENGINEER	2/14/2012
CHECKED BY:	
CONSTRUCTION ENGINEER	
CHECKED BY:	
INSPECTOR	

POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

NOTES

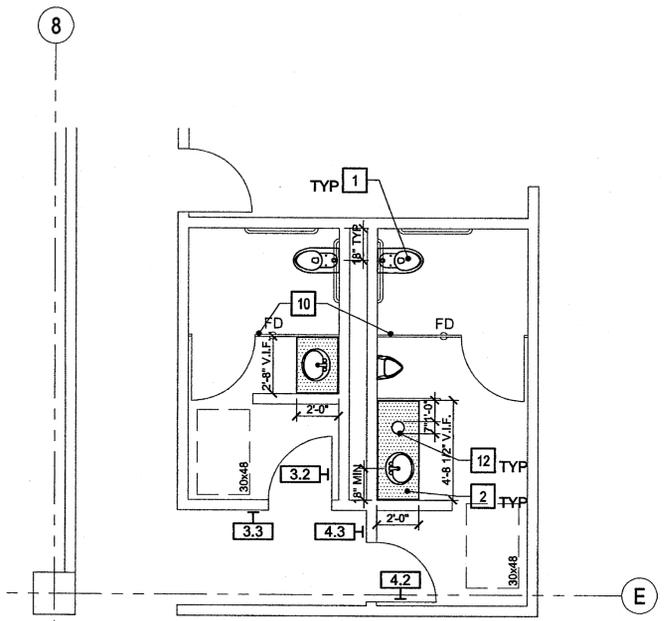
- 1 NEW PLUMBING FIXTURES, PER PLUMBING PLAN, TYP OF ALL
- 2 NEW SOLID SURFACE COUNTERTOP AND BACKSPASH, FINISH PER SCHEDULE
- 3 NEW TOILET PARTITION, FINISH TO MATCH EXISTING
- 4 INSTALL GRAB BAR PER DETAILS 2/G-6, 1/A4.1 AND NOTES ON SHEET G-4
- 5 INSTALL ACCESSIBLE URINAL AND GRAB BARS PER ELEVATIONS AND NOTES ON SHEET G-4 AND DETAIL 1/A4.1, INSTALL NEW BLOCKING AS REQ'D
- 6 INSTALL NEW SHOWER SEAT PER DETAIL 5/G-6 AND NOTES ON SHEETS G-4, G-5
- 7 INSTALL NEW SHOWER FIXTURE PER DETAIL 5/G-6 AND NOTES ON SHEET G-5, TYP OF 2
- 8 PATCH EXISTING WALL AND FLOOR, FINISH TO MATCH EXISTING
- 9 EXISTING SINK AND COUNTER TO REMAIN, PROTECT IN PLACE
- 10 EXISTING TOILET AND URINAL PARTITIONS TO REMAIN, PROTECT IN PLACE
- 11 NEW SHOWER CONTROLS, PER PLUMBING, TYP OF 10
- 12 CORE 7" DIA OPENING IN NEW SOLID SURFACE COUNTER FOR TRASH WASTE, 1/8" RADIUS AT TOP EDGE
- 13 1" CERAMIC FLOOR TILE, COLOR TO MATCH EXISTING, FLOOR IS TO SLOPE TO EXISTING FLOOR DRAINS AND NOT EXCEED 1.5% SLOPE IN ANY DIRECTION. FINISH-TO-FINISH TRANSITION AT EXISTING RESTROOM AREA TO BE FLUSH. GRIND AND/OR LEVEL AS NECESSARY TO ACHIEVE THESE REQUIREMENTS IN THE AREA INDICATED
- 14 NEW ACCESSIBLE LOCKER, TYP OF 2, 1 EACH AT MEN'S AND WOMEN'S LOCKER ROOMS
- 15 NEW MOP SINK PER PLUMBING, NEW SOLID SURFACE WALL COVERING PER DETAIL 9/A4.1, PER PLUMBING

GENERAL NOTES

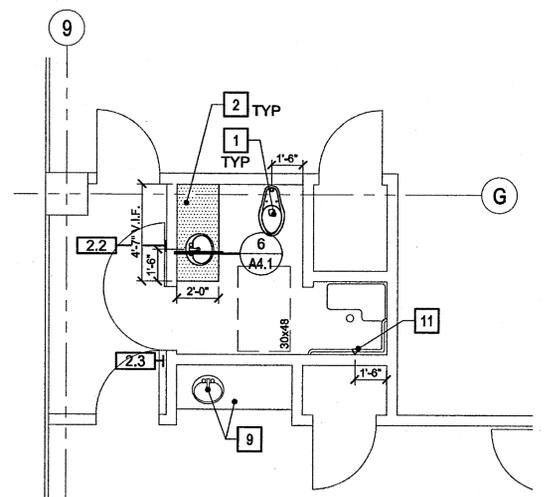
1. PATCH, REPAIR AND RESTORE TO MATCHING CONDITIONS AT ANY DAMAGED AREA BEHIND OR SURROUNDING ITEMS THAT ARE REMOVED UNLESS OTHERWISE NOTED.
2. ALL RESTROOM ENTRY DOORS AND ADJACENT WALL TO RECEIVE NEW SIGNAGE, PER DETAILS 6-9, 11/G-5 AND SIGNAGE SCHEDULE, UNLESS OTHERWISE NOTED.
3. RESTROOM INTERIOR ELEVATIONS PER SHEETS A3.0 AND A3.1
4. ALL RESTROOM AREAS TO SLOPE TO DRAIN AT NO GREATER THAN 1.5% IN ANY DIRECTION.
5. ALL PARTITION DOORS TO ACCESSIBLE RESTROOM STALLS TO HAVE U-SHAPED DOOR PULLS INSTALLED ON INTERIOR AND EXTERIOR SIDES OF DOOR PER DETAIL 4/A4.2 AND INTERNATIONAL SYMBOL OF ACCESSIBILITY SIGNAGE APPLIED TO EXTERIOR SIDE.

SYMBOL LEGEND

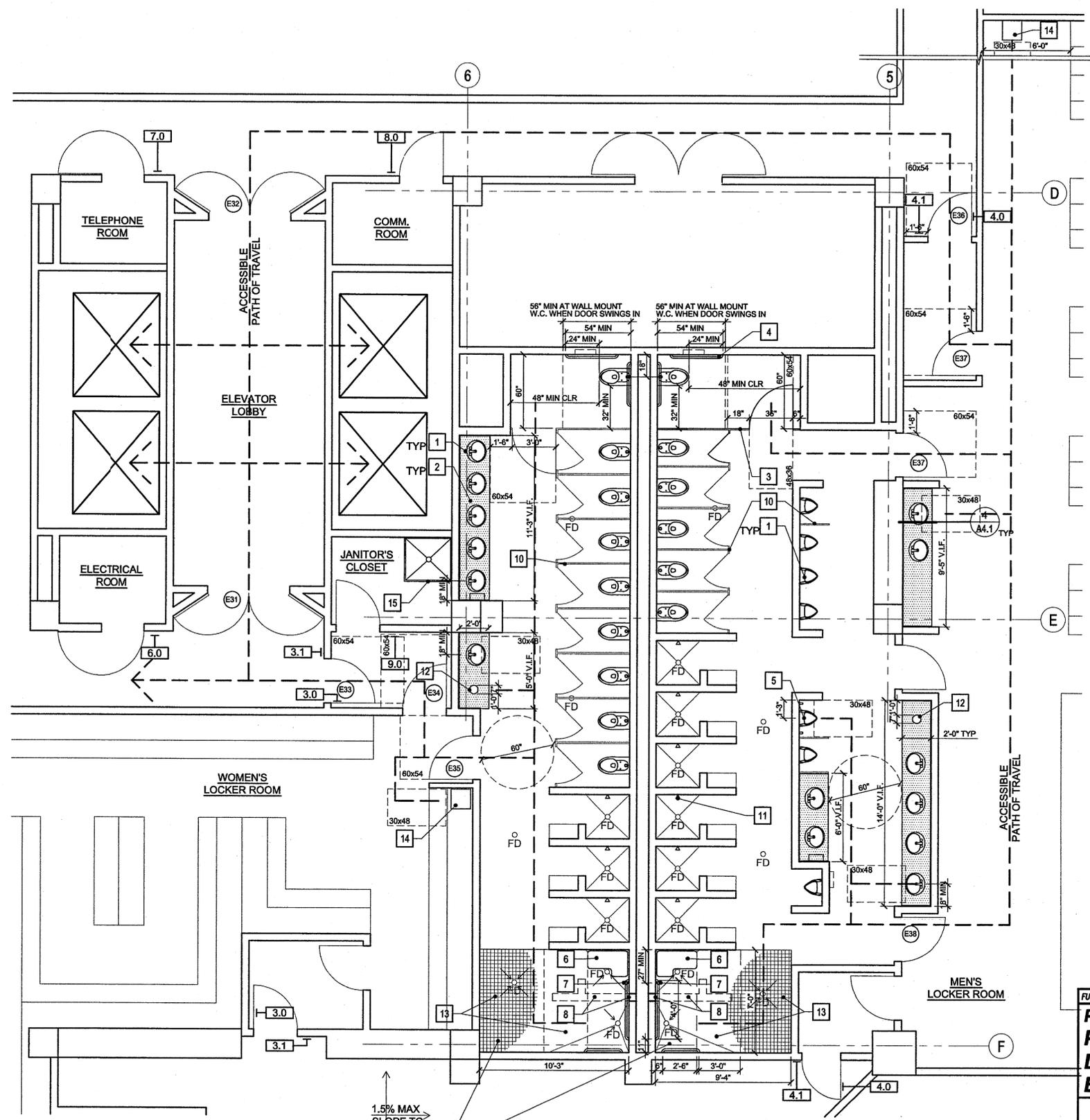
- ACCESSIBLE PATH OF TRAVEL
- ⊗ ACCESSIBLE ELEVATOR, TYP OF 4
- 1.0 SIGNAGE PER SCHEDULE, SHEET A4.0



FLOOR PLAN - LEVEL 7 COMMANDERS RESTROOM 6
(NON-PUBLIC / NON-ACCESSIBLE) SCALE: 1/4" = 1'-0"



FLOOR PLAN - LEVEL 7 CHIEF'S RESTROOM 7
(NON-PUBLIC / NON-ACCESSIBLE) SCALE: 1/4" = 1'-0"



FLOOR PLAN - LEVEL 3 LOCKER ROOM 5
SCALE: 1/4" = 1'-0"

1.5% MAX SLOPE TO DRAIN(S), ALL DIRECTIONS

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
MANUEL ONCINA ARCHITECTS INC.
 PLANNING INTERIORS
 514 Pennsylvania Ave.
 San Diego, CA 92103
 619-295-4500 FAX
 www.moaarchitects.com

SCALE
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 VERTICAL NO SCALE

CITY OF SAN DIEGO PUBLIC WORKS PROJECT

WARNING
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APPROVED BY:
 FOR CITY ENGINEER
 CHECKED BY:
 CONSTRUCTION ENGINEER
 CHECKED BY:
 INSPECTOR

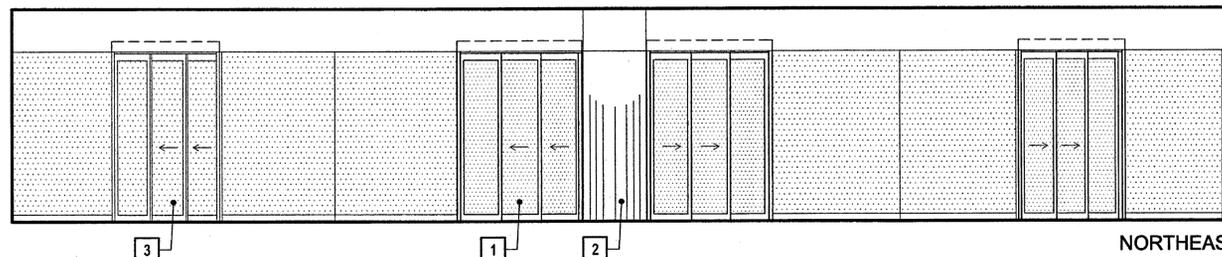
FUNDING CIP/SAP	SPEC. NO.	A2.2
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
RESTROOM IMPROVEMENT PLANS		
CITY OF SAN DIEGO, CALIFORNIA SHEET 17 OF 66 SHEETS		W.B.S. B-00852, B-10008 B-10010
FOR CITY ENGINEER	DATE	SECTION HEAD
DESCRIPTION / BY	APPROVED DATE	PROJECT MANAGER
DSD BACKCHECK MOA	2/14/2012	COS27 COORDINATE
AS-BUILTS		COS83 COORDINATE
CONTRACTOR	DATE STARTED	36392-17-D
INSPECTOR	DATE COMPLETED	

NOTES

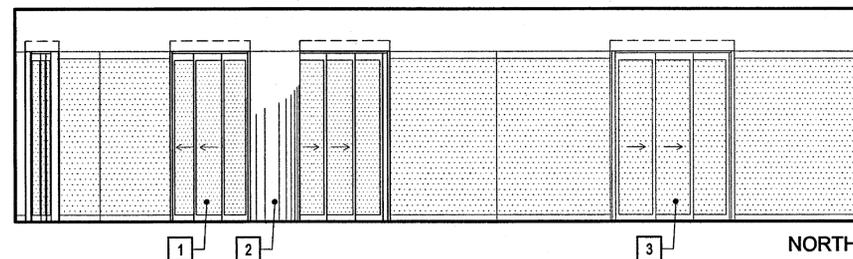
- 1 NEW ACCESSIBLE AUTOMATIC, 3 PANEL TELESCOPING DOOR WITH FULL BREAKOUT PANELS, PER SCHEDULE AND SPECIFICATIONS, TYP OF 3
- 2 EXISTING COLUMN, PROTECT IN PLACE
- 3 EXISTING ACCESSIBLE AUTOMATIC TELESCOPING DOOR

GENERAL NOTES

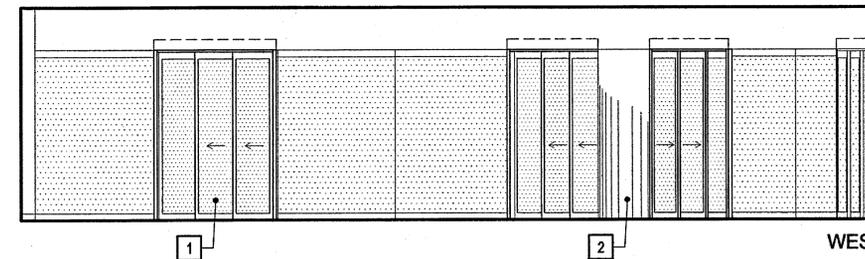
- 1. PATCH, REPAIR AND RESTORE TO MATCHING CONDITIONS AT ANY DAMAGED AREA BEHIND OR SURROUNDING ITEMS THAT ARE REMOVED UNLESS OTHERWISE NOTED.
- 2. APPLY INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) DECAL AT EACH ACCESSIBLE ENTRANCE. 6"x6", PROPORTIONS PER DETAIL 12/G-6



EXTERIOR ELEVATION AT ENTRY
SCALE: 1/4" = 1'-0"

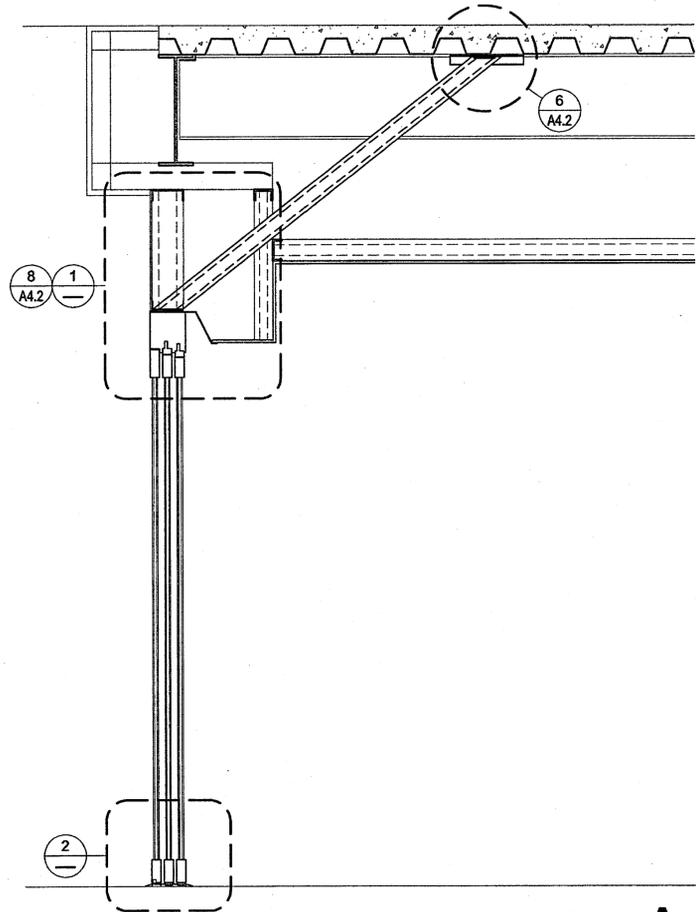
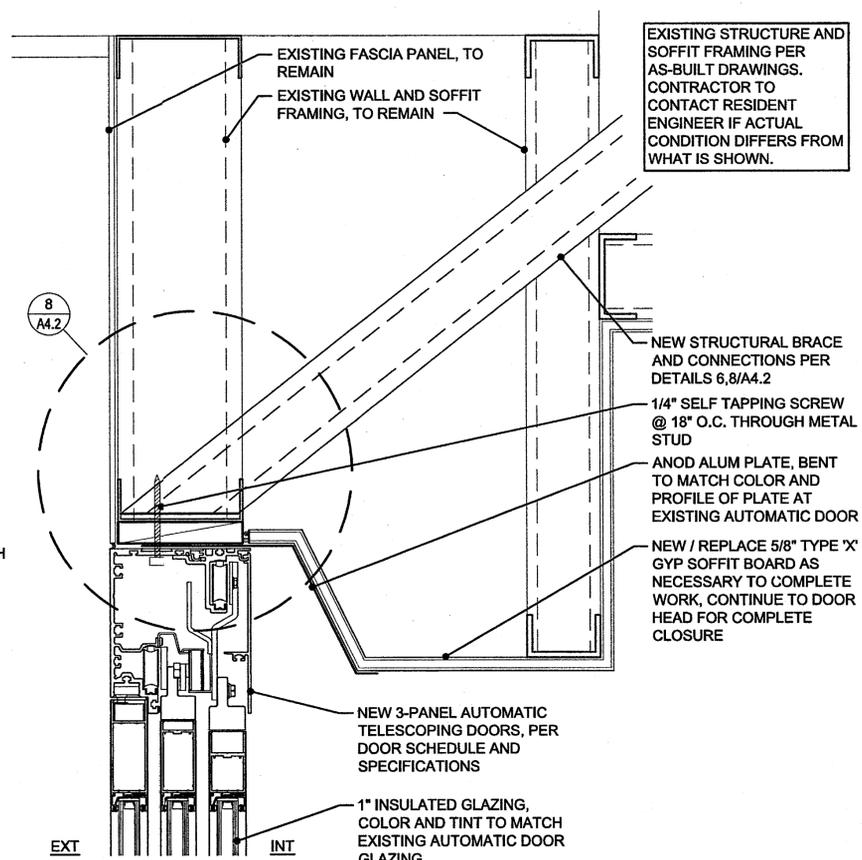


NORTH

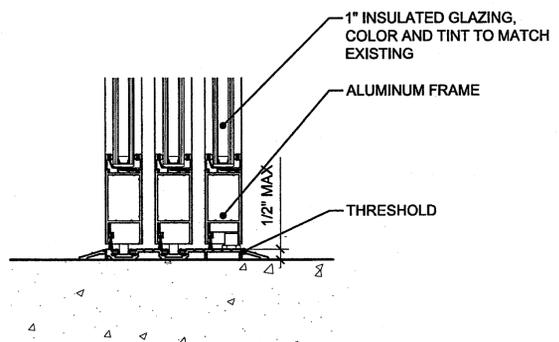


WEST

INTERIOR ELEVATION AT ENTRY
SCALE: 1/4" = 1'-0"



SECTION A
SCALE: 3/4" = 1'-0"



2 TELESCOPING DOOR SILL
SCALE: 3"=1'-0"

1 TELESCOPING DOOR HEAD
SCALE: 3"=1'-0"

FUNDING CIP/SAP		SPEC. NO.		A3.0
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
MAIN ENTRY ELEVATIONS / DETAILS				
CITY OF SAN DIEGO, CALIFORNIA SHEET 18 OF 66 SHEETS			W.B.S. B-00852, B-10008 B-10010	
APPROVED BY:	FOR CITY ENGINEER	APPROVED	DATE	SECTION HEAD
CHECKED BY:	CONSTRUCTION ENGINEER	DSD BACKCHECK MOA	2/14/2012	PROJECT MANAGER
CHECKED BY:	INSPECTOR			CCS27 COORDINATE
				CCS83 COORDINATE
AS-BUILTS				
CONTRACTOR		DATE STARTED		
INSPECTOR		DATE COMPLETED		36392-18-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

MANUEL ONCINA ARCHITECTS INC. ARCHITECTURE PLANNING INTERIORS
514 Pennsylvania Ave. San Diego, CA 92103
619/295-4000 FAX 619/295-4055 FAX
www.manueloncina.com

SCALE: HORIZONTAL NO SCALE VERTICAL NO SCALE

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CITY OF SAN DIEGO PUBLIC WORKS PROJECT

APPROVED BY: [Signature]

DATE: 2-28-13

SCALE OF CALIFORNIA

CITY OF SAN DIEGO - STATE OF CALIFORNIA

MEMBER VIGILANT

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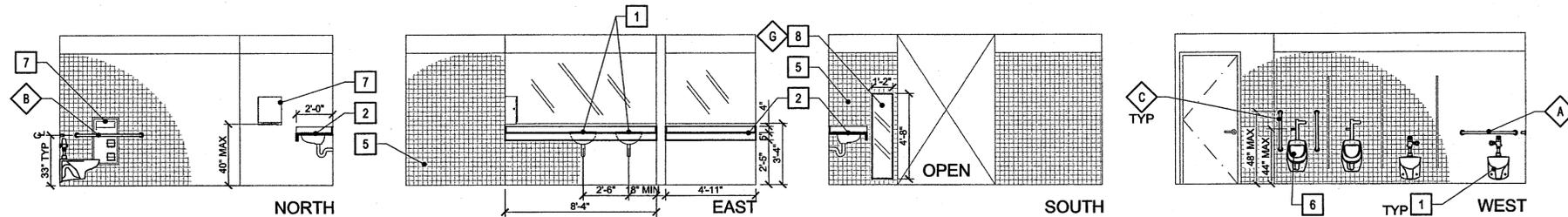
FOR CITY ENGINEER

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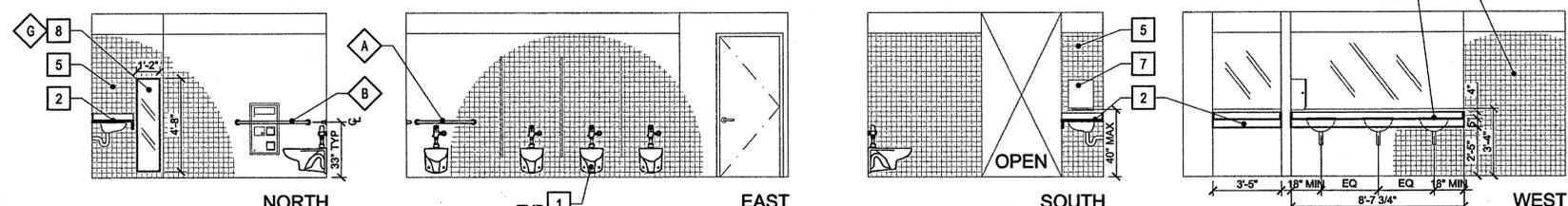
CONSTRUCTION ENGINEER

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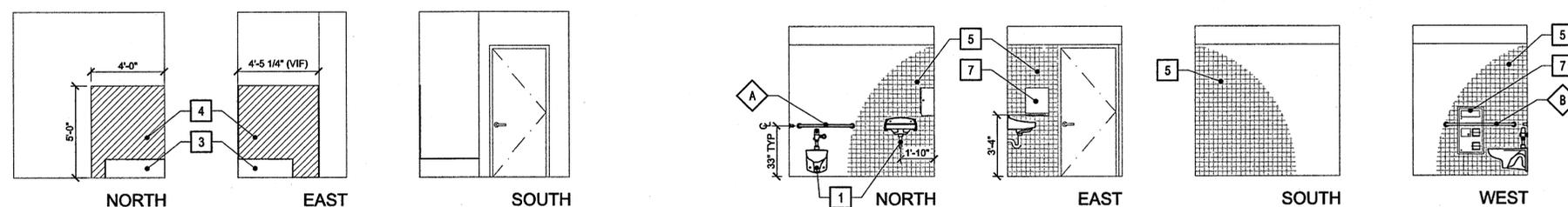
INSPECTOR



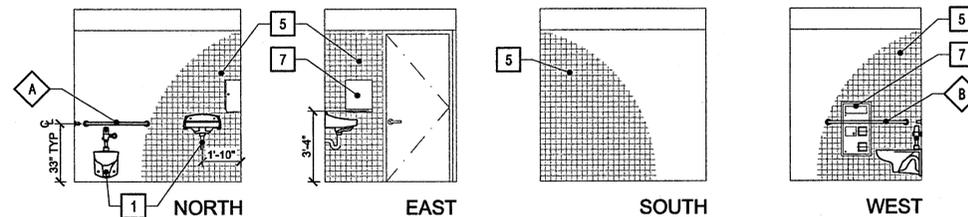
BUILDING CORE - MEN'S RESTROOM
SCALE: 1/4" = 1'-0"



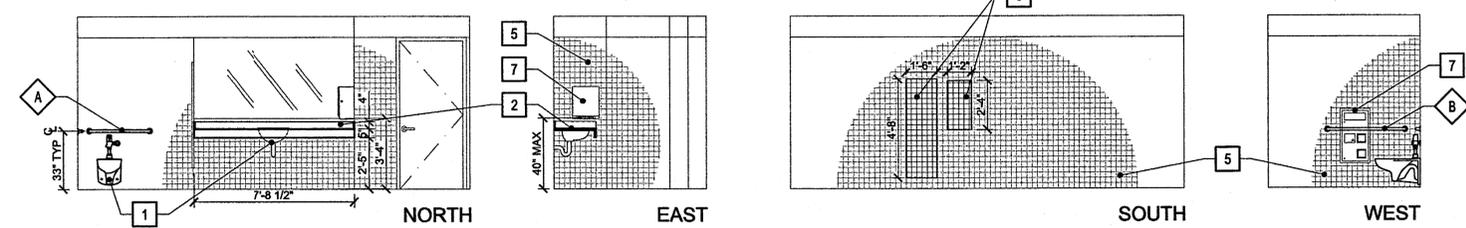
BUILDING CORE - WOMEN'S RESTROOM
SCALE: 1/4" = 1'-0"



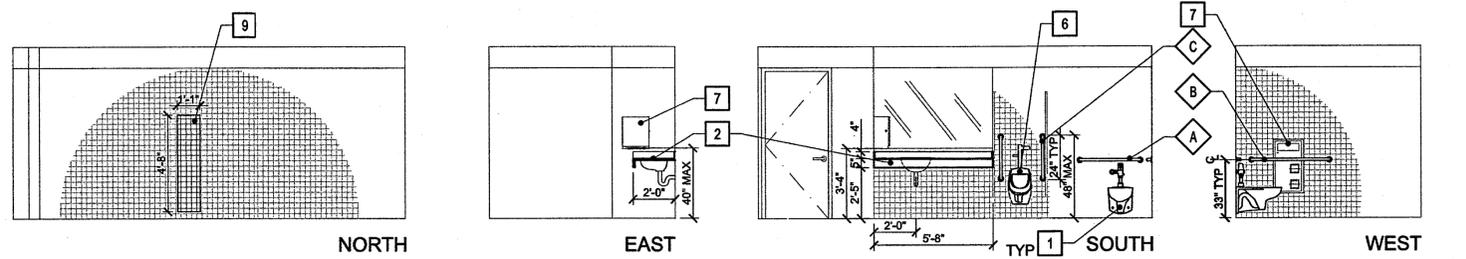
BUILDING CORE - JANITOR
SCALE: 1/4" = 1'-0"



LEVEL P-1 - UNISEX RESTROOM
SCALE: 1/4" = 1'-0"



LEVEL 1 - WOMEN'S PUBLIC RESTROOM
SCALE: 1/4" = 1'-0"



LEVEL 1 - MEN'S PUBLIC RESTROOM
SCALE: 1/4" = 1'-0"

NOTES

- 1 NEW RESTROOM FIXTURES, PER PLUMBING PLAN
- 2 NEW SOLID SURFACE COUNTERTOP AND BACKSPLASH, PER DETAIL 4/A4.1, FINISH PER SCHEDULE
- 3 NEW MOP SINK, PER PLUMBING
- 4 1/4" SOLID SURFACE BACKSPLASH, INSTALL PER SPECIFICATIONS AND DETAIL 9/A4.1
- 5 ALL CERAMIC WALL TILE IS EXISTING AND TO REMAIN, REPAIR WHERE BROKEN DUE TO DEMOLITION OR INSTALLATION, EXISTING TILE COVERS ALL WALL SURFACES UP TO 7'-2"
- 6 INSTALL ACCESSIBLE URINAL AND GRAB BARS PER ELEVATIONS, NOTES ON SHEET G-4 AND DETAIL 1/A4.1, INSTALL NEW BLOCKING AS REQ'D
- 7 EXISTING RESTROOM ACCESSORIES TO REMAIN
- 8 MIRROR TO REPLACE EXISTING PAPER TOWEL / TRASH UNIT AND SANITARY NAPKIN DISPENSER
- 9 CERAMIC TILE, SIZE AND COLOR TO MATCH EXISTING

GENERAL INTERIOR ELEVATION NOTES

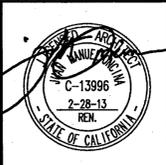
1. PATCH, REPAIR AND RESTORE TO MATCHING CONDITIONS AT ANY DAMAGED AREA BEHIND OR SURROUNDING ITEMS THAT ARE REMOVED UNLESS OTHERWISE NOTED.
2. FOR A DIMENSIONAL LAYOUT OF RESTROOMS SEE SHEETS A2.1 AND A2.2
3. ALL RESTROOM ENTRY DOORS AND ADJACENT WALL TO RECEIVE NEW SIGNAGE, PER DETAILS 6-9, 11/G-5, UNLESS OTHERWISE NOTED.
4. ALL PARTITION DOORS TO ACCESSIBLE RESTROOM STALLS TO HAVE U-SHAPED DOOR PULLS INSTALLED ON INTERIOR AND EXTERIOR SIDES OF DOOR PER DETAIL 4/A4.2 AND INTERNATIONAL SYMBOL OF ACCESSIBILITY SIGNAGE APPLIED TO EXTERIOR SIDE.
5. ALL EXISTING PAPER TOWEL / TRASH UNITS ARE TO BE REMOVED, U.O.N. WHERE EXISTING UNITS ARE RECESSED OR SEMI-RECESSED, WALL MUST BE PATCHED PRIOR TO INSTALLATION OF THE MIRROR.
6. IN FIRST FLOOR PUBLIC RESTROOM AND FIRST FLOOR WATCH COMMANDER'S RESTROOM ONLY, WHERE SANITARY NAPKIN DISPENSER AND PAPER TOWEL / TRASH UNIT IS REMOVED, PATCH WALL AND TILE TO MATCH EXISTING.
7. IN ALL RESTROOMS NOTED ON PLANS PLASTIC LAMINATE COUNTERTOPS ARE TO BE REPLACED BY SOLID SURFACE COUNTERTOPS. IN CORE RESTROOM ON LEVELS 2 AND 4, SOLID SURFACE COUNTERTOPS ARE TO REMAIN.

FUNDING CIP/SAP		SPEC. NO.		A3.1
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
INTERIOR ELEVATIONS				
CITY OF SAN DIEGO, CALIFORNIA SHEET 19 OF 66 SHEETS			W.B.S. B-00852, B-10008 B-10010	
FOR CITY ENGINEER	DATE	APPROVED	DATE	SECTION HEAD
DSD BACKCHECK	MOA	2/14/2012		PROJECT MANAGER
CONSTRUCTION ENGINEER				CSS27 COORDINATE
INSPECTOR				CSS83 COORDINATE
CONTRACTOR	DATE STARTED			
INSPECTOR	DATE COMPLETED			36392-19-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 MANUEL ONCINA ARCHITECTS INC.
 ARCHITECTURE PLANNING INTERIORS
 614 Pennsylvania Ave. San Diego, CA 92103
 619/295-4900 FAX 619/295-4955 FX
 www.oncinainc.com

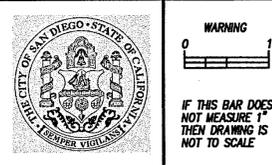
SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE

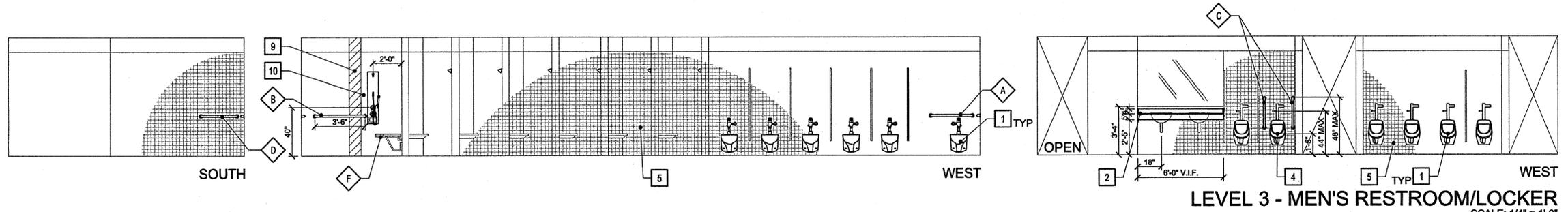


CITY OF SAN DIEGO PUBLIC WORKS PROJECT

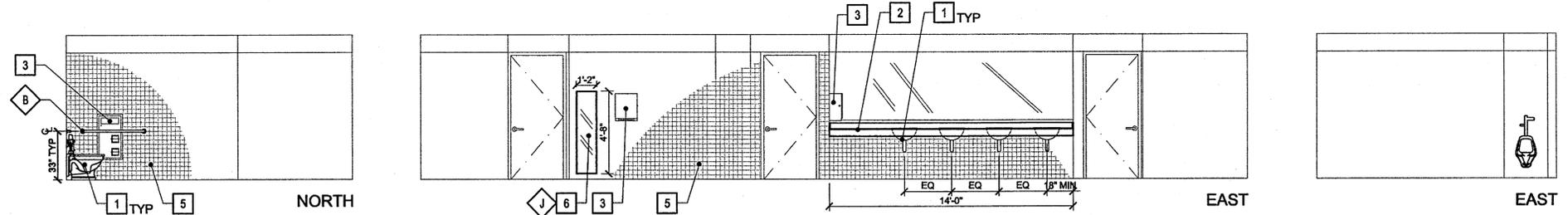
WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY: FOR CITY ENGINEER, CHECKED BY: CONSTRUCTION ENGINEER, INSPECTOR

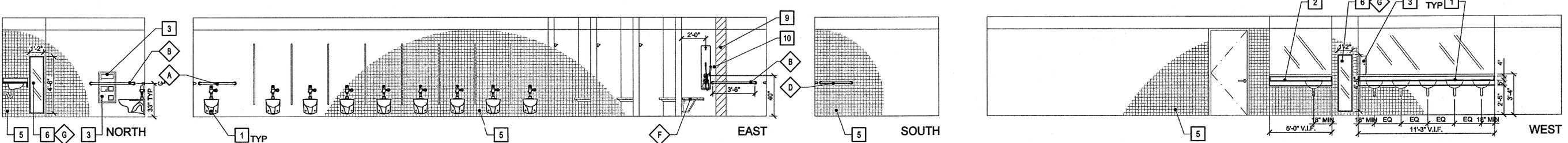




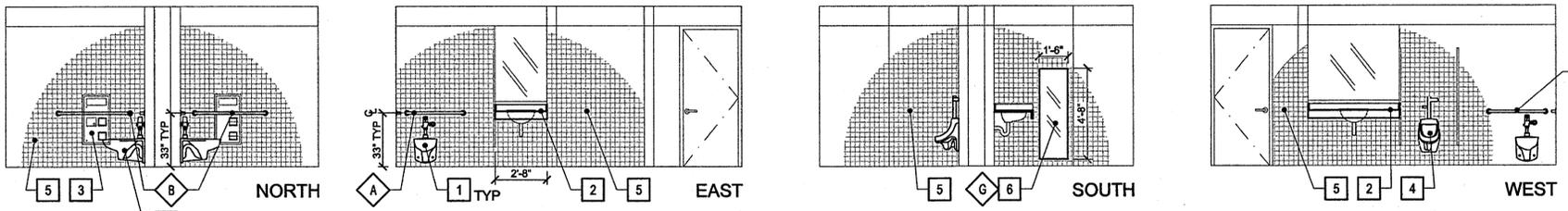
LEVEL 3 - MEN'S RESTROOM/LOCKER
SCALE: 1/4" = 1'-0"



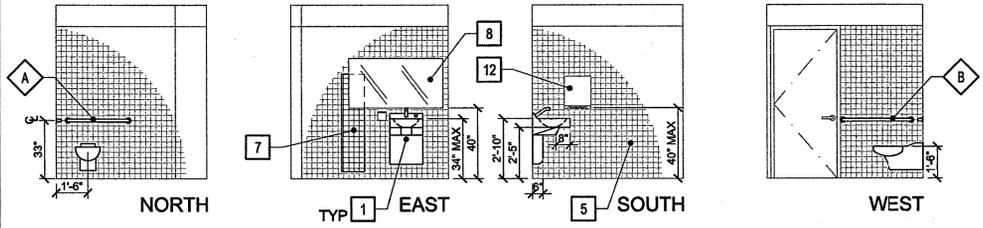
LEVEL 3 - MEN'S RESTROOM/LOCKER
SCALE: 1/4" = 1'-0"



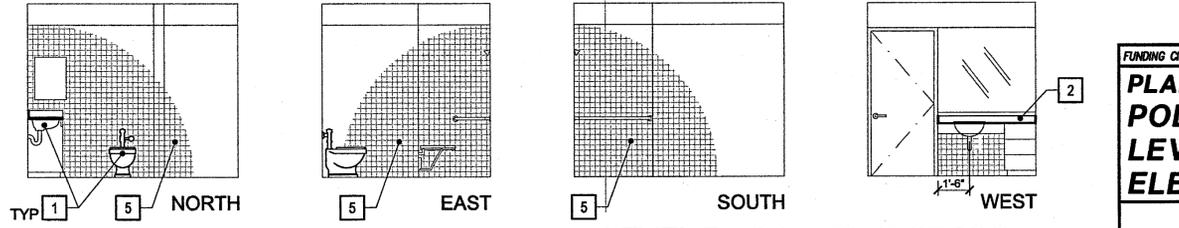
LEVEL 3 - WOMEN'S RESTROOM/LOCKER
SCALE: 1/4" = 1'-0"



LEVEL 7 - COMMANDER'S RESTROOM
SCALE: 1/4" = 1'-0"



LEVEL 1 - WATCH COMMANDER'S RESTROOM
SCALE: 1/4" = 1'-0"



LEVEL 7 - CHIEF'S RESTROOM
SCALE: 1/4" = 1'-0"

- NOTES**
- 1 NEW RESTROOM FIXTURES, PER PLUMBING PLAN
 - 2 NEW SOLID SURFACE COUNTERTOP AND BACKSPASH, PER DETAIL 4/A4.1, FINISH PER SCHEDULE
 - 3 EXISTING RESTROOM ACCESSORIES, TO REMAIN
 - 4 INSTALL ACCESSIBLE URINAL AND GRAB BARS PER ELEVATIONS, NOTES ON SHEET G-4 AND DETAIL 1/A4.1, INSTALL NEW BLOCKING AS REQ'D
 - 5 ALL CERAMIC WALL TILE IS EXISTING AND TO REMAIN, REPAIR WHERE BROKEN DUE TO DEMOLITION OR INSTALLATION, EXISTING TILE COVERS ALL WALL SURFACES UP TO 7'-2"
 - 6 MIRROR TO REPLACE EXISTING PAPER TOWEL / TRASH UNIT AND SANITARY NAPKIN DISPENSER
 - 7 PATCH WALL WHERE ACCESSORY WAS REMOVED, THEN TILE WALL, CERAMIC TILE, SIZE AND COLOR TO MATCH EXISTING
 - 8 EXISTING SS MIRROR, LOWERED TO 40" AFF TO BOTTOM OF REFLECTIVE SURFACE
 - 9 APPROX. AREA OF PATCHING, ACTUAL AREA TO BE DETERMINED IN FIELD, FINISH TO MATCH EXISTING WALL
 - 10 ACCESSIBLE SHOWER CONTROLS, PER PLUMBING
 - 11 SHOWER CONTROLS, PER PLUMBING
 - 12 RELOCATE EXISTING FIXTURES

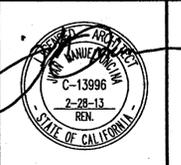
FUNDING CIP/SAP		SPEC. NO.		A3.2
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
INTERIOR ELEVATIONS				
CITY OF SAN DIEGO, CALIFORNIA SHEET 20 OF 66 SHEETS			W.B.S. B-00852, B-10008 B-10010	
FOR CITY ENGINEER	DATE	3/2/12	SECTION HEAD	
DESCRIPTION	BY	APPROVED	DATE	FILMED
DSD BACKCHECK	MOA		2/14/2012	
CONSTRUCTION ENGINEER			PROJECT MANAGER	
CHECKED BY:			CCS27 COORDINATE	
INSPECTOR			CCS83 COORDINATE	
AS-BUILTS		DATE STARTED		
CONTRACTOR		DATE COMPLETED		
INSPECTOR		36392-20-D		

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

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SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT

WARNING

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APPROVED BY: FOR CITY ENGINEER

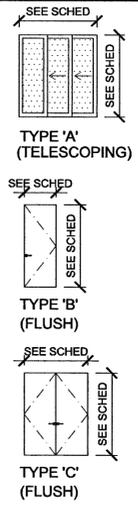
CHECKED BY: CONSTRUCTION ENGINEER

INSPECTOR

DOOR SCHEDULE

NO.	SIZE	DOOR		FRAME		RATING	HDWR	DETAILS		
		TYPE	MATL	MATL	FIN.			HEAD	SILL	COMM.
201	6'-0" x 8'-0" x 1-3/4"	A	ANOD	ANOD	ANOD	N/A	-	1/A3.0	2/A3.0	1,2,3,4
202	6'-0" x 8'-0" x 1-3/4"	A	ANOD	ANOD	ANOD	N/A	-	1/A3.0	2/A3.0	1,2,3,4
203	6'-0" x 8'-0" x 1-3/4"	A	ANOD	ANOD	ANOD	N/A	-	1/A3.0	2/A3.0	1,2,3,4
NEW										
LEVEL 2										
P-1	002	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	1	-	5
P-2										
EP1	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
EP2	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
P-1										
E01	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
LEVEL 1										
E11	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E12	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E13	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E14	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E15	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E16	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E17	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E18	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E19	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
LEVEL 2										
E21	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E22	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E23	6'-0" x 7'-0" x 1-3/4"	A	ANOD	ANOD	ANOD	N/A	-	-	-	5
E24	6'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E25	6'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E26	6'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E27	6'-0" x 8'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
EXISTING										
LEVEL 3										
E31	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E32	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E33	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E34	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E35	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E36	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E37	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E38	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E39	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
LEVEL 4										
E41	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E42	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E43	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E44	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E45	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E46	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
LEVEL 5										
E51	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E52	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E53	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E54	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E55	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E56	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
LEVEL 6										
E61	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E62	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E63	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E64	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E65	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E66	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
LEVEL 7										
E71	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E72	6'-0" x 7'-0" x 1-3/4"	C	HM	HM	PT	FR	-	-	-	5
E73	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E74	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E75	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5
E76	3'-0" x 7'-0" x 1-3/4"	B	HM	HM	PT	-	-	-	-	5

DOOR TYPES



DOOR SCHEDULE LEGEND

- ALUM = EXTRUDED ALUMINUM
- ANOD = ANODIZED BRONZE
- HM = HOLLOW METAL
- PT = PAINT

DOOR SCHEDULE COMMENTS

1. GLASS COLOR AND TINT TO MATCH EXISTING
2. DOOR TO TELESCOPE IN DIRECTION PER PLAN.
3. APPLY INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) DECAL AT EACH ACCESSIBLE ENTRANCE. 6"x6", PROPORTIONS PER DETAIL 12/G-6
4. HARDWARE PER MANUFACTURER.
5. EXISTING INSTALLATION. HARDWARE SET, HEAD AND SILL DETAILS N/A. ADJUST EACH DOOR WITH EXISTING CLOSER FOR SMOOTH OPERATION AND TO MEET MAX FORCE REQUIREMENTS OF 5LBF FOR OPERATION.

SIGNAGE SCHEDULE

SIGN #	DESCRIPTION	LEVEL	SIGN TYPE	QTY	TEXT	DETAIL
1.0	ACCESSIBLE PARKING	P-2(x4)	ACCESSIBLE PARKING	4	ISA, "PARKING ONLY", "\$250 FINE"	10/A4.1
1.1	ACCESSIBLE VAN PARKING	P-2(x4), 1	VAN ACCESS. PARKING	5	ISA, "PARKING ONLY", "VAN ACCESSIBLE", "\$250 FINE"	11/A4.1
2.0	UNISEX RESTROOM	P-1, 1	DOOR PLAQUE	2	MALE/FEMALE SYMBOL, "RESTROOM"	7/G-6
2.1	UNISEX RESTROOM	P-1, 1	TACTILE SIGNAGE	2	MALE/FEMALE SYMBOL, ISA, "RESTROOM"	9/G-6
2.2	UNISEX RESTROOM	7	DOOR PLAQUE	1	MALE/FEMALE SYMBOL, "RESTROOM" (NO ISA)	7/G-6 (SIM)
2.3	UNISEX RESTROOM	7	RESTROOM WALL I.D.	1	MALE/FEMALE SYMBOL, "RESTROOM" (NO ISA)	9/G-6 (SIM)
3.0	WOMEN'S RESTROOM	1(x2), 2, 3(x2), 4, 5, 6, 7(x2)	DOOR PLAQUE	10	FEMALE SYMBOL, "WOMEN"	6/G-6
3.1	WOMEN'S RESTROOM	1(x2), 2, 3(x2), 4, 5, 6, 7(x2)	TACTILE SIGNAGE	10	FEMALE SYMBOL, ISA, "WOMEN"	8/G-6
3.2	WOMEN'S RESTROOM	7	DOOR PLAQUE	1	FEMALE SYMBOL, "WOMEN" (NO ISA)	6/G-6 (SIM)
3.3	WOMEN'S RESTROOM	7	RESTROOM WALL I.D.	1	FEMALE SYMBOL, "WOMEN" (NO ISA)	8/G-6 (SIM)
4.0	MEN'S RESTROOM	1(x2), 2, 3(x2), 4, 5, 6, 7(x2)	DOOR PLAQUE	10	MALE SYMBOL, "MEN"	6/G-6
4.1	MEN'S RESTROOM	1(x2), 2, 3(x2), 4, 5, 6, 7(x2)	TACTILE SIGNAGE	10	MALE SYMBOL, ISA, "MEN"	8/G-6
4.2	MEN'S RESTROOM	7	DOOR PLAQUE	1	MALE SYMBOL, "MEN" (NO ISA)	6/G-6 (SIM)
4.3	MEN'S RESTROOM	7	RESTROOM WALL I.D.	1	MALE SYMBOL, "MEN" (NO ISA)	8/G-6 (SIM)
5.0	INT'L SYMBOL OF ACCESSIBILITY (ISA)	1(x2), 2, 3(x2), 4, 5, 6, 7(x2)	ISA AT STALL DOOR	10	ISA, NO COPY	12/G-6
5.1	INT'L SYMBOL OF ACCESSIBILITY (ISA)	1, 2(x4)	ISA AT ENTRANCE	5	ISA, NO COPY	12/G-6
6.0	CORE ELECTRICAL ROOM	P-2, P-1, 1, 2, 3, 4, 5, 6, 7	TACTILE ROOM I.D.	9	"ELECTRICAL ROOM"	10/G-6
7.0	CORE TELEPHONE ROOM	P-2, P-1, 1, 2, 3, 4, 5, 6, 7	TACTILE ROOM I.D.	9	"TELEPHONE ROOM"	10/G-6
8.0	CORE COMMUNICATIONS ROOM	P-2, P-1, 1, 2, 3, 4, 5, 6, 7	TACTILE ROOM I.D.	9	"COMMUNICATIONS ROOM"	10/G-6
9.0	CORE JANITOR CLOSET	P-1, 1, 2, 3, 4, 5, 6, 7	TACTILE ROOM I.D.	8	"JANITOR"	10/G-6
10.0	FIRE CONTROL ROOM	2	TACTILE ROOM I.D.	1	"FIRE CONTROL ROOM"	10/G-6
11.0	UPS ROOM	P-2	TACTILE ROOM I.D.	1	"ELECTRICAL UPS ROOM"	10/G-6
12.0	GENERATOR ROOM	P-2	TACTILE ROOM I.D.	1	"GENERATOR"	10/G-6
13.0	CO-GENERATOR ROOM	P-2	TACTILE ROOM I.D.	1	"CO-GENERATOR"	10/G-6
14.0	ELECTRICAL ROOM	P-1	TACTILE ROOM I.D.	1	"ELECTRICAL ROOM"	10/G-6

SIGNAGE SCHEDULE NOTES

1. ALL SIGNAGE TO COMPLY WITH CURRENT CODE REQUIREMENTS AND NOTES ON SHEET G-3 AND G-4.
2. INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) SIGNAGE TO BE PROVIDED AT ALL ACCESSIBLE ENTRANCES TO BUILDING AND PARTITION DOORS TO ACCESSIBLE STALLS IN ACCESSIBLE RESTROOMS.
3. INSTALL TACTILE WALL SIGNAGE AND RESTROOM DOOR PLAQUES IN LOCATIONS INDICATED PER DETAIL 11/G-6.

INTERIOR FINISH SCHEDULE

ROOM NAME	COUNTERTOP		WALL	FLOOR	CEILING
	MEN'S	WOMEN'S			
LEVEL P-1 - UNISEX RESTROOM	N/A	N/A	EXIST	EXIST	EXIST
LEVEL 1 - WATCH COMMANDER'S RESTROOM	N/A	N/A	EXIST	EXIST	EXIST
LEVEL 1 - PUBLIC RESTROOMS	SS-1	SS-1	EXIST	EXIST	EXIST
LEVEL 1 - BUILDING CORE RESTROOMS	SS-1	EXIST	EXIST	EXIST	EXIST
LEVEL 2 - BUILDING CORE RESTROOMS	EXIST	EXIST	EXIST	EXIST	EXIST
LEVEL 3 - LOCKER ROOM/RESTROOMS	SS-2	SS-2	EXIST	EXIST	EXIST
LEVEL 4 - BUILDING CORE RESTROOMS	EXIST	EXIST	EXIST	EXIST	EXIST
LEVEL 5 - BUILDING CORE RESTROOMS	SS-2	SS-2	EXIST	EXIST	EXIST
LEVEL 6 - BUILDING CORE RESTROOMS	SS-1	SS-1	EXIST	EXIST	EXIST
LEVEL 7 - BUILDING CORE RESTROOMS	SS-1	SS-1	EXIST	EXIST	EXIST
LEVEL 7 - COMMANDER'S OFFICE RESTROOMS	SS-1	SS-1	EXIST	EXIST	EXIST
LEVEL 7 - CHIEF'S OFFICE RESTROOM		SS-1	EXIST	EXIST	EXIST
ALL LEVELS - JANITOR'S CLOSET (SEE 9/A4.1)	N/A	N/A	SS-1	EXIST	EXIST

INTERIOR FINISH SCHEDULE LEGEND

- EXIST = EXISTING / PATCH TO MATCH EXISTING
- SS-1 = 'MEGANITE' SOLID SURFACE, COLOR: WINTER BOULDER 800
- SS-2 = 'MEGANITE' SOLID SURFACE, COLOR: SOLITUDE GRANITE 693

RESTROOM ACCESSORY SCHEDULE

ITEM #	DESCRIPTION	MODEL #	COM.	QTY
A	WALL GRAB BAR, 36"L	B-6806x36	1,6	18
B	WALL GRAB BAR, 48"L	B-6806x48	1,6	20
C	WALL GRAB BAR, 24"L	B-6806x24	1,6	16
D	WALL GRAB BAR, 30"L	B-6806x30	1,6	2
E	P-TRAP, WATER SUPPLY / VALVE COVERS - 3 PART SET	396 WHITE	2,3	V.I.F
F	FOLDABLE SHOWER SEAT, SOLID PHENOLIC	B-517	1	2
G	MIRROR W/ SS FRAME - SIZE PER INTERIOR ELEVATIONS		4,5	7
H	LOOP DOOR PULL AT EACH ACCESSIBLE STALL DOOR (INT + EXT)	PER 3/A4.2	7	36

RESTROOM ACCESSORY SCHEDULE COMMENTS

1. AS MANUFACTURED BY 'BOBRICK WASHROOM EQUIPMENT, INC', OR EQUAL.
2. AS MANUFACTURED BY 'TRAP GEAR', OR EQUAL.
3. INSTALL P-TRAP, SUPPLY AND VALVE COVERS AT ALL SINKS.
4. MIRRORS TO BE TEMPERED.
5. CONFIRM MEASUREMENTS IN FIELD PRIOR TO ORDERING.
6. INSTALL GRAB BARS PER DETAILS 1,2/A4.1. IF POSSIBLE UTILIZE EXISTING BACKING PLATE.
7. STAINLESS STEEL, INSTALL PER CITY ACCESS MEMO 2004-01 AND UPDATE LETTER DATED APRIL 20, 2006.

FLUOROPOLYMER QP/SAP SPEC. NO. A4.0

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

SCHEDULES

CITY OF SAN DIEGO, CALIFORNIA
SHEET 21 OF 66 SHEETS

W.B.S. B-00852, B-10008
B-10010

FOR CITY ENGINEER	DATE	SECTION HEAD
DESCRIPTION	BY	APPROVED
DSD BACKCHECK	MOA	2/14/2012
CONSTRUCTION ENGINEER	DATE	FILED
CHECKED BY		
INSPECTOR		
AS-BUILTS		
CONTRACTOR	DATE STARTED	
INSPECTOR	DATE COMPLETED	

36392-21-D

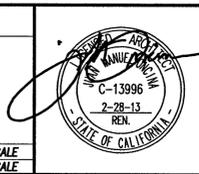
CONSTRUCTION CHANGE / ADDENDUM

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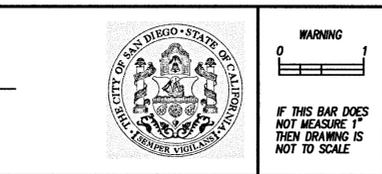
CONSULTANT

MANUEL ONCINA
ARCHITECTS INC.
ARCHITECTURE
PLANNING
INTERIORS
614 Pennsylvania Ave.
San Diego, CA 92103
619/295-4900 FAX
www.oncina.com

SCALE: HORIZONTAL NO SCALE
VERTICAL NO SCALE

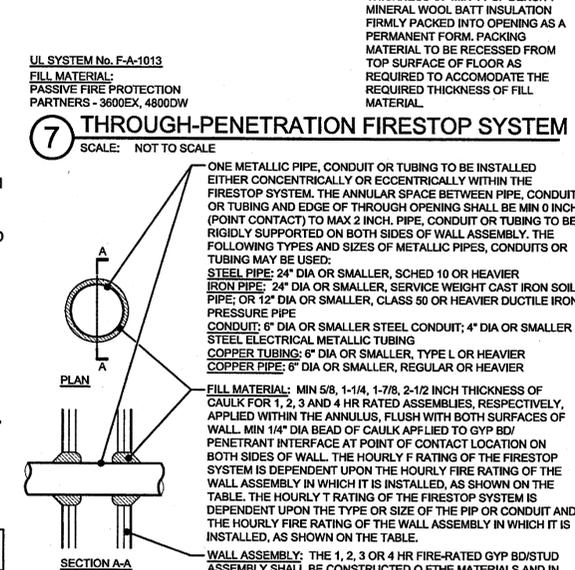
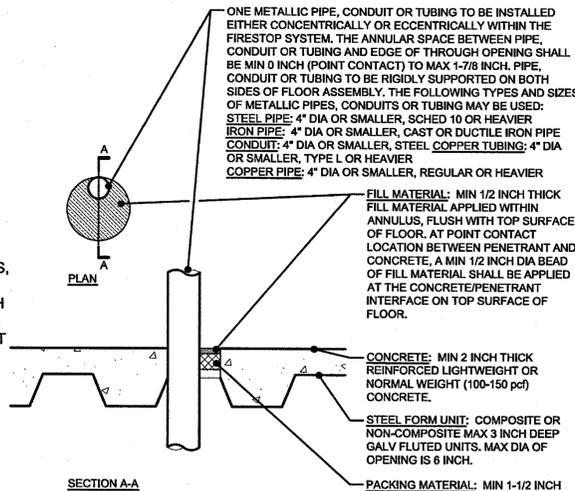
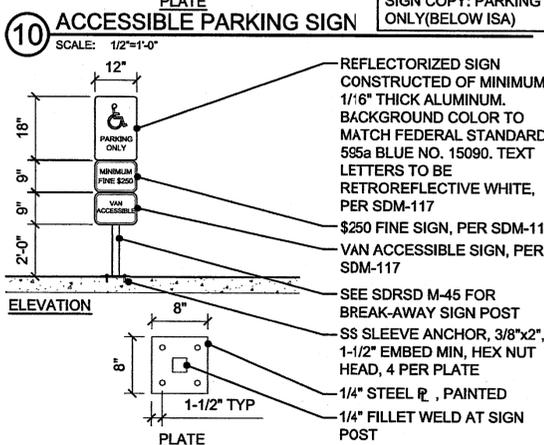
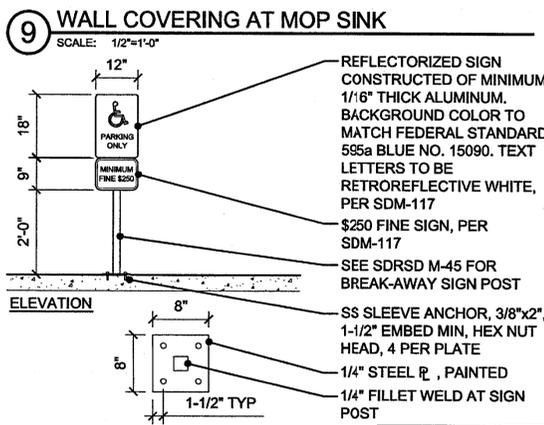
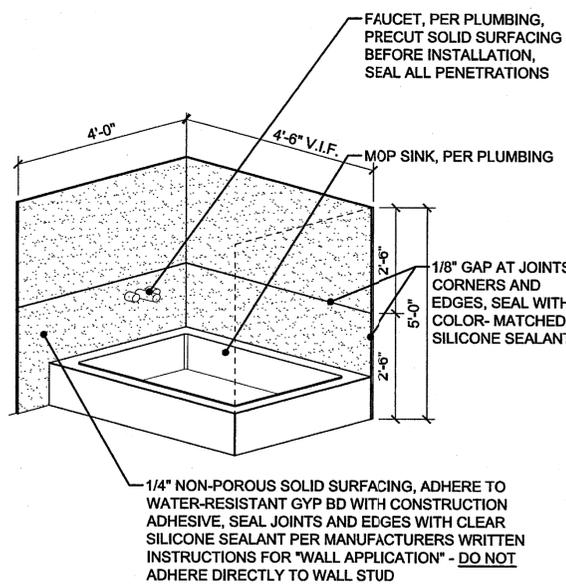


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PUBLIC WORKS PROJECT**



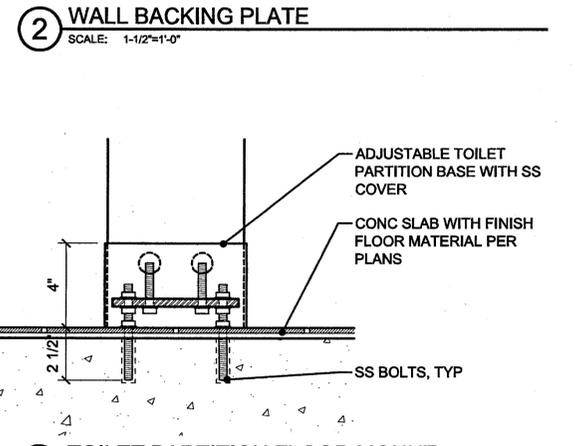
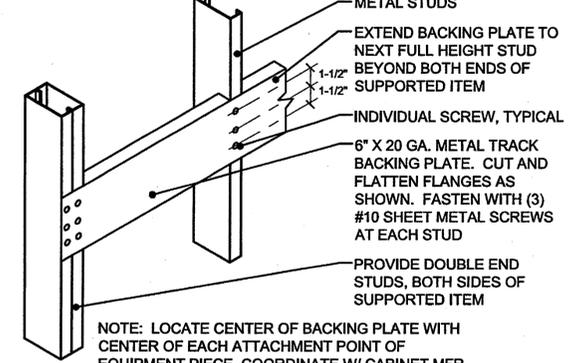
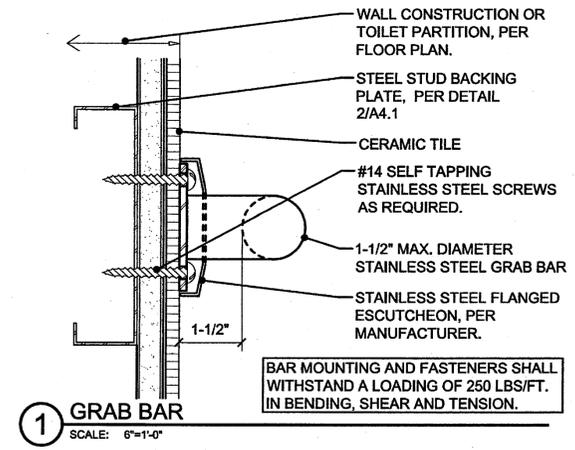
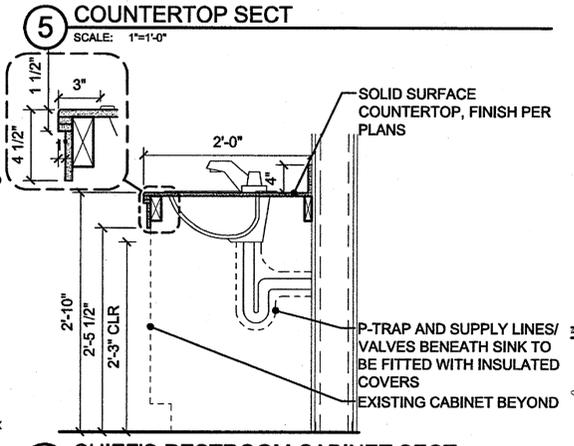
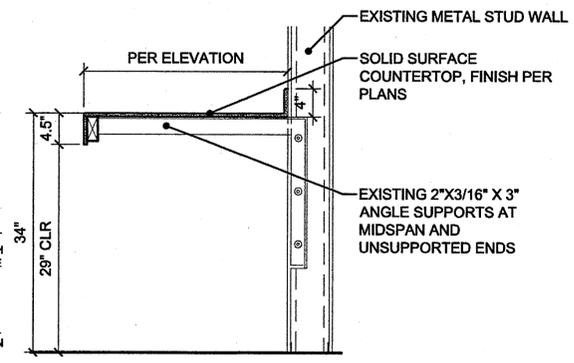
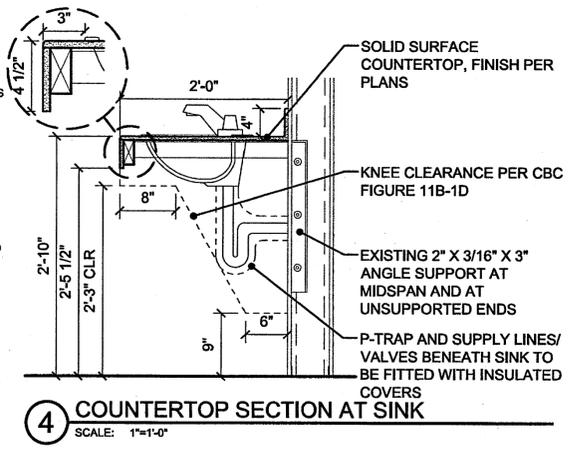
WARNING

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MAX PIPE OR CONDUIT DIA (INCH)	F RATING (HR)	T RATING (HR)
1	1 OR 2	0, 1 OR 2
2	3 OR 4	3 OR 4
4	1 OR 2	0
6	3 OR 4	0
12	1 OR 2	0

UL SYSTEM No. W-1-1001
FILL MATERIAL: 3M COMPANY - CP 295W+ OR FB-3000 W/T.



CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

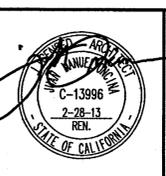
CONSULTANT

MANUEL ONGINA ARCHITECTS INC. ARCHITECTURE PLANNING INTERIORS

514 Pennsylvania Ave. San Diego, CA 92103

619-295-4900 FAX 619-295-4955

SCALE: HORIZONTAL NO SCALE VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT

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APPROVED BY: FOR CITY ENGINEER

CHECKED BY: CONSTRUCTION ENGINEER

INSPECTOR

DESCRIPTION	BY	APPROVED	DATE	FILED
DSD BACKCHECK	MOA		2/14/2012	

FUNDING CP/SAP: SPEC. NO. A4.1

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

DETAILS

CITY OF SAN DIEGO, CALIFORNIA
SHEET 22 OF 66 SHEETS

W.B.S. B-00952, B-10008
B-10010

FOR CITY ENGINEER: 3/0/12

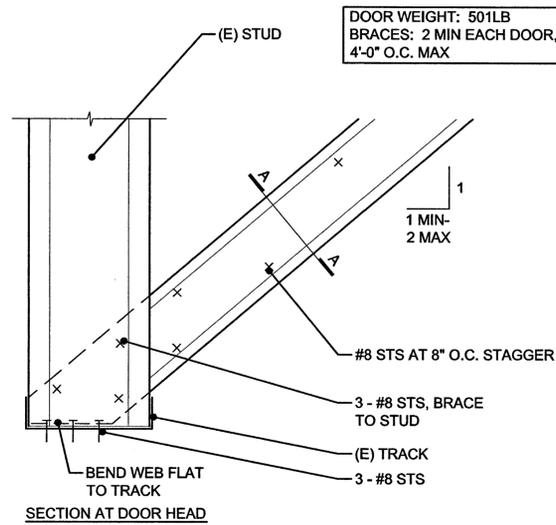
SECTION HEAD: PROJECT MANAGER

CSS27 COORDINATE

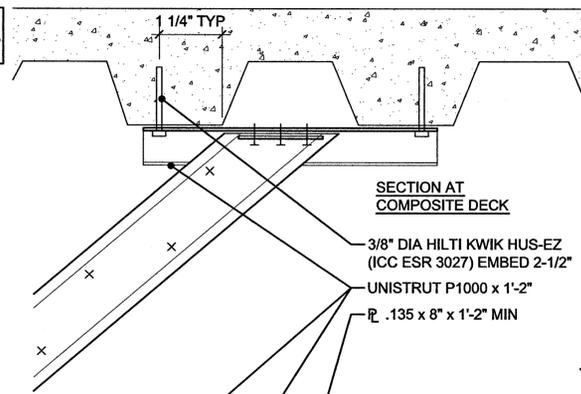
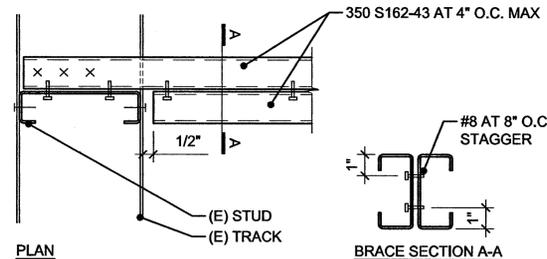
CSS83 COORDINATE

CONTRACTOR: DATE STARTED: 36392-22-D

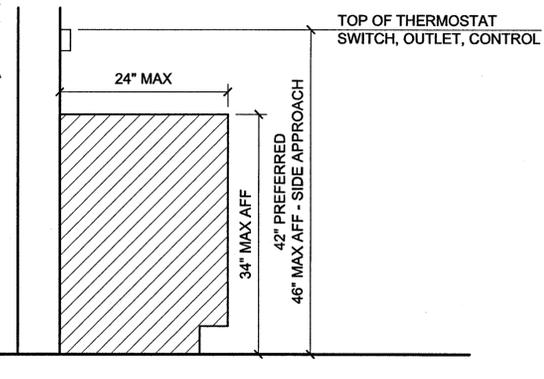
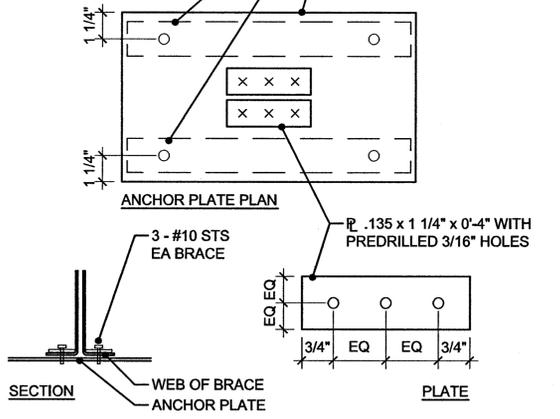
INSPECTOR: DATE COMPLETED:



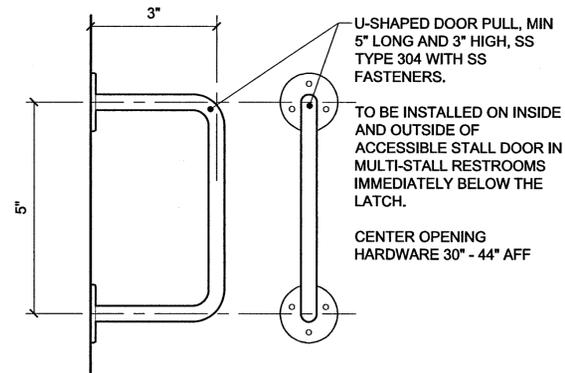
8 BRACE AT DOOR HEAD
SCALE: 3\"/>



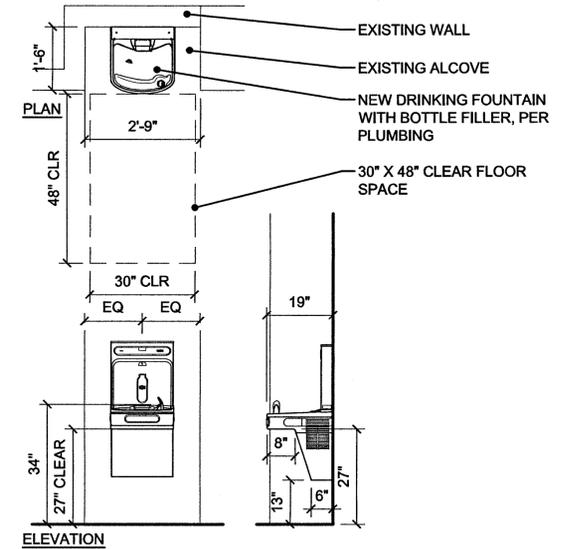
6 BRACE ANCHOR AT COMPOSITE FLOOR DECK
SCALE: 3\"/>



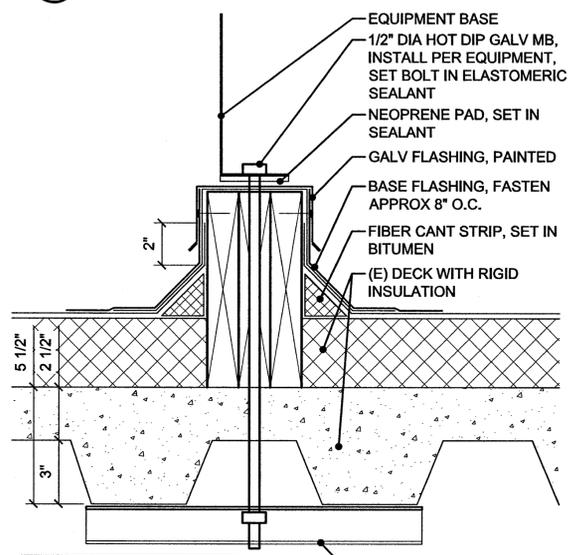
3 MOUNTING HEIGHT OVER OBSTRUCTION
SCALE: 1\"/>



4 DOOR PULL - ACCESSIBLE STALL DOOR
SCALE: 6\"/>

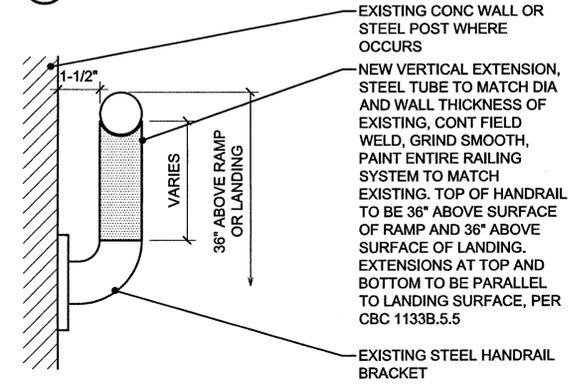


1 DRINKING FOUNTAIN
SCALE: 1/2\"/>



7 HVAC EQUIPMENT ANCHOR
SCALE: 3\"/>

5 NOT USED
SCALE: NONE

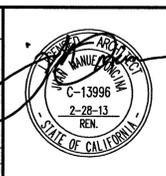


2 HANDRAIL - HEIGHT EXTENSION RETROFIT
SCALE: 3\"/>

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 MANUEL ONCINA ARCHITECTS INC. ARCHITECTURE PLANNING INTERIORS
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SCALE
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 VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT

WARNING
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APPROVED BY:
 FOR CITY ENGINEER
 CHECKED BY:
 CONSTRUCTION ENGINEER
 CHECKED BY:
 INSPECTOR

FUNDING CIP/SAP _____ SPEC. NO. _____ A4.2

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

DETAILS

CITY OF SAN DIEGO, CALIFORNIA
 SHEET 23 OF 66 SHEETS

W.B.S. B-00852, B-10008, B-10010

DESCRIPTION	BY	APPROVED	DATE	FILED	SECTION HEAD
DSD BACKCHECK	MOA		2/14/2012		PROJECT MANAGER
AS-BUILTS					CSS27 COORDINATE
CONTRACTOR					CSS83 COORDINATE
INSPECTOR					

DATE STARTED _____ DATE COMPLETED _____

36392-23-D

FIXTURE SCHEDULE

ITEM NO.	DESCRIPTION	TOTAL	MINIMUM ROUGH-IN SIZE						REMARKS
			WASTE	TRAP	VENT	CW	HW	OTHER	
WC 1	WATER CLOSET	17	4"	INTEGRAL	2"	1"	---	---	AMERICAN STANDARD "OR APPROVED EQUAL", AFWALL 3355.160, VITREOUS CHINA, 1.6 GPF, ELONGATED BOWL, DIRECT FED SIPHON JET, 1-1/2" TOP SPUD, WALL MOUNTED FLUSHOMETER VALVE TOILET, ADA COMPLIANT.
WC 2	WATER CLOSET	39	4"	INTEGRAL	2"	1"	---	---	SLOAN "OR APPROVED EQUAL" UPPERCUT WES-111 HIGH EFFICIENCY FLUSHOMETER, DOWN 1.6 GPF AND UP 1.1 GPF, SPUD COUPLING AND FLANGE FOR 1-1/2" TOP SPUD.
WC 3	WATER CLOSET	1	4"	INTEGRAL	2"	1"	---	---	SLOAN "OR APPROVED EQUAL" UPPERCUT WES-111 HIGH EFFICIENCY FLUSHOMETER, DOWN 1.6 GPF AND UP 1.1 GPF, SPUD COUPLING AND FLANGE FOR 1-1/2" TOP SPUD.
WC 4	WATER CLOSET	1	4"	INTEGRAL	2"	1"	---	---	ACORN "OR APPROVED EQUAL", 2105BAR-T-1-FVL, ADA, "DURA-WARE" SIPHON JET, 16 GAUGE, 1-1/2" (40 mm) FLUSH VALVE CONNECTION, TYPE 304 STAINLESS STEEL, SEAMLESS WELDED CONSTRUCTION, SATIN FINISH, CONCEALED FLUSH VALVE, THRU WALL CONNECTION, ELONGATED BOWL, SELF-DRAINING FLUSHING RIM, 1.6 GPF FLUSH.
L 1	LAVATORY	46	1 1/2"	2"	1-1/2"	1/2"	1/2"	---	AMERICAN STANDARD, "OR APPROVED EQUAL" 3641.016 ADA COMPLIANT, TOP SPUD FLUSH VALVE, FLOOR MOUNT TOILET, VITREOUS CHINA, 6047.161.002, 1.6 GPF, MANUAL FLUSH
L 2	LAVATORY	3	1 1/2"	2"	1-1/2"	1/2"	1/2"	---	KOHLER "OR APPROVED EQUAL", K-2209 UNDERCOUNTER LAVATORY OF VITREOUS CHINA, WATER DEPTH 4" AND ADA COMPLIANT. MOEN FAUCETS "OR APPROVED EQUAL" CAL84500 METAL CONSTRUCTION CHROME FINISH, PIVOT ACTION LEVER STYLE HANDLE AND ADA COMPLIANT.
L 3	LAVATORY	1	1 1/2"	2"	1-1/2"	1/2"	1/2"	---	KOHLER "OR APPROVED EQUAL", K-2209 UNDERCOUNTER LAVATORY OF VITREOUS CHINA, WATER DEPTH 4" AND ADA COMPLIANT. ZURN FAUCETS "OR APPROVED EQUAL" Z6914 SENSOR FAUCET, 4 "AA" BATTERIES POWERED AND 1.5 GPM VANDAL RESISTANT AERATOR. CHROME FINISH, ADA COMPLIANT, P6900 MV TEMPERATURE MIXING VALVE.
L 4	LAVATORY	1	1 1/2"	2"	1-1/2"	1/2"	1/2"	---	ACORN "OR APPROVED EQUAL", 3701-1, "MERIDIAN" TYPE 304 STAINLESS STEEL WITH SATIN FINISH, MOUNT AT 34" RIM HEIGHT ABOVE FINISHED FLOOR, SELF-RIMMING ROUND BASIN, PUSH BUTTON METERING VALVE, 1-1/2" P-TRAP.
SH 1	SHOWER	2	2"	2"	1-1/2"	1/2"	1/2"	---	AMERICAN STANDARD "OR APPROVED EQUAL", 0954.000 MURRO UNIVERSAL DESIGN WALL HUNG LAVATORY OF VITREOUS CHINA, WITH REAR OVERFLOW, CENTER DISTANCE 4" WITH 0059.020 VITREOUS CHINA SHROUD/KNEE CONTACT GUARD AND ADA COMPLIANT. MOEN FAUCETS "OR APPROVED EQUAL" CAL84500 METAL CONSTRUCTION CHROME FINISH, PIVOT ACTION LEVER STYLE HANDLE AND ADA COMPLIANT.
SH 2	SHOWER	10	2"	2"	1-1/2"	1/2"	1/2"	---	ACORN "OR APPROVED EQUAL", 418B-ADA-W SHOWER WARE, 18 GAUGE TYPE 304 STAINLESS STEEL SATIN FINISH, PRESSURE BALANCE VALVE, FIXED SHOWER HEAD AND A QUICK DISCONNECT HAND SHOWER WITH VACUUM BREAKER AND FLOW CONTROL.
U 1	URINAL	8	1 1/2"	2"	1-1/2"	1/2"	---	---	MOEN "OR APPROVED EQUAL", 6320 SERIES, FIXED MOUNT SHOWER HEAD, METAL SPRAY FACE AND SHELL, SELF PRESSURIZING DESIGN WITH RAIN AND RINSE OPERATE LEVER. MOEN "OR APPROVED OTHER" 8320 SINGLE HANDLE PRESSURE REDUCING VALVE, CHROME PLATED METAL CONSTRUCTION, 1/2" CC CONNECTIONS, VANDAL RESISTANT SCREWS WITH ADJUSTABLE TEMPERATURE LIMIT STOP TO LIMIT THE HANDLE TRAVEL IN THE HOT DIRECTION.
U 2	URINAL	13	1 1/2"	2"	1-1/2"	1/2"	---	---	KOHLER "OR APPROVED EQUAL", DEXTER K-5016-ET VITREOUS CHINA, 0.5 GPF, SIPHON JET FLUSH, 3/4" TOP SPUD, ADA COMPLIANT. SLOAN "OR APPROVED EQUAL", ROYAL 186-0.5, EXPOSED URINAL FLUSHOMETER, FOR 3/4" TOP SPUD.
SS 1	SERVICE SINK	7	2"	2"	1-1/2"	1/2"	1/2"	---	KOHLER "OR APPROVED EQUAL", DEXTER K-5016-ET VITREOUS CHINA, 0.5 GPF, SIPHON JET FLUSH, 3/4" TOP SPUD. SLOAN "OR APPROVED EQUAL", ROYAL 186-0.5, EXPOSED URINAL FLUSHOMETER, FOR 3/4" TOP SPUD.
DF 1	DRINKING FOUNTAIN	8	2"	2"	1-1/2"	1/2"	---	---	ELKAY "OR APPROVED EQUAL", EFS2523C, STAINLESS STEEL FLOOR MODEL, 16 GAUGE, CHROME PLATED BRASS BODY DRAIN OUTLET FITTING. FIELD ADJUSTABLE STAINLESS STEEL FLAT GRID STRAINER. CHICAGO FAUCETS, 897-CP, POLISHED CHROME PLATED BRASS, WITH 3/4" THREAD OUTLET, VACUUM BREAKER, 2-3/8" METAL HANDLES.
WHA 1	WATER HAMMER ARRESTOR	20	---	---	---	1/2"	---	---	ELKAY EZH2O SYSTEM "OR APPROVED EQUAL", LZS8WSLK, COMPLETE FILTERED COOLER AND BOTTLE FILLING STATION, SENSOR ACTIVATION WITH AUTOMATIC 30 SECOND SHUT OFF TIME, SILVER ION ANTI MICROBIAL PROTECTION, FILTER MONITOR, VANDAL RESISTANT STREAMSAVER BUBBLER.
FD 1	FLOOR DRAIN	19	2"	2"	1-1/2"	1/2"	---	---	ZURN "OR APPROVED EQUAL", Z-1700 SHOKTROLS # 100, NESTING TYPE BELLOWS CONTAINED WITHIN CASING ENOUGH TO DISSIPATE THE KINETIC ENERGY IN THE PIPE SYSTEM, CASING AND BELLOWS CONSTRUCTED OF TYPE 304 STAINLESS STEEL.
									ZURN "OR APPROVED EQUAL", ZN415-B TOP, WITH TRAP PRIMER CONNECTION, DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, TYPE "B" POLISHED NICKEL BRONZE STRAINER

ABBREVIATION/SYMBOLS

SYMBOL	ABBREV.	DESCRIPTION
---	CW	DOMESTIC COLD WATER
---	HW	DOMESTIC HOT WATER
---	RHW	RHW - RECIRCULATING HOT WATER
SS	S	SANITARY SEWER
V	V	SANITARY VENT
FCO	FCO	FLOOR CLEAN-OUT OR COG
WCO	WCO	WALL CLEAN-OUT
FD	FD	FLOOR DRAIN
Cap		CAP
Drop		DROP
Rise		RISE
Valve in Rise		VALVE IN RISE
Check Valve		CHECK VALVE
WC	WC	WATER CLOSET
LAV	LAV	LAVATORY
U	U	URINAL
SS	SS	SERVICE SINK
DF	DF	DRINKING FOUNTAIN
WHA	WHA	WATER HAMMER ARRESTOR
(E)	(E)	EXISTING
VTR	VTR	VENT THRU ROOF
TP	TP	TRAP PRIMER
SOV	SOV	SHUT OFF VALVE
OAE	OAE	OR APPROVED EQUAL
COG	COG	CLEAN OUT TO GRADE OR FCO
DF	DF	DRINKING FOUNTAIN
CPC	CPC	CALIFORNIA PLUMBING CODE
A/C	A/C	ABOVE CEILING
B/F	B/F	BELOW FLOOR
GPM	GPM	GALLONS PER MINUTE

GENERAL NOTES

- NO PLUMBING SHALL BE INSTALLED UNTIL ALL REQUIRED PLUMBING PLAN CHECK PERMITS AND APPROVALS HAVE BEEN OBTAINED FROM ALL REQUIRED AGENCIES.
- CONTRACTOR SHALL COORDINATE WITH THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF PLUMBING FIXTURES AND ACCESSIBILITY REQUIREMENTS.
- CONTRACTOR SHALL FURNISH AND INSTALL MANUFACTURED WATER HAMMER ARRESTORS AT QUICK CLOSING VALVES, OUTLETS AND DEVICES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF WALLS AND FLOORS, INCLUDING ALL SAW CUTTING AND CORE DRILLING.
- COORDINATE INSTALLATION OF ALL EQUIPMENT AND PIPING WITH OTHER TRADES PRIOR TO INSTALLATION. ENSURE THAT ALL CONTROL DEVICES, SHUTOFF VALVES, ETC. ARE ACCESSIBLE FOR MAINTENANCE, WHERE ACCESS PANELS IN FINISHED SPACES, OTHER THAN THAT SHOWN, CONTRACTOR SHALL COORDINATE EXACT LOCATION OF PANELS WITH ARCHITECT PRIOR TO INSTALLATION.
- ALL PIPES AND CONDUITS SHALL BE SUPPORTED AND BRACED PER SMACNA GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS. ALL PLUMBING EQUIPMENT SHALL COMPLY WITH TITLE 24 REQUIREMENTS.
- DRAIN AND WASTE PIPES SHALL SLOPE PER CALIFORNIA PLUMBING CODE.
- PUBLIC FAUCETS TO BE SELF CLOSING.
- WATER CLOSETS TO BE ULTRA LOW FLUSH TYPE.
- INSULATION MATERIAL SHALL MEET THE CALIFORNIA QUALITY STANDARDS PER SECTION 118 ENERGY EFFICIENCY STANDARDS (E.E.S.)
- FAUCETS TO BE 2.2 GPM MAX.
- "LAVATORY FAUCETS IN RESTROOM SHALL BE THE SELF CLOSING TYPE." L/1&L/3 SHALL BE SELF CLOSING TOO.
- EACH SHOWERHEAD SHALL NOT EXCEED A WATER FLOW OF 2.5 GPM.

EQUIPMENT SCHEDULE

ITEM NO.	DESCRIPTION	MAKE/MODEL NO.	FLUID QUANTITY GPM	HEAD (FEET)	MOTOR H.P.	RPM	REMARKS	DESCRIPTION
P1	SANITARY SEWAGE EJECTOR PUMP	HYDROMATIC SLV.30.A30.55	74 EACH PUMP	45	5.5	1750	①	PROVIDE NEW DUPLEX PUMP SYSTEM AND LIFT EYELETS ON EACH PUMP, CONTROL PANEL AND ALARM SYSTEM.

REMARKS:
① FOR P1 PROVIDE NEW CONTROL PANEL

CONSTRUCTION CHANGE / ADDENDUM

CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

Teza Design
Consulting & Mechanical Engineering
281 A Street, Suite 402, San Diego, CA 92101
Phone: 619-299-6200 Fax: 619-299-7700



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
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APPROVED BY:
FOR CITY ENGINEER
CHECKED BY:
CONSTRUCTION ENGINEER
INSPECTOR

FUNDING CIP/SAP: _____ SPEC. NO. _____

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES

ABB, LEGEND, SYMBOLS, GEN. NOTES

CITY OF SAN DIEGO, CALIFORNIA
SHEET 24 OF 66 SHEETS

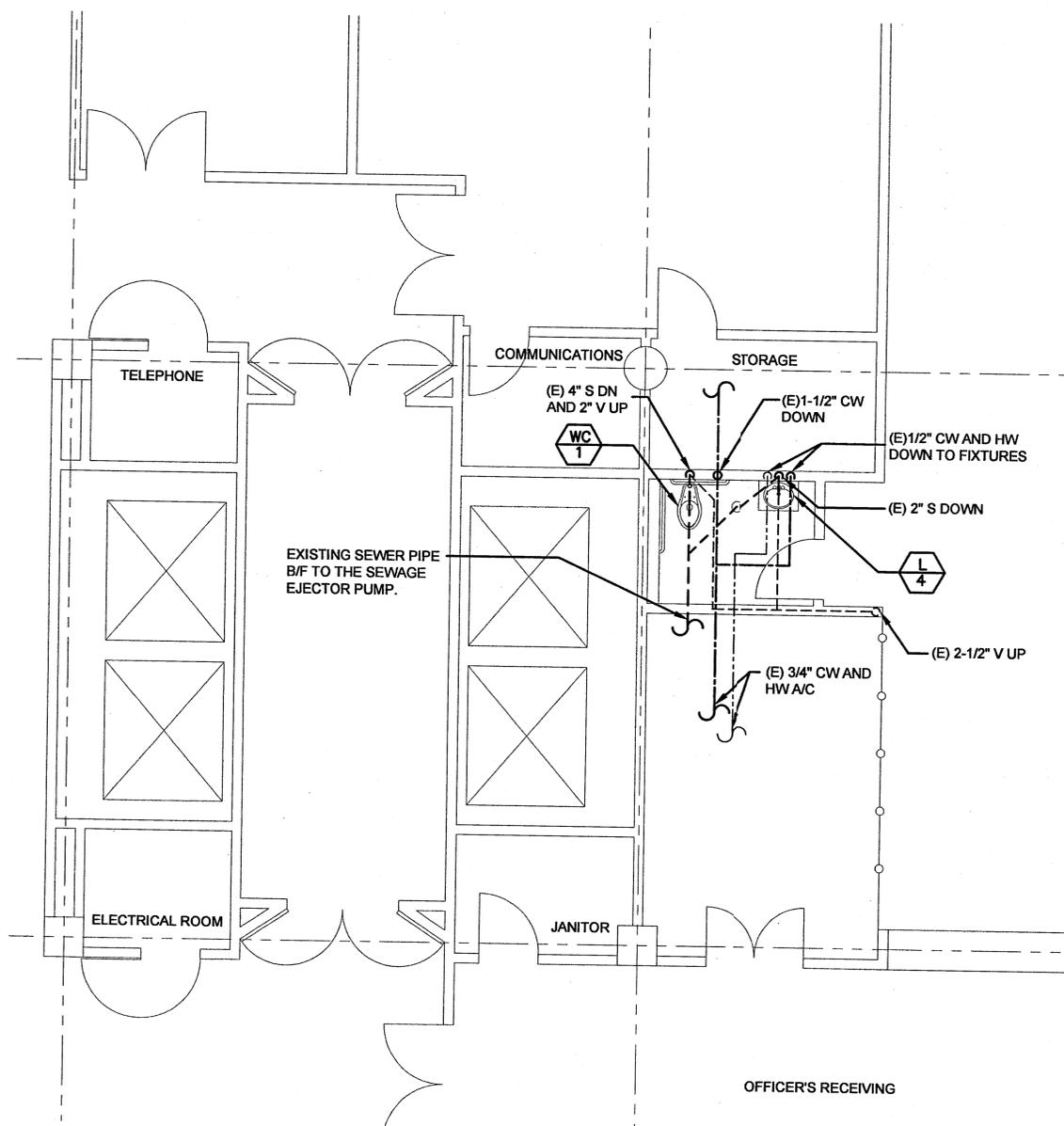
W.B.S. B-00952, B-10008
B-10010

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DSD BACKCHECK	MOA	xx/xx/2011		

CONTRACTOR: _____ DATE STARTED: _____
INSPECTOR: _____ DATE COMPLETED: _____

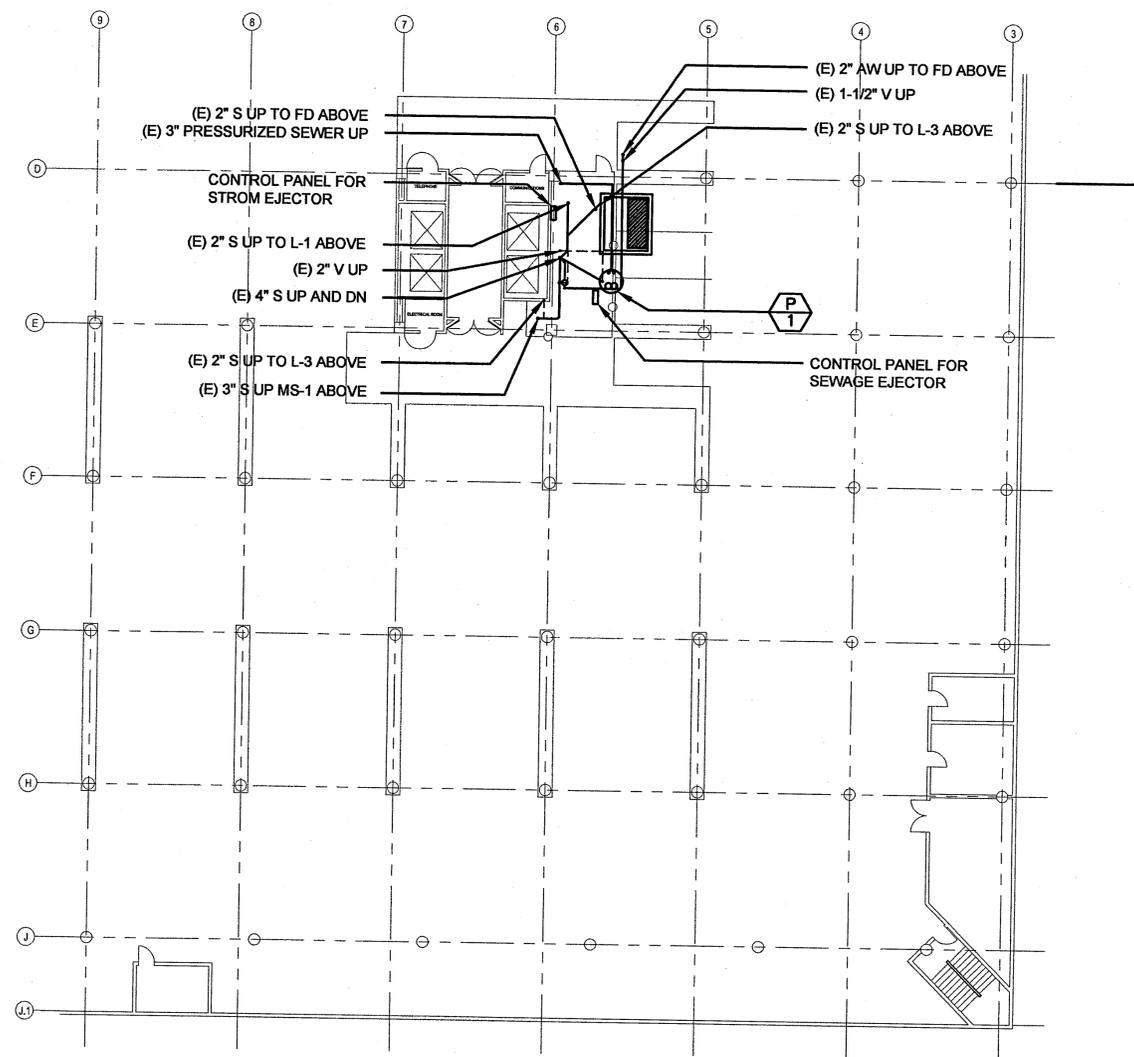
SECTION HEAD: _____
PROJECT MANAGER: _____
CCS27 COORDINATE: _____
CCS83 COORDINATE: _____

36392-24-D



PARKING 1 RESTROOM ENLARGED PLUMBING PLAN

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



PARTIAL PLUMBING PARKING 2 PLAN

SCALE: 1/16" = 1'-0"

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

Teza Design
Consulting & Mechanical Engineering
 277 A Street Suite 103 San Diego, CA 92101
 Phone: (619) 594-6287 Fax: (619) 594-7792

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



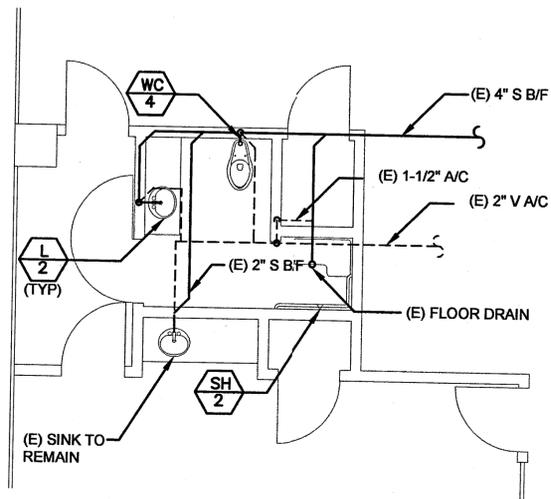
CITY OF SAN DIEGO
 PUBLIC WORKS PROJECT



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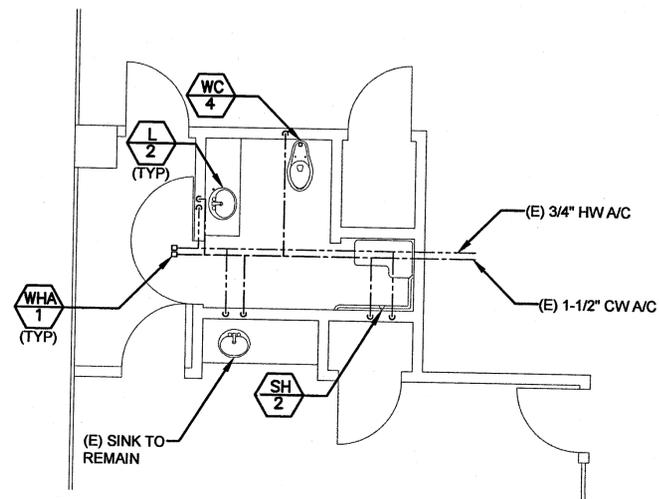
APPROVED BY: [Signature]
 FOR CITY ENGINEER
 CHECKED BY: [Signature]
 CONSTRUCTION ENGINEER
 CHECKED BY: [Signature]
 INSPECTOR

FUNDING CIP/SAP	SPEC. NO.	P-2
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
ENLARGED PARKING 1 AND PARTIAL PARKING 2 PLANS		
CITY OF SAN DIEGO, CALIFORNIA SHEET 25 OF 66 SHEETS		W.B.S. B-00952, B-10008 B-10010
DATE: 2/28/12	DATE: 2/28/12	SECTION HEAD: [Signature]
DESCRIPTION: DSD BACKCHECK MOA	APPROVED: [Signature]	PROJECT MANAGER: [Signature]
DATE: 2/28/2011	DATE: 2/28/2011	CCS27 COORDINATE
AS-BUILTS	DATE STARTED	CCS83 COORDINATE
CONTRACTOR	DATE COMPLETED	36392-25-D
INSPECTOR		



**CHIEF'S RESTROOM ENLARGED PLUMBING PLAN (LEVEL 7)
(WASTE AND VENT)**

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



**CHIEF'S RESTROOM ENLARGED PLUMBING PLAN (LEVEL 7)
(COLD WATER AND HOT WATER)**

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

FUNDING CIP/SAP		SPEC. NO.		P-3	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES					
CHIEF'S RESTROOM ENLARGED PLUMBING PLAN					
CITY OF SAN DIEGO, CALIFORNIA SHEET 26 OF 66 SHEETS				W.B.S. B-00952, B-10008 B-10010	
APPROVED BY: <i>[Signature]</i>		DATE: 3/9/12		SECTION HEAD	
FOR CITY ENGINEER		BY: DSD BACKCHECK MOA		PROJECT MANAGER	
CHECKED BY:		APPROVED: xx/xx/2011		DATE FILMED:	
CONSTRUCTION ENGINEER		CHECKED BY:		CCS27 COORDINATE	
INSPECTOR:		AS-BUILTS:		CCS83 COORDINATE	
CONTRACTOR:		DATE STARTED:		36392-26-D	
INSPECTOR:		DATE COMPLETED:			

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT			
 Teza Design <small>Consulting In Mechanical Engineering</small> 225 A Street, Suite 101, San Diego, CA 92101 Phone: (619) 592-6200 Fax: (619) 592-2700			
SCALE	HORIZONTAL	NO SCALE	
	VERTICAL	NO SCALE	

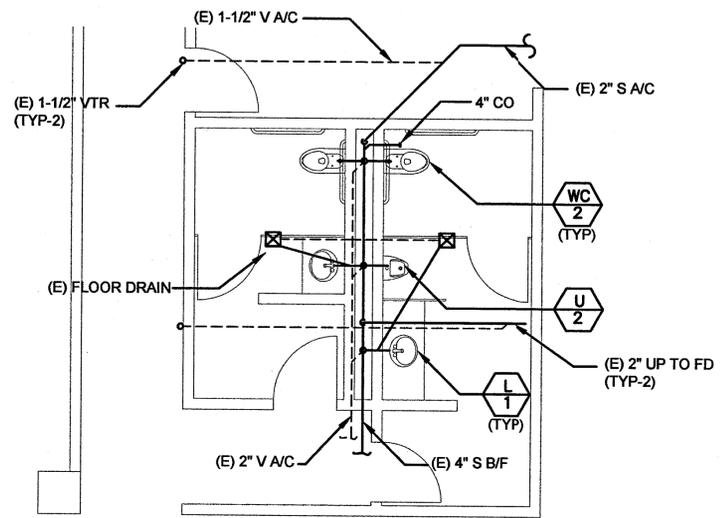


CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



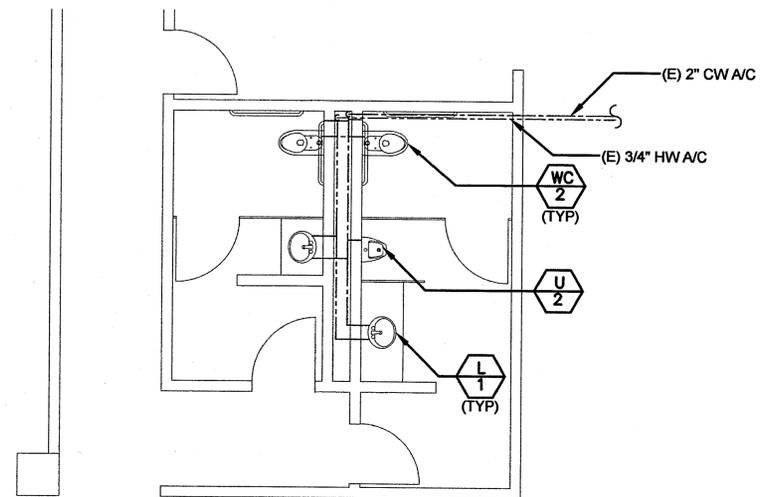
WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:	DATE:
CHECKED BY:	DATE:
CHECKED BY:	DATE:
CHECKED BY:	DATE:



**COMMANDER'S RESTROOM ENLARGED PLUMBING PLAN (LEVEL 7)
(WASTE AND VENT)**

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



**COMMANDER'S RESTROOM ENLARGED PLUMBING PLAN (LEVEL 7)
(COLD WATER AND HOT WATER)**

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

P-4

FUNDING CIP/SAP	SPEC. NO.
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES	
COMMANDER'S RR ENLARGED PLUMBING PLAN	
CITY OF SAN DIEGO, CALIFORNIA SHEET 27 OF 66 SHEETS	W.B.S. B-00952, B-10008 B-10010
APPROVED BY: <i>[Signature]</i> FOR CITY ENGINEER	DATE: 3/9/12
SECTION HEAD	
DESCRIPTION / BY	APPROVED DATE FILMED
DSD BACKCHECK MOA	xx/xx/2011
CHECKED BY:	PROJECT MANAGER
CONSTRUCTION ENGINEER	
CHECKED BY:	CCS27 COORDINATE
INSPECTOR	
AS-BUILTS	CCS83 COORDINATE
CONTRACTOR	DATE STARTED
INSPECTOR	DATE COMPLETED
	36392-27-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

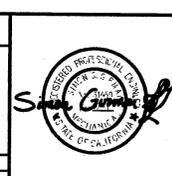
CONSULTANT



Teza Design
Consulting in Mechanical Engineering
233 A Street, Suite 103, San Diego, CA 92101
Phone: (619) 595-0691 Fax: (619) 595-0726

SCALE

HORIZONTAL	NO SCALE
VERTICAL	NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT

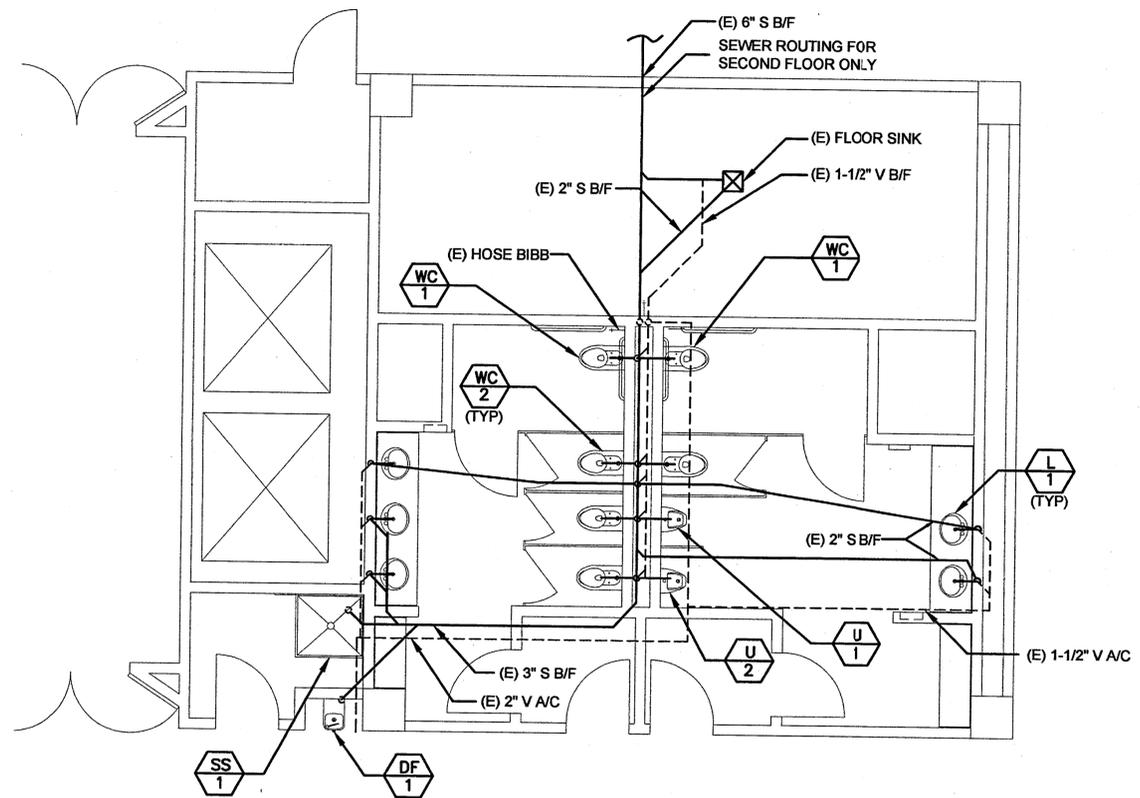


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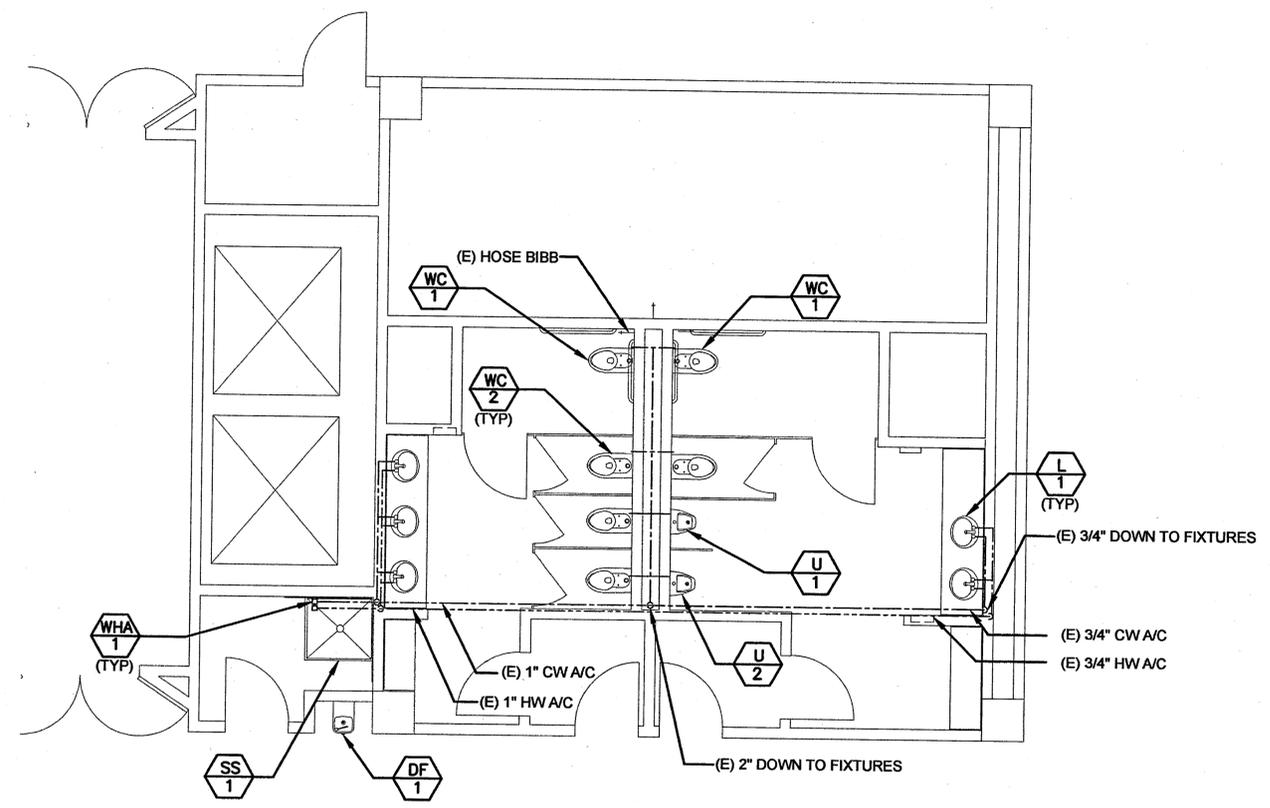
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APPROVED BY:	
FOR CITY ENGINEER	
CHECKED BY:	
CONSTRUCTION ENGINEER	
CHECKED BY:	
INSPECTOR	



**TYPICAL CORE RESTROOM ENLARGED PLUMBING PLAN
(WASTE AND VENT PLAN) FLOORS - 2,5,6,7**

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



**TYPICAL CORE RESTROOM ENLARGED PLUMBING PLAN
(COLD WATER AND HOT WATER) FLOORS- 2,5,6,7**

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

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

Teza Design
Consulting & Mechanical Engineering
231 A Street, Suite 102, San Diego, CA 92101
Phone: (619) 444-6276 - Fax: (619) 229-7700

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



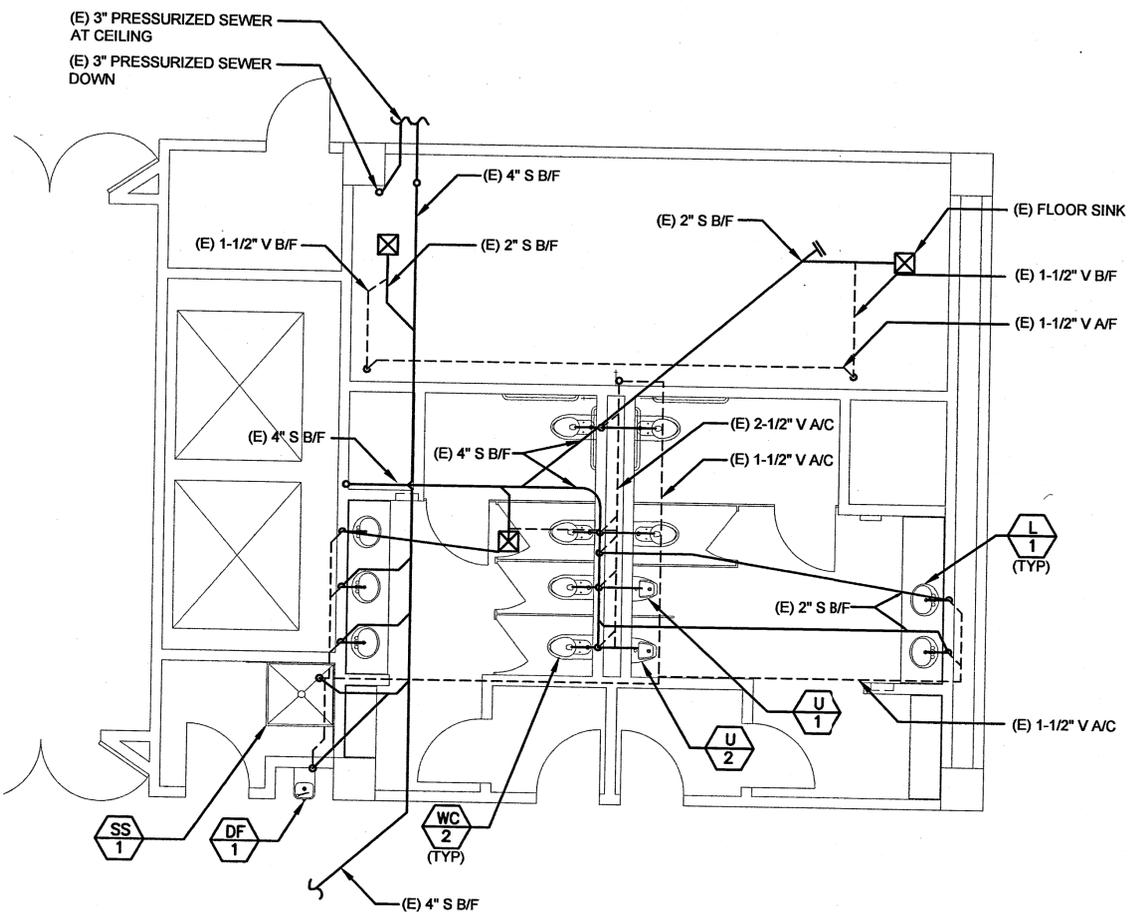
CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



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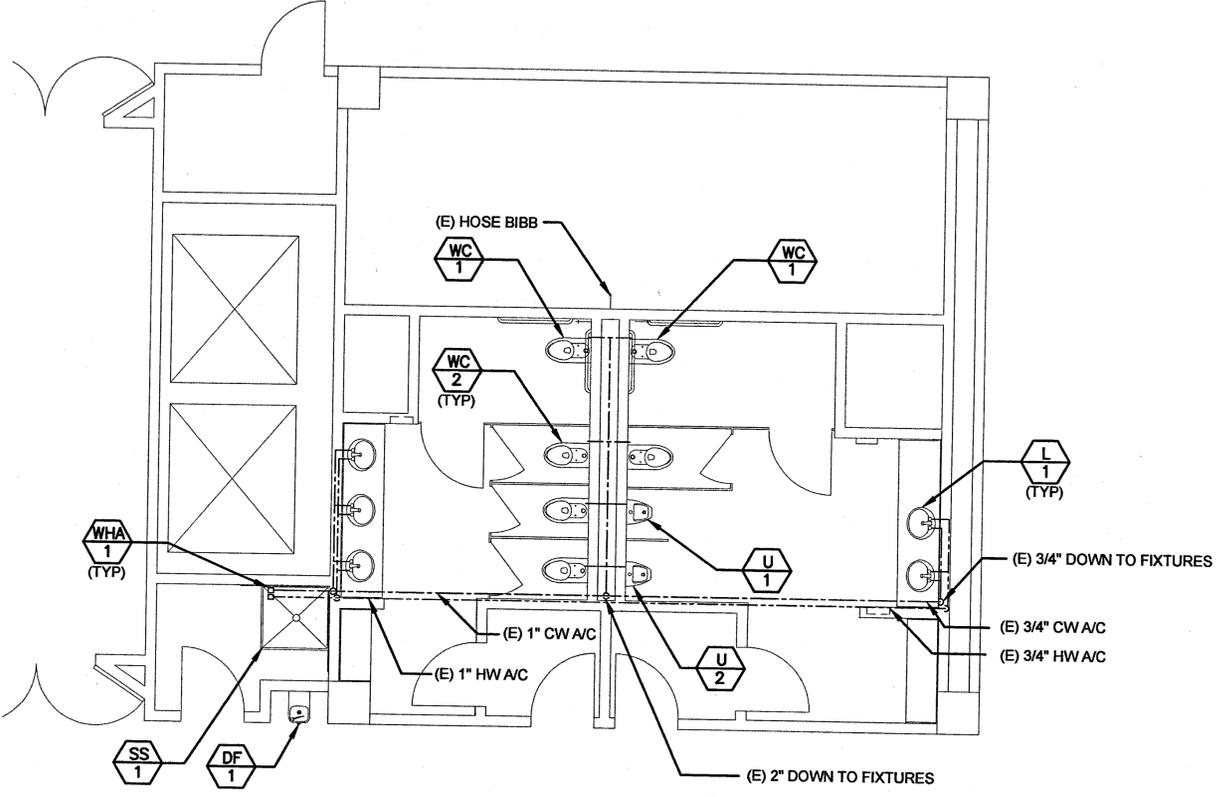
APPROVED BY: FOR CITY ENGINEER
CHECKED BY: CONSTRUCTION ENGINEER
INSPECTOR

FUNDING CIP/SAP	SPEC. NO.	P-5
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
ENLARGED CORE RESTROOM PLUMBING PLAN		
CITY OF SAN DIEGO, CALIFORNIA SHEET 28 OF 66 SHEETS		W.B.S. B-00952, B-10008 B-10010
APPROVED BY: <i>[Signature]</i>	DATE: 3/2/12	SECTION HEAD
FOR CITY ENGINEER	DESCRIPTION: DSD BACKCHECK MOA	PROJECT MANAGER
CHECKED BY:	APPROVED: xx/xx/2011	CCS27 COORDINATE
CONSTRUCTION ENGINEER		CCS83 COORDINATE
CHECKED BY:	AS-BUILTS	
INSPECTOR	CONTRACTOR	DATE STARTED
	INSPECTOR	DATE COMPLETED
		36392-28-D



**FIRST FLOOR CORE RESTROOM ENLARGED PLUMBING PLAN
(WASTE AND VENT)**

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



**FIRST FLOOR CORE RESTROOM ENLARGED PLUMBING PLAN
(COLD WATER AND HOT WATER)**

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

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

Teza Design
Consulting in Mechanical Engineering
223 A Street, Suite 100, San Diego, CA 92101
Phone: (619) 594-6839 • Fax: (619) 594-7792

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



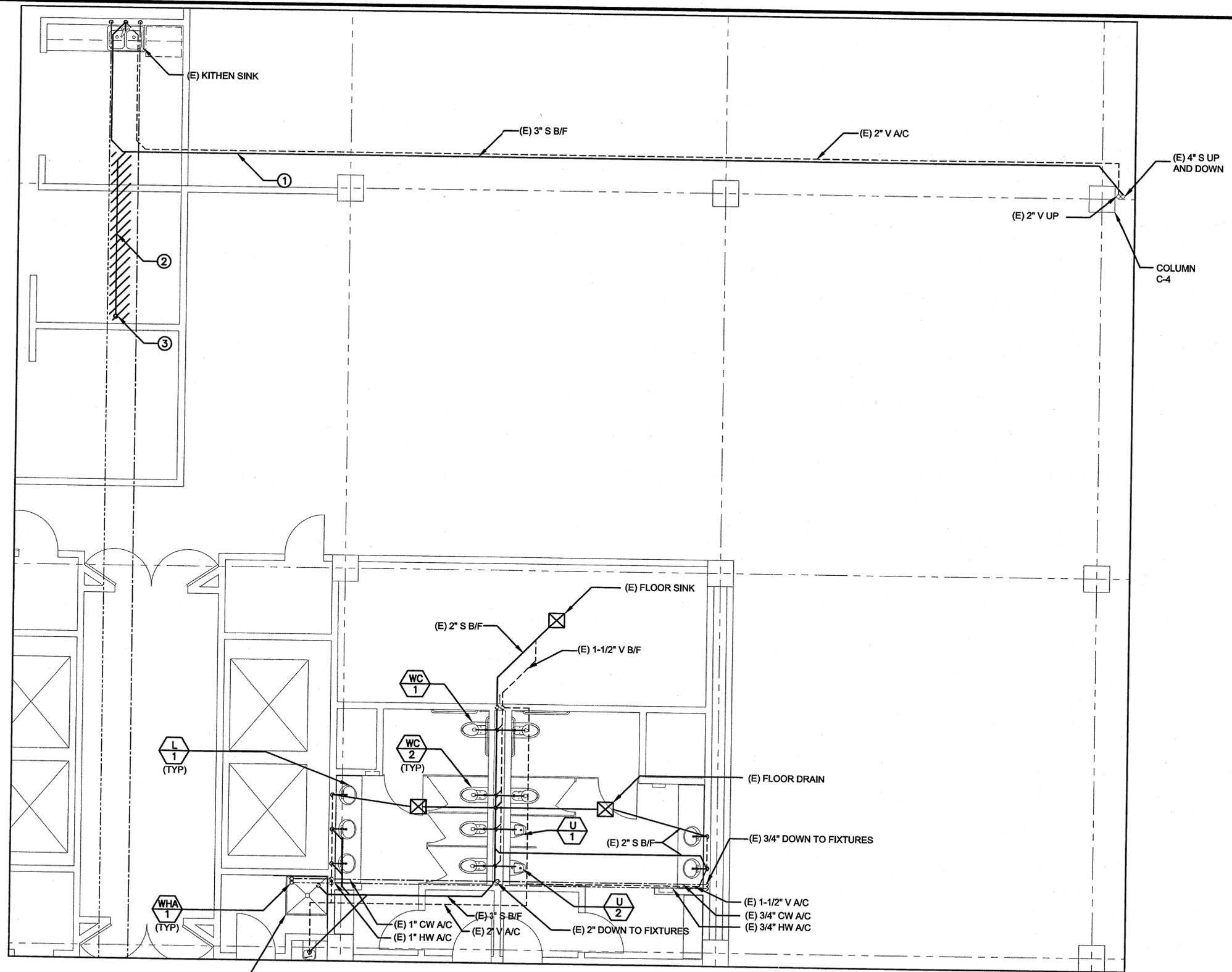
CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:
FOR CITY ENGINEER
CHECKED BY:
CONSTRUCTION ENGINEER
CHECKED BY:
INSPECTOR

FUNDING CIP/SAP	SPEC. NO.	P-6
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
ENLARGED 1ST FLOOR CORE RR PLUMBING PLAN		
CITY OF SAN DIEGO, CALIFORNIA SHEET 29 OF 66 SHEETS		W.B.S. B-00852, B-10008 B-10010
FOR CITY ENGINEER	DATE	SECTION HEAD
DESCRIPTION	BY	PROJECT MANAGER
DSD BACKCHECK	MOA	xx/xx/2011
AS-BUILTS		CCS27 COORDINATE
		CCS83 COORDINATE
CONTRACTOR	DATE STARTED	36392-29-D
INSPECTOR	DATE COMPLETED	



- KEY NOTES**
- 1 REMOVE EXISTING 2" ABS PIPING UP TO THE CAST IRON PIPING CONNECTION POINT LOCATED ABOVE CEILING OF THIRD FLOOR. INSTALL NEW 3" CAST IRON PIPING UP TO THE EXISTING VERTICAL RISER AT COLUMN C-4. PROVIDE SUPPORT STRAP AND HANGERS AT EVERY CHANGE OF DIRECTION AND EVERY 5'-0" SPAN. ENSURE A MINIMUM OF 1/4" PER FOOT SLOPE THAT IS CONTINUOUS UP TO THE VERTICAL PIPE RISER.
 - 2 REMOVE EXISTING 2" ABS PIPING THAT USED TO SERVE A FLOOR SINK ABOVE.
 - 3 CAP EXISTING 2" ABS PIPING BELOW FLOOR AND ABANDON IN PLACE THE FLOOR SINK ABOVE.

**FOURTH FLOOR KITCHEN AND CORE RESTROOM
ENLARGED PLUMBING PLAN**

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

FUNDING CIP/SAP	SPEC. NO.	P-8
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
ENLARGED FOURTH FLOOR PLUMBING PLAN		
CITY OF SAN DIEGO, CALIFORNIA SHEET 31 OF 66 SHEETS		W.B.S. B-00952, B-10008 B-10010
APPROVED BY:	DATE: 3/8/12	SECTION HEAD
FOR CITY ENGINEER		PROJECT MANAGER
CHECKED BY:		CCS27 COORDINATE
CONSTRUCTION ENGINEER		CCS83 COORDINATE
CHECKED BY:		
INSPECTOR		
AS-BUILTS		
CONTRACTOR	DATE STARTED	36392-31-D
INSPECTOR	DATE COMPLETED	

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

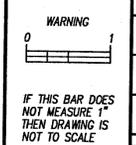
CONSULTANT

Teza Design
Consulting & Mechanical Engineering
281 A Street, Suite 302, San Diego, CA 92101
Phone: (619) 592-6291 • Fax: (619) 592-7292

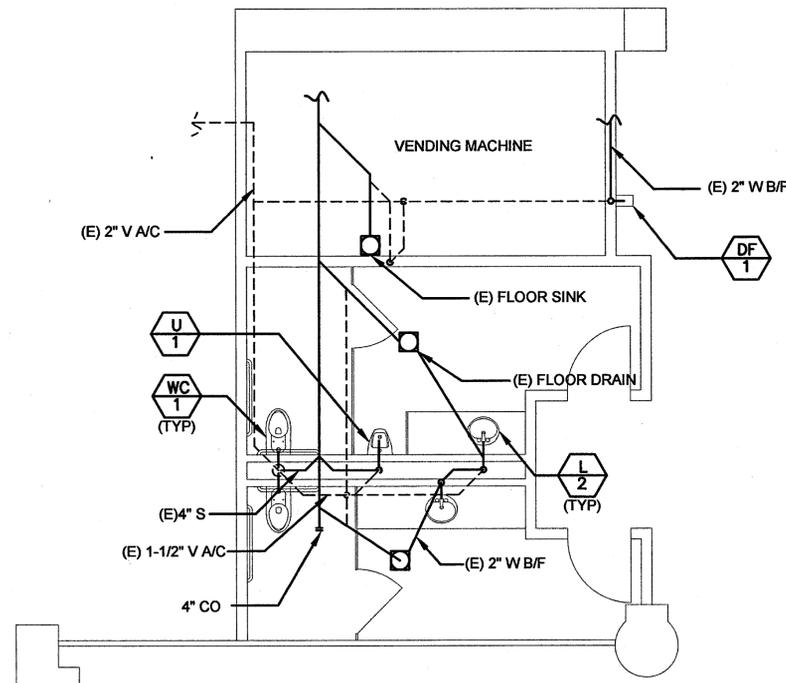
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CITY OF SAN DIEGO
PUBLIC WORKS PROJECT

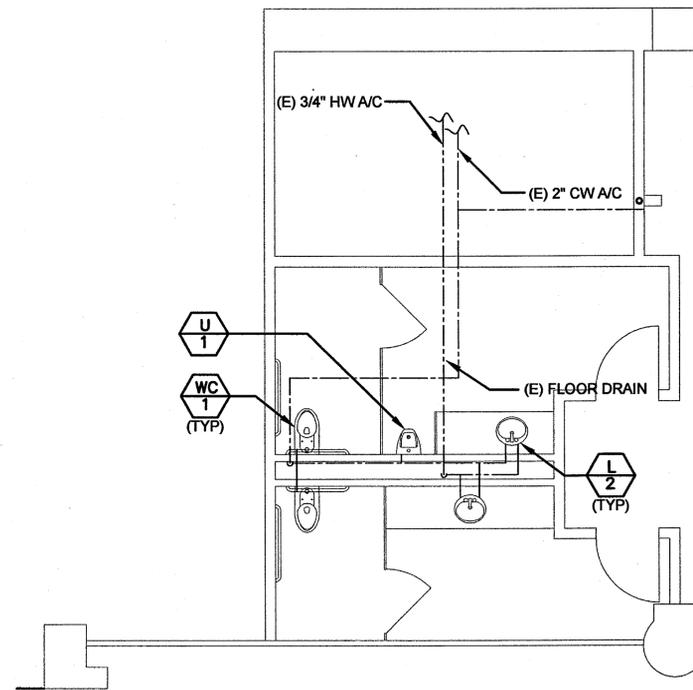


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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



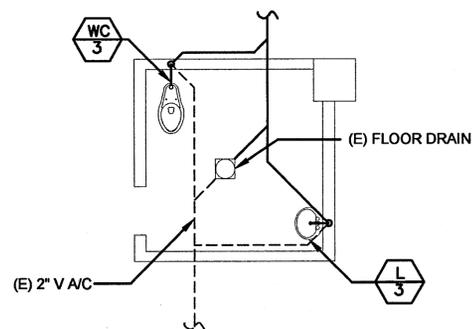
**FIRST FLOOR PUBLIC RESTROOM ENLARGED
PLUMBING PLAN (WASTE AND VENT)**

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



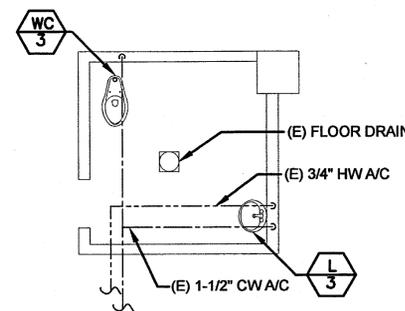
**FIRST FLOOR PUBLIC RESTROOM ENLARGED
PLUMBING PLAN (COLD WATER AND HOT WATER)**

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



**FIRST FLOOR WATCH COMMANDER'S RESTROOM ENLARGED
PLUMBING PLAN (WASTE AND VENT)**

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



**FIRST FLOOR WATCH COMMANDER'S RESTROOM ENLARGED
PLUMBING PLAN (COLD WATER AND HOT WATER)**

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

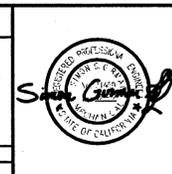
FUNDING CIP/SAP		SPEC. NO.		P-9	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES					
ENLARGED PARTIAL 1ST FLOOR RR PLUMBING PLAN					
CITY OF SAN DIEGO, CALIFORNIA SHEET 32 OF 66 SHEETS				W.B.S. B-00952, B-10008 B-10010	
APPROVED BY: FOR CITY ENGINEER		DATE 3/9/12		SECTION HEAD	
CHECKED BY: CONSTRUCTION ENGINEER		APPROVED		PROJECT MANAGER	
CHECKED BY: INSPECTOR		DATE xx/xx/2011		CCS27 COORDINATE	
AS-BUILTS		DATE STARTED		CCS83 COORDINATE	
CONTRACTOR		DATE COMPLETED		36392-32-D	

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

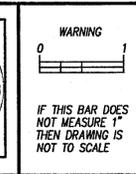
CONSULTANT

Teza Design
Consulting in Mechanical Engineering
227 A Street, Suite 401, San Diego, CA 92101
Phone: (619) 594-6426 Fax: (619) 205-2729

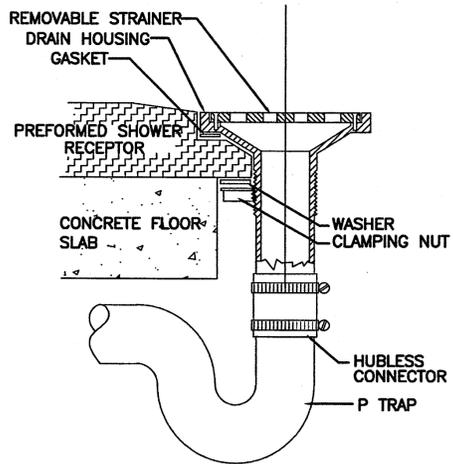
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VERTICAL NO SCALE



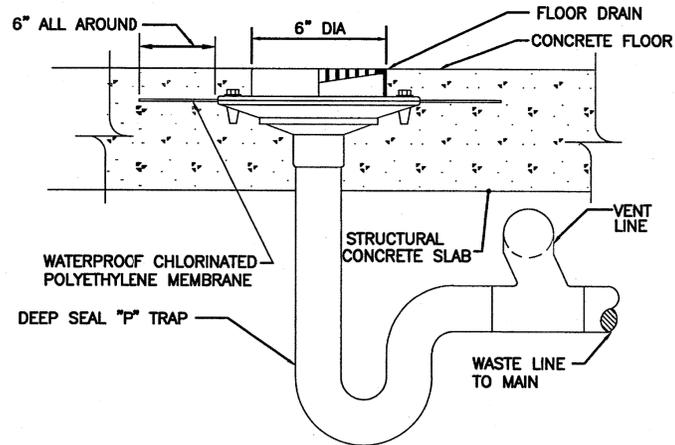
CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



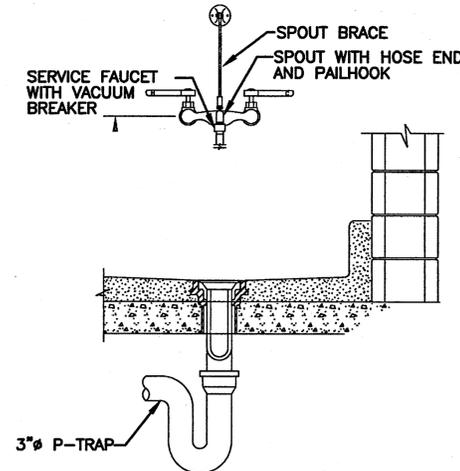
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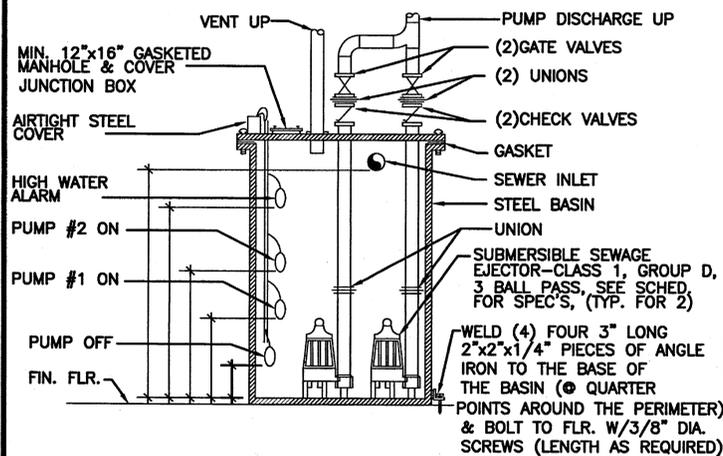
A SHOWER DRAIN DETAIL
NOT TO SCALE



B VENT TO FLOOR DRAIN CONNECTION DETAIL
NOT TO SCALE



C MOP SINK DETAIL
NOT TO SCALE



D DUPLEX SEWAGE EJECTOR DETAIL
NOT TO SCALE

FUNDING CIP/SAP	SPEC. NO.
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES	
DETAILS	
CITY OF SAN DIEGO, CALIFORNIA SHEET 33 OF 66 SHEETS	W.B.S. B-00952, B-10008 B-10010
APPROVED BY: <i>[Signature]</i> DATE: 3/9/12	SECTION HEAD: <i>[Signature]</i>
FOR CITY ENGINEER	PROJECT MANAGER
DESCRIPTION BY APPROVED DATE FILMED	
DSD BACKCHECK MDA xx/xx/2011	
CONSTRUCTION ENGINEER CHECKED BY:	CCS27 COORDINATE
INSPECTOR	CCS83 COORDINATE
AS-BUILTS	
CONTRACTOR DATE STARTED	36392-33-D
INSPECTOR DATE COMPLETED	

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

EZA Teza Design
Consulting & Mechanical Engineering
201 A Street, Suite 102, San Diego, CA 92101
Phone: (619) 595-0211 Fax: (619) 259-7201

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT

WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY: *[Signature]*

FOR CITY ENGINEER

CONSTRUCTION ENGINEER CHECKED BY:

INSPECTOR

POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES

INDOOR UNIT INFORMATION

MARK	SELECTED MODEL		NOMINAL CAPACITY		ROOM CAPACITY			COOLING MODE			HEATING MODE		ELECTRICAL					WEIGHT (LBS)	REMARKS
								DRY BULB TEMPERATURE	RELATIVE HUMIDITY	WET BULB TEMPERATURE	DRY BULB TEMPERATURE	VOLTAGE (V)	PHASE	FREQUENCY (HZ)	MCA (A)	FLA (A)			
	REFERENCE	MODEL NAME	COOLING (TOTAL)	HEATING	COOLING (TOTAL)	COOLING (SENSIBLE)	HEATING	DRY BULB TEMPERATURE	RELATIVE HUMIDITY	WET BULB TEMPERATURE	DRY BULB TEMPERATURE	VOLTAGE (V)	PHASE	FREQUENCY (HZ)	MCA (A)	FLA (A)			
FC 1	7TH FLOOR TELECOMM	PMFY-P06NBMU-E	6000	-	5859	5399	-	80.6	47	66.2	-	208/230	1	60	0.25	0.20	40	①②③④⑤	
FC 2	6TH FLOOR TELECOMM	PMFY-P06NBMU-E	6000	-	5859	5399	-	80.6	47	66.2	-	208/230	1	60	0.25	0.20	40	①②③④⑤	
FC 3	5TH FLOOR TELECOMM	PMFY-P06NBMU-E	6000	-	5859	5399	-	80.6	47	66.2	-	208/230	1	60	0.25	0.20	40	①②③④⑤	
FC 4	4TH FLOOR TELECOMM	PKFY-P06NBMU-E	6000	-	5859	4475	-	80.6	47	66.2	-	208/230	1	60	0.19	0.15	22	①②③④⑤	
FC 5	3TH FLOOR TELECOMM	PMFY-P06NBMU-E	6000	-	5859	5399	-	80.6	47	66.2	-	208/230	1	60	0.25	0.20	40	①②③④⑤	
FC 6	2TH FLOOR TELECOMM	PMFY-P06NBMU-E	6000	-	5859	5399	-	80.6	47	66.2	-	208/230	1	60	0.25	0.20	40	①②③④⑤	
FC 7	1TH FLOOR TELECOMM	PMFY-P06NBMU-E	6000	-	5859	5399	-	80.6	47	66.2	-	208/230	1	60	0.25	0.20	40	①②③④⑤	
FC 8	PARKING 1 ELECTRICAL	PMFY-P06NBMU-E	6000	-	5859	5399	-	80.6	47	66.2	-	208/230	1	60	0.25	0.20	40	①②③④⑤	
FC 9	3TH FLOOR ELECTRICAL	PCFY-P24NKMU-E	24000	-	23435	16327	-	80.6	47	66.2	-	208/230	1	60	0.52	0.41	71	①②③④⑤	
FC 10	4TH FLOOR ELECTRICAL	PMFY-P06NBMU-E	6000	-	5859	5399	-	80.6	47	66.2	-	208/230	1	60	0.25	0.20	40	①②③④⑤	
FC 11	5TH FLOOR ELECTRICAL	PKFY-P18NHMU-E	18000	-	17577	12505	-	80.6	47	66.2	-	208/230	1	60	0.38	0.30	30	①②③④⑤	
FC 12	6TH FLOOR ELECTRICAL	PCFY-P30NKMU-E	30000	-	29294	21815	-	80.6	47	66.2	-	208/230	1	60	1.22	0.97	79	①②③④⑤	

OUTDOOR UNIT INFORMATION

SYSTEM	SELECTED MODEL		NOMINAL CAPACITY		ROOM CAPACITY		DESIGN CONDITION					WEIGHT (LBS)	REMARKS			
							COOLING MODE		HEATING MODE					ELECTRICAL		
	REFERENCE	MODEL NAME	COOLING	HEATING	COOLING	HEATING	DRY BULB TEMPERATURE	DRY BULB TEMPERATURE	WET BULB TEMPERATURE	VOLTAGE (V)	PHASE			FREQUENCY (HZ)	MCA (A)	MCCP (A)
CU 1	ROOF TOP UNIT	PUHY-P120YJMU-A	120000	-	123036	-	95.0	-	-	460	3	60	23	35	730	①②③④

REMARKS

- ① CONNECT OUTDOOR UNIT AND INDOOR UNIT WITH VAPOR PIPE AND LIQUID PIPE. INSTALL ALL APPURTENANCES PER MANUFACTURERS RECOMMENDATION.
- ② PROVIDE MULTIPLE INDOOR UNITS AND SINGLE OUTDOOR UNIT COOLING ONLY HEAT PUMP SYSTEM WITH AUTOMATIC FAN SPEED CONTROL.
- ③ PROVIDE FAN COIL SUPPORT AND ATTACHMENT PER MANUFACTURER RECOMMENDATION.
- ④ PROVIDE DISCONNECT SWITCH TO BE INSTALLED BY ELECTRICAL.
- ⑤ PROVIDE CONDENSATE DRAIN PIPING.
- ⑥ INSTALL 12" X 7" CONTROL PANEL INSIDE WATCH COMMANDER'S OFFICE, ON THE WALL SHARED WITH THE ELECTRICAL ROOM (INSTALL 48" ABOVE FINISH FLOOR).
- ⑦ CERTIFICATE OF ACCEPTANCE (MECH-2A AND ENV-2A) AND ALL RELATED ACCEPTANCE DOCUMENTS SHALL BE SUBMITTED TO THE FIELD INSPECTOR DURING CONSTRUCTION. CERTIFICATE OF OCCUPANCY WILL NOT BE ISSUED UNTIL THESE FORMS ARE REVIEWED AND APPROVED.
- ⑧ ALL PIPING AND DUCT WORK SHALL BE INSULATED CONSISTENT WITH THE REQUIREMENTS OF SECTIONS 118, 123, 124, TITLE 24 ENERGY STANDARDS. AND TABLE 6-6A AND 6-6B OF CMC.
- ⑨ ALL HVAC SYSTEMS SHALL MEET THE CONTROL REQUIREMENTS PER SECTION 112 AND 122 E.E.S.
- ⑩ ALL HVAC EQUIPMENT AND APPLIANCES SHALL MET THE REQUIREMENTS PER SECTION 111-113, 115, 120-124 TITLE 24 ENERGY STANDARDS.

EQUIPMENT SCHEDULE

ITEM NO.	DESCRIPTION	MAKE/MODEL NO.	FLUID QUANTITY GPM	HEAD (FEET)	MOTOR		REMARKS	DESCRIPTION
					H.P.	RPM		
P 1	CONDENSATE PUMP	SAUERMANN SI3100	2.6 GPH	20	--	--	①	PROVIDE CONDENSATE PUMP WITH A SECURE PUMP SUPPORT.

- REMARKS:
- ① ENSURE THAT THE CONDENSATE PASS THROUGH THE PUMP IN THE RIGHT DIRECTION AS PER MANUFACTURER'S RECOMMENDATION. THE PUMP MUST HAVE AN ELECTRIC SUPPLY THAT IS INDEPENDENT TO THE AIR CONDITIONING UNIT.

M-1

FUNDING CIP/SAP _____ SPEC. NO. _____

**PLANS FOR THE CONSTRUCTION OF
POLICE HEADQUARTERS -
MAIN ENTRY, PLUMBING AND
ELECTRICAL UPGRADES**

ABB, LEGEND, SYMBOLS, GEN. NOTES

CITY OF SAN DIEGO, CALIFORNIA
SHEET 34 OF 66 SHEETS
W.B.S. B-00952, B-10008
B-10010

APPROVED BY: _____	DATE: 3/21/12	SECTION HEAD
FOR CITY ENGINEER		PROJECT MANAGER
CHECKED BY: _____		CCS27 COORDINATE
CONSTRUCTION ENGINEER		CCS83 COORDINATE
CHECKED BY: _____		
INSPECTOR		

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

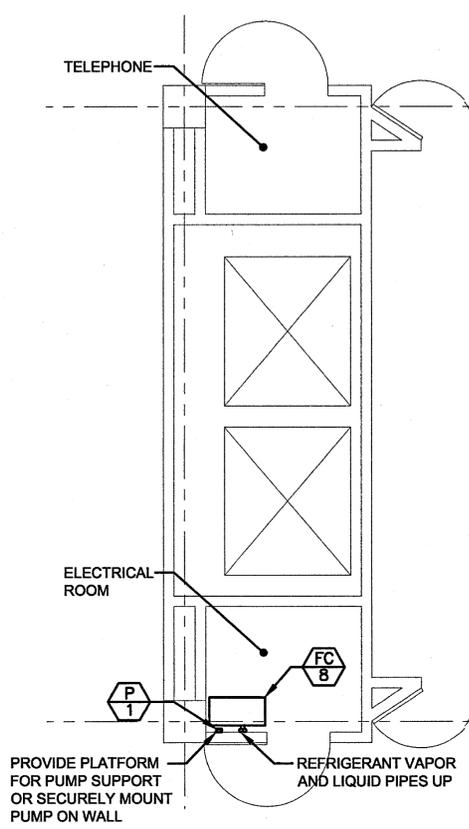
36392-34-D

CONSTRUCTION CHANGE / ADDENDUM			CONSULTANT		
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.		
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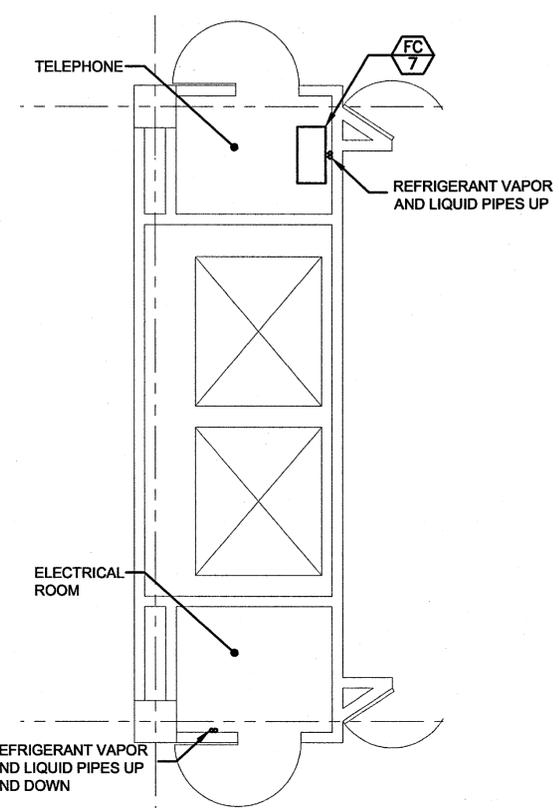
CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



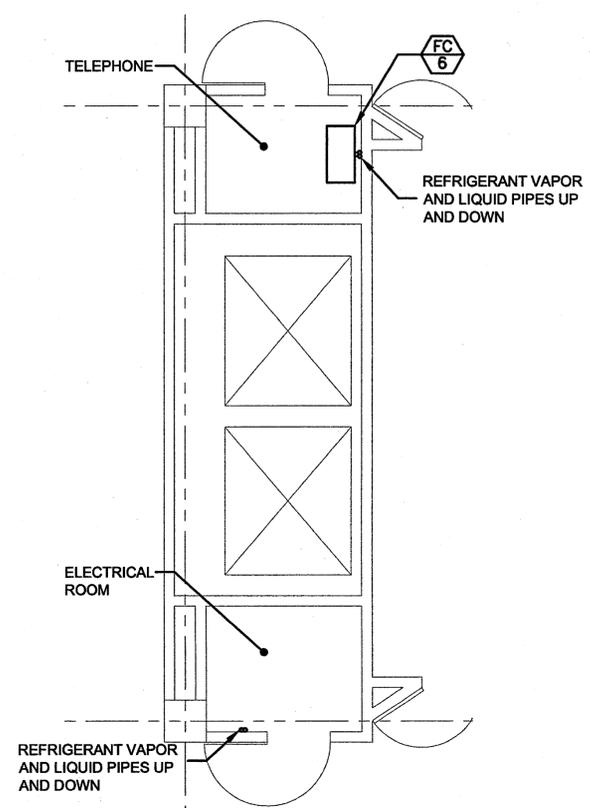
WARNING
0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



PARKING LEVEL 1 ENLARGED MECHANICAL PLAN
SCALE: 1/4" = 1'-0"



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



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

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

Teza Design
Consulting & Mechanical Engineering
231 A Street, Suite 103, San Diego, CA 92101
Phone: (619) 592-6229 - Fax: (619) 259-7700

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



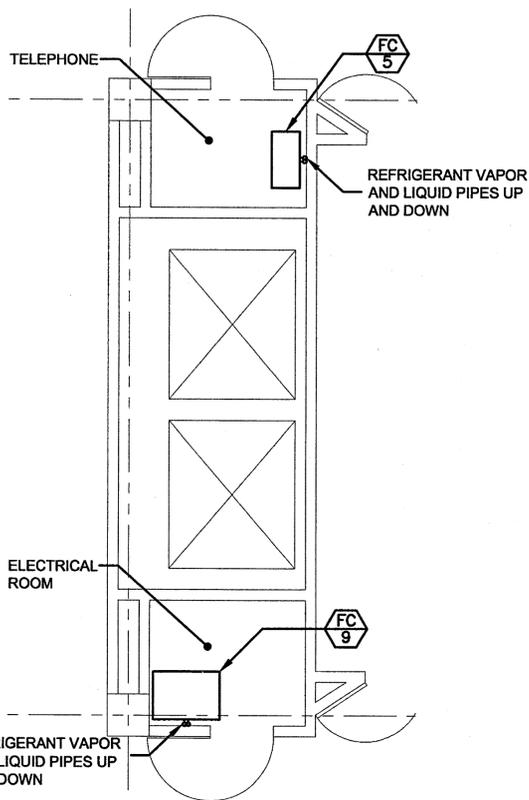
CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

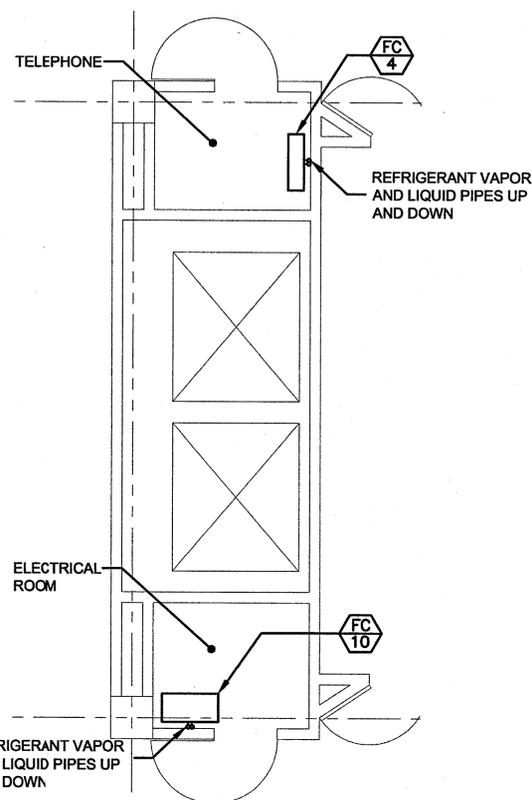
APPROVED BY:	
FOR CITY ENGINEER	
CHECKED BY:	
CONSTRUCTION ENGINEER	
CHECKED BY:	
INSPECTOR	

FUNDING CIP/SAP	SPEC. NO.	M-2
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
ENLARGED MECHANICAL PLANS		
CITY OF SAN DIEGO, CALIFORNIA SHEET 35 OF 66 SHEETS		W.B.S. B-00952, B-10008 B-10010
APPROVED BY:	DATE	SECTION HEAD
FOR CITY ENGINEER	3/9/12	
CHECKED BY:		PROJECT MANAGER
DSD BACKCHECK	MOA	
APPROVED	DATE	
	xx/xx/2011	
		CCS27 COORDINATE
		CCS83 COORDINATE
AS-BUILTS		
CONTRACTOR	DATE STARTED	
INSPECTOR	DATE COMPLETED	36392-35-D



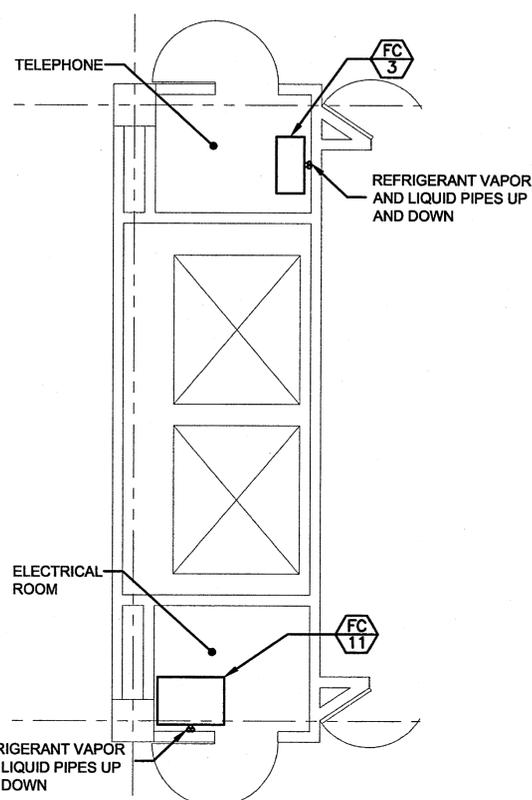
THIRD FLOOR ENLARGED MECHANICAL PLAN

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



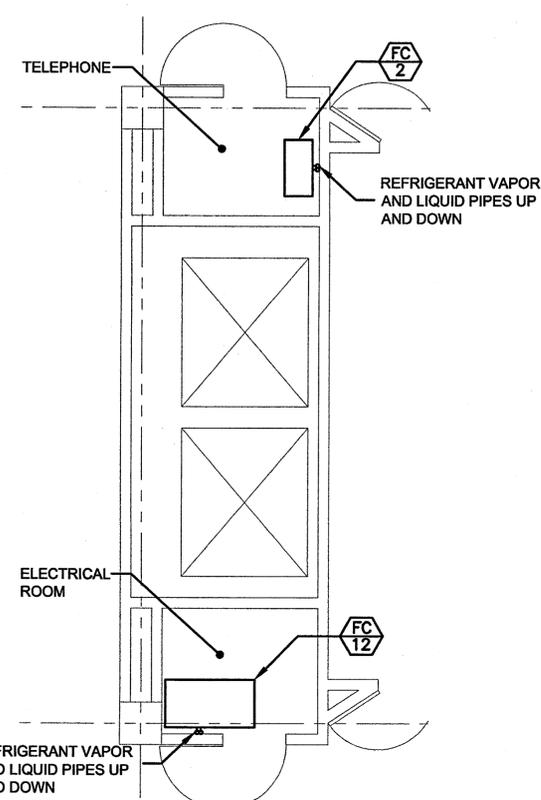
FOURTH FLOOR ENLARGED MECHANICAL PLAN

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



FIFTH FLOOR ENLARGED MECHANICAL PLAN

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



SIXTH FLOOR ENLARGED MECHANICAL PLAN

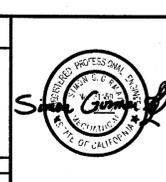
SCALE: 1/4" = 1'-0"

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

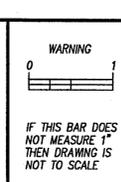
CONSULTANT

Teza Design
 Consulting in Mechanical Engineering
 271 A Street, Suite 103, San Diego, CA 92101
 Phone (619) 591-6491 - Fax (619) 519-2790

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



APPROVED BY:	FOR CITY ENGINEER
CHECKED BY:	CONSTRUCTION ENGINEER
CHECKED BY:	INSPECTOR

FUNDING CIP/SAP: _____ SPEC. NO. _____

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES

ENLARGED MECHANICAL PLANS

CITY OF SAN DIEGO, CALIFORNIA
 SHEET 36 OF 66 SHEETS

W.B.S. B-00952, B-1000B
 B-10010

DESCRIPTION	BY	APPROVED	DATE	FILMED
DSD BACKCHECK	MOA		xx/xx/2011	

AS-BUILTS

CONTRACTOR: _____ DATE STARTED: _____

INSPECTOR: _____ DATE COMPLETED: _____

SECTION HEAD: _____

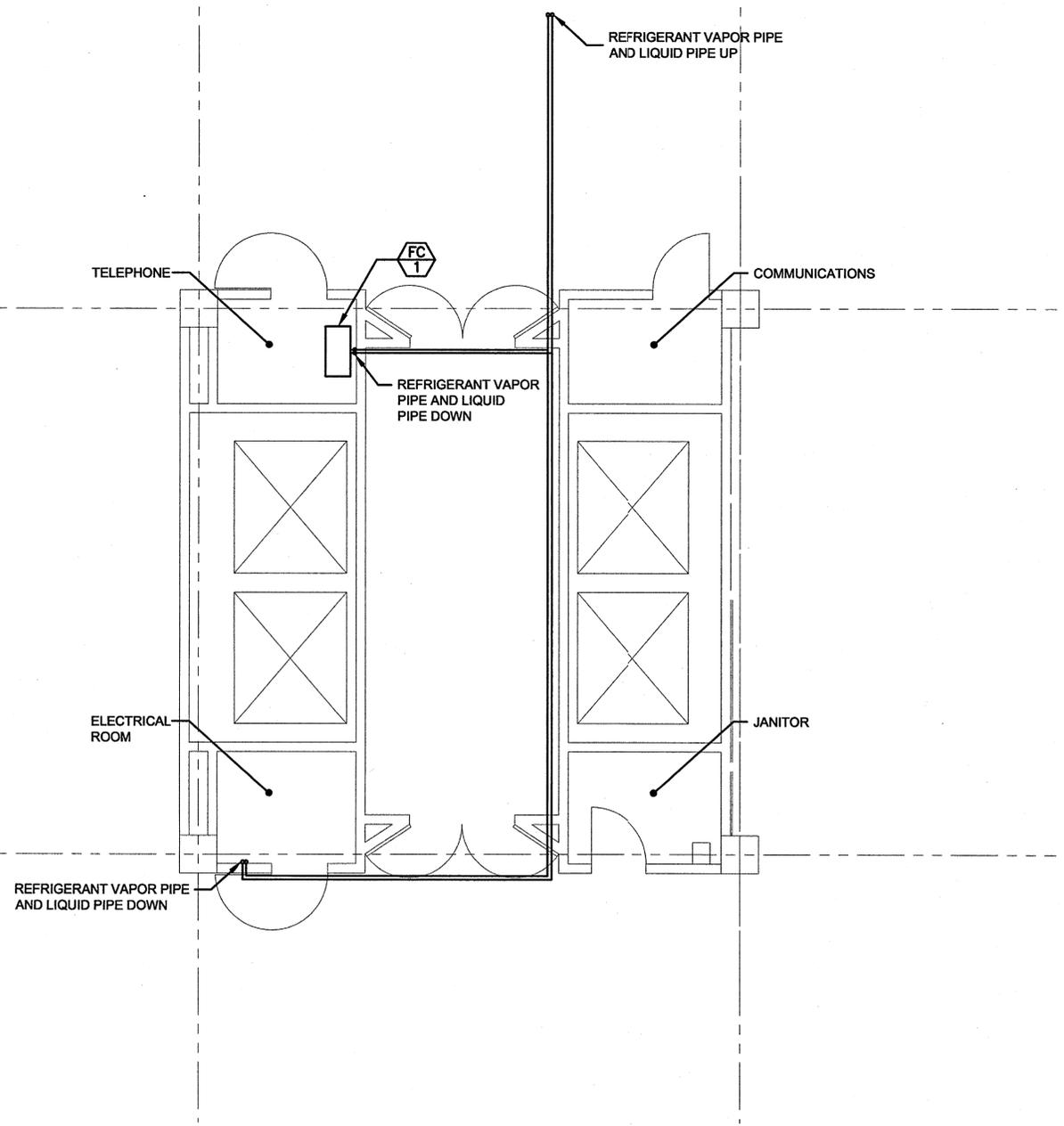
PROJECT MANAGER: _____

CCS27 COORDINATE: _____

CCS83 COORDINATE: _____

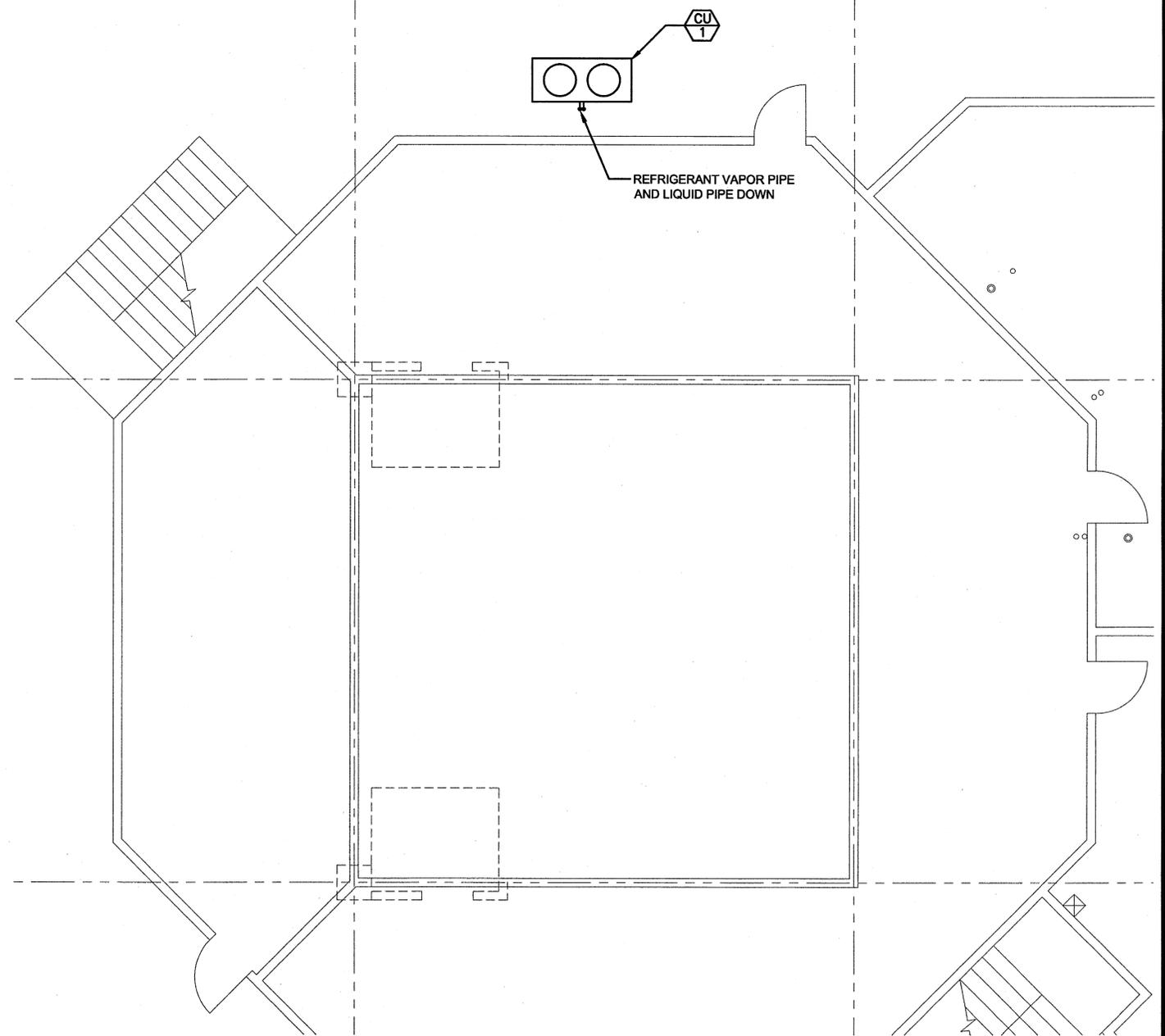
36392-36-D

M-3



SEVENTH FLOOR ENLARGED MECHANICAL PLAN

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



ENLARGED MECHANICAL ROOF PLAN

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

FUNDING CIP/SAP		SPEC. NO.		M-4
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
ENLARGED MECHANICAL 7TH FLOOR AND ROOF PLAN				
CITY OF SAN DIEGO, CALIFORNIA SHEET 37 OF 66 SHEETS			W.B.S. B-00952, B-10008 B-10010	
FOR CITY ENGINEER		DATE		SECTION HEAD
DESCRIPTION	BY	APPROVED	DATE	FILMED
DSD BACKCHECK	MOA		xx/xx/2011	
CONSTRUCTION ENGINEER				PROJECT MANAGER
CHECKED BY:				CCS27 COORDINATE
INSPECTOR				CCS83 COORDINATE
AS-BUILTS				
CONTRACTOR		DATE STARTED		
INSPECTOR		DATE COMPLETED		

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

Teza Deslan
Consulting in Mechanical Engineering
223 A Street, Suite 402, San Diego, CA 92101
Phone: (619) 592-6621 - Fax: (619) 592-7710

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT

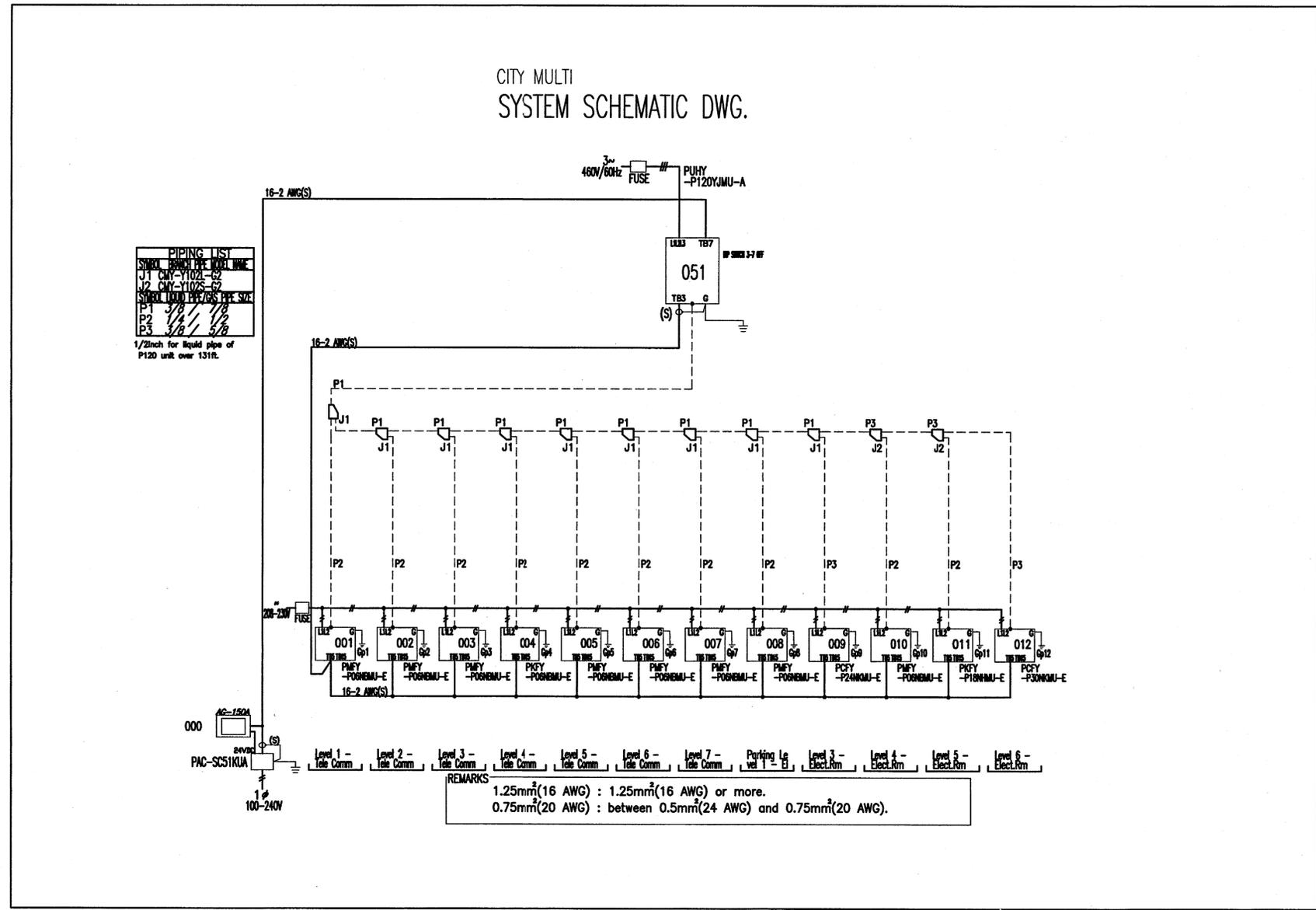


WARNING
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APPROVED BY:
FOR CITY ENGINEER
CHECKED BY:
CONSTRUCTION ENGINEER
CHECKED BY:
INSPECTOR

36392-37-D

CITY MULTI
SYSTEM SCHEMATIC DWG.



- GENERAL NOTES**
- ① SIZE THE REFRIGERANT LIQUID AND VAPOR PIPES PER MANUFACTURER'S RECOMMENDATION.
 - ② INSTALL CONTROL WIRES PER MANUFACTURER'S RECOMMENDATION. PROVIDE CONDUITS FOR WIRING CONTROLS.
 - ③ REFER TO ELECTRICAL SHEETS FOR POWER REQUIREMENTS.

CONTROLS SCHEMATIC PLAN

NOT TO SCALE

REMARKS
1.25mm²(16 AWG) : 1.25mm²(16 AWG) or more.
0.75mm²(20 AWG) : between 0.5mm²(24 AWG) and 0.75mm²(20 AWG).

FUNDING CIP/SAP	SPEC. NO.	M-5
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
CONTROLS SCHEMATIC PLAN		
CITY OF SAN DIEGO, CALIFORNIA SHEET 38 OF 66 SHEETS		W.B.S. B-00952, B-1000B B-10010
APPROVED BY: FOR CITY ENGINEER	DATE 3/29/12	SECTION HEAD
CHECKED BY: CONSTRUCTION ENGINEER	DATE xx/xx/2011	PROJECT MANAGER
CHECKED BY: INSPECTOR		CCS27 COORDINATE
		CCS83 COORDINATE
AS-BUILTS	DATE STARTED	36392-38-D
CONTRACTOR	DATE COMPLETED	

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT



Teza Design
Consulting & Mechanical Engineering
239 A Street, Suite 403, San Diego, CA 92101
Phone: (619) 592-6200 Fax: (619) 592-7700

SCALE

HORIZONTAL	NO SCALE
VERTICAL	NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



APPROVED BY: FOR CITY ENGINEER	DATE 3/29/12
CHECKED BY: CONSTRUCTION ENGINEER	DATE xx/xx/2011
CHECKED BY: INSPECTOR	

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 5) MECH-1C

Project Name: San Diego Police Headquarters Date: 11/21/2011
 Project Address: 1401 Broadway San Diego Climate Zone: 7 Total Cond. Floor Area: 540 Addition/Floor Area: n/a

GENERAL INFORMATION

Building Type: Nonresidential High-Rise Residential Hotel/Motel Guest Room
 Schools (Public School) Relocatable Public School Bldg. Conditioned Spaces Unconditioned Spaces (Attic/Loft)

Phase of Construction: New Construction Addition Alteration

Approach of Compliance: Component Overall Envelope TDV Energy Unconditioned (file affidavit)

Front Orientation: N, E, S, W or in Degrees: 0 deg

HVAC SYSTEM DETAILS

Equipment ¹ Item or System Tags (i.e. AC-1, RTU-1, HP-1)	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST	
		Meets Criteria or Requirements	Pass Fail - Describe Reason ²
Equipment Type ³	CU-1 (Outdoor Unit)	<input type="checkbox"/>	<input type="checkbox"/>
Equipment Type ³	Variable Ref. Flow	<input type="checkbox"/>	<input type="checkbox"/>
Number of Systems	1	<input type="checkbox"/>	<input type="checkbox"/>
Max Allowed Heating Capacity ⁴	630 Btu/hr	<input type="checkbox"/>	<input type="checkbox"/>
Minimum Heating Efficiency ⁴	0.1 kW	<input type="checkbox"/>	<input type="checkbox"/>
Max Allowed Cooling Capacity ⁴	186,721 Btu/hr	<input type="checkbox"/>	<input type="checkbox"/>
Cooling Efficiency ⁴	8.1 kW	<input type="checkbox"/>	<input type="checkbox"/>
Duct Location R-Value	n/a	<input type="checkbox"/>	<input type="checkbox"/>
When duct testing is required, submit MECH-4A & MECH-4-HERS	No	<input type="checkbox"/>	<input type="checkbox"/>
Economizer	No Economizer	<input type="checkbox"/>	<input type="checkbox"/>
Thermostat	Setback Required	<input type="checkbox"/>	<input type="checkbox"/>
Fan Control	Constant Volume	<input type="checkbox"/>	<input type="checkbox"/>

1. If the actual installed equipment performance efficiency and capacity is less than the Proposed (from the energy compliance submittal or from the building plans) the responsible party shall resubmit energy compliance to include the new changes.
 2. For additional detailed discrepancy use Page 2 of the Inspection Checklist Form. Compliance fails if a Fail box is checked.
 3. Indicate Equipment Type: Gas (Pkg or Split), VAV, HP (Pkg or split), Hydronic, PTAC, or other.
 EnergyPro 5.1 by EnergySoft User Number: 6553 RunCode: 2011-11-2114-58-41 ID: Page 3 of 11

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 2 of 5) MECH-1C

Project Name: San Diego Police Headquarters Date: 11/21/2011

Discrepancies:

EnergyPro 5.1 by EnergySoft User Number: 6553 RunCode: 2011-11-2114-58-41 ID: Page 4 of 11

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 3 of 5) MECH-1C

Project Name: San Diego Police Headquarters Date: 11/21/2011

Required Acceptance Tests

Designer:
 This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the applicable boxes by all acceptance tests that apply and failed all equipment that requires an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems. The NA number designates the Section in the Appendix of the Nonresidential Reference Appendices Manual that describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

Building Departments:
 Systems Acceptance: Before occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.
 Systems Acceptance: Before occupancy permit is granted, all newly installed HVAC equipment must be tested using the Acceptance Requirements.

The MECH-1C form is not considered a completed form and is not to be accepted by the building department unless the correct boxes are checked. The equipment requiring testing, person performing the test (Example: HVAC Installer, TAB contractor, controls contractor, PE in charge of project) and what Acceptance test must be conducted. The following checked-off forms are required for ALL newly installed equipment. In addition a Certificate of Acceptance forms shall be submitted to the building department that certifies plans, specifications, installation, certificates, and operating and maintenance information meet the requirements of §16-102(b) and Title 24 Part 6. The building inspector must receive the properly filled out and signed forms before the building can receive final occupancy.

TEST DESCRIPTION	MECH-2A	MECH-2A	MECH-4A	MECH-5A	MECH-6A	MECH-7A	MECH-8A	MECH-9A	MECH-10A	MECH-11A
Equipment Requiring Testing or Verification	Outdoor Ventilation For VAV & CAV	Constant Volume & Single-Zone Units	Air Distribution Ducts	Economizer Controls	Demand Control Ventilation (DCV)	Supply Fan VAV	Valve Leakage Test	Supply Water Temp. Reset	Hydronic System Variable Flow Control	Automatic Demand Shed Control
PURV-P120	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

EnergyPro 5.1 by EnergySoft User Number: 6553 RunCode: 2011-11-2114-58-41 ID: Page 5 of 11

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 4 of 5) MECH-1C

Project Name: San Diego Police Headquarters Date: 11/21/2011

TEST DESCRIPTION	MECH-12A	MECH-13A	MECH-14A	MECH-15A	Test Performed By:
Equipment Requiring Testing	Fault Detection & Diagnostics for DX Units	Automatic Fault Detection & Diagnostics for All & Zone	Distributed Energy Storage (DES) Systems	Thermal Energy Storage (TES) Systems	
PURV-P120	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

EnergyPro 5.1 by EnergySoft User Number: 6553 RunCode: 2011-11-2114-58-41 ID: Page 6 of 11

CERTIFICATE OF COMPLIANCE (Part 5 of 5) MECH-1C

Project Name: San Diego Police Headquarters Date: 11/21/2011

Documentation Author's Declaration Statement

I certify that this Certificate of Compliance documentation is accurate and complete.

Name: Tarkan Altay Signature: [Signature] Date: 11/21/2011
 Company: Teza Design Address: 233 A Street, Suite 1103 City/State/Zip: San Diego, CA 92101 Phone: (619) 955-6834

The Principal Mechanical Designer's Declaration Statement

- I am eligible under Division 3 of the California Business and Professions Code to accept responsibility for the mechanical design.
- This Certificate of Compliance identifies the mechanical features and performance specifications required for compliance with Title-24, Parts 1 and 6 of the California Code of Regulations.
- The design features represented on this Certificate of Compliance are consistent with the information provided to document this design on the other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Name: Simon Gimel Signature: [Signature] Date: 11/21/2011
 Company: Teza Design Address: 233 A Street, Suite 1103 City/State/Zip: San Diego, CA 92101 License #: M-31459 Phone: (619) 955-6834

Mandatory Measures
 Indicate location on building plans of Note Block for Mandatory Measures.

MECHANICAL COMPLIANCE FORMS & WORKSHEETS (check box if worksheet is included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, please refer to the 2008 Nonresidential Manual. Note: The Enforcement Agency may require all forms to be incorporated onto the building plans.

- MECH-1C Certificate of Compliance. Required on plans for all submittals.
- MECH-2C Mechanical Equipment Summary is required for all submittals.
- MECH-3C Mechanical Ventilation and Reheat is required for all submittals with mechanical ventilation.
- MECH-4C Fan Power Consumption is required for all prescriptive submittals.

EnergyPro 5.1 by EnergySoft User Number: 6553 RunCode: 2011-11-2114-58-41 ID: Page 7 of 11

FUNDING CIP/SAP: _____ SPEC. NO.: _____ M-6

PLANS FOR THE CONSTRUCTION OF
 POLICE HEADQUARTERS -
 MAIN ENTRY, PLUMBING AND
 ELECTRICAL UPGRADES

MECHANICAL TITLE 24 COMPLIANCE

CITY OF SAN DIEGO, CALIFORNIA W.B.S. B-00952, B-1000B
 SHEET 39 OF 66 SHEETS B-10010

DESCRIPTION	BY	APPROVED	DATE	FILMED
FOR CITY ENGINEER	[Signature]	[Signature]	11/21/2011	
DESCRIPTION	MOA		xx/xx/2011	

CONTRACTOR: _____ DATE STARTED: _____
 INSPECTOR: _____ DATE COMPLETED: _____

36392-39-D

CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

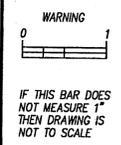
CONSULTANT

Teza Design
 Consulting Mechanical Engineers
 233 A Street, Suite 1103, San Diego, CA 92101
 Phone: (619) 955-6834 Fax: (619) 299-2700

SCALE: HORIZONTAL NO SCALE
 VERTICAL NO SCALE



CITY OF SAN DIEGO
 PUBLIC WORKS PROJECT

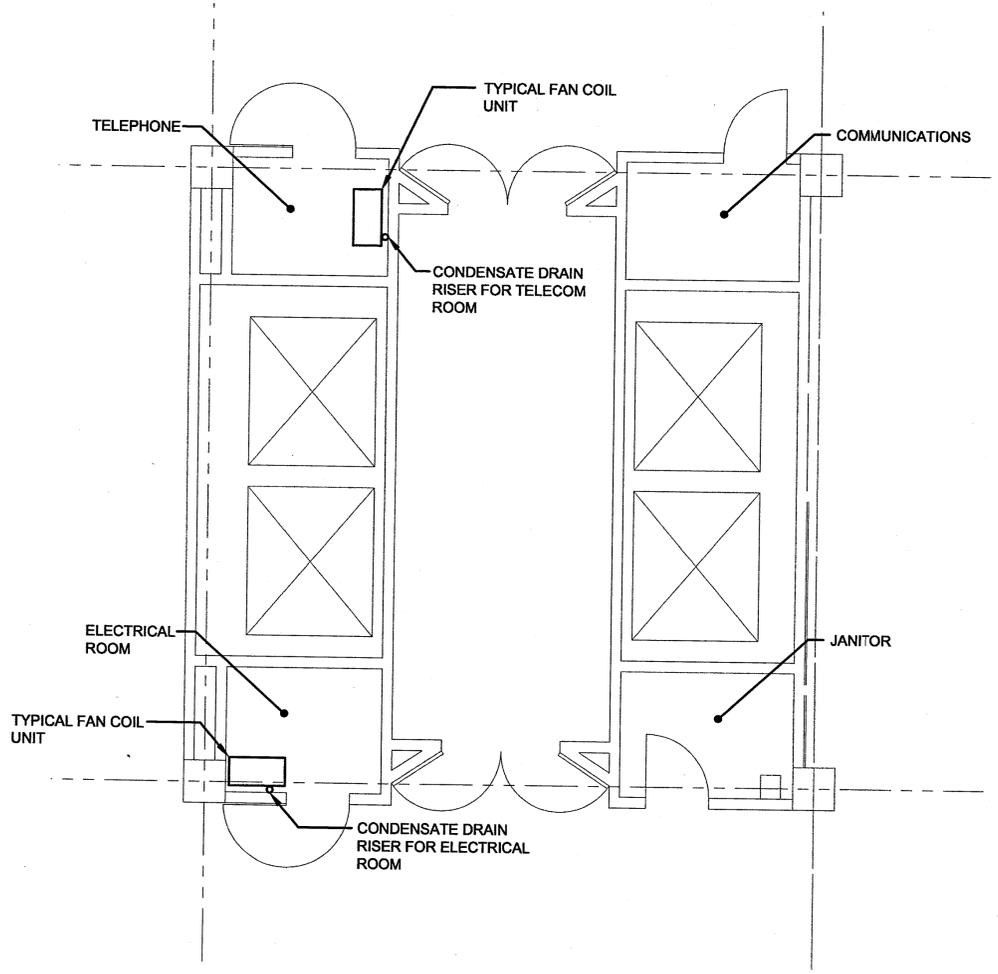


APPROVED BY: _____
 FOR CITY ENGINEER

CHECKED BY: _____
 CONSTRUCTION ENGINEER

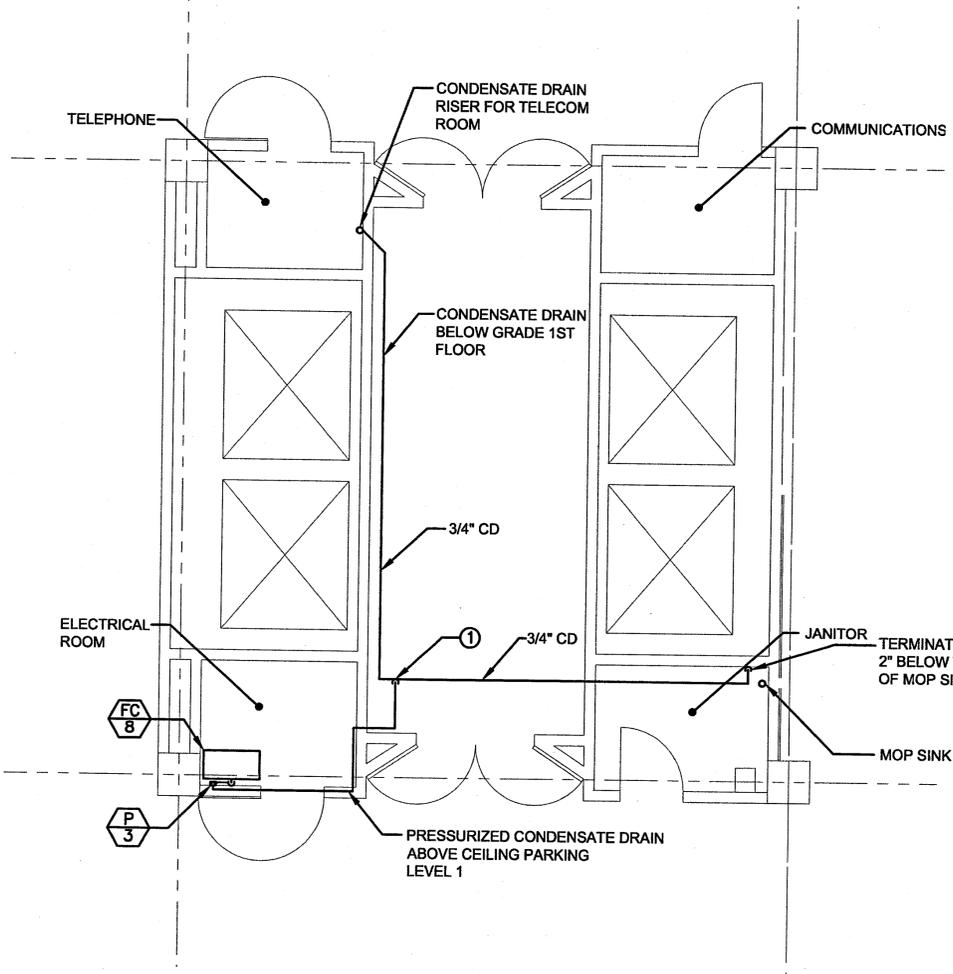
INSPECTOR: _____

POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES



CONDENSATE DRAIN PIPE PLAN (TYPICAL)

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



CONDENSATE DRAIN PIPE PLAN (PARKING 1)

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

KEY NOTES

① CONDENSATE DRAIN FROM THE ELECTRICAL ROOM AT PARKING 1 TO BE PUMPED UP TO THE CEILING LEVEL OF PARKING LEVEL 1 TO CONNECT TO THE CONDENSATE DRAIN PIPE FROM THE FIRST FLOOR TELECOM ROOM.

GENERAL NOTES

1 PROVIDE 1/8" SLOPE PER FOOT FOR THE CONDENSATE DRAIN.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

Teza Design
Consulting In Mechanical Engineering
 227 A Street Suite 102, San Diego, CA 92101
 Phone: (619) 594-0424 • Fax: (619) 594-0724

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
 0 1
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:
 FOR CITY ENGINEER
 CHECKED BY:
 CONSTRUCTION ENGINEER
 CHECKED BY:
 INSPECTOR

FUNDING CIP/SAP: SPEC. NO. M-7

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES

CONDENSATE DRAIN PIPE PLAN

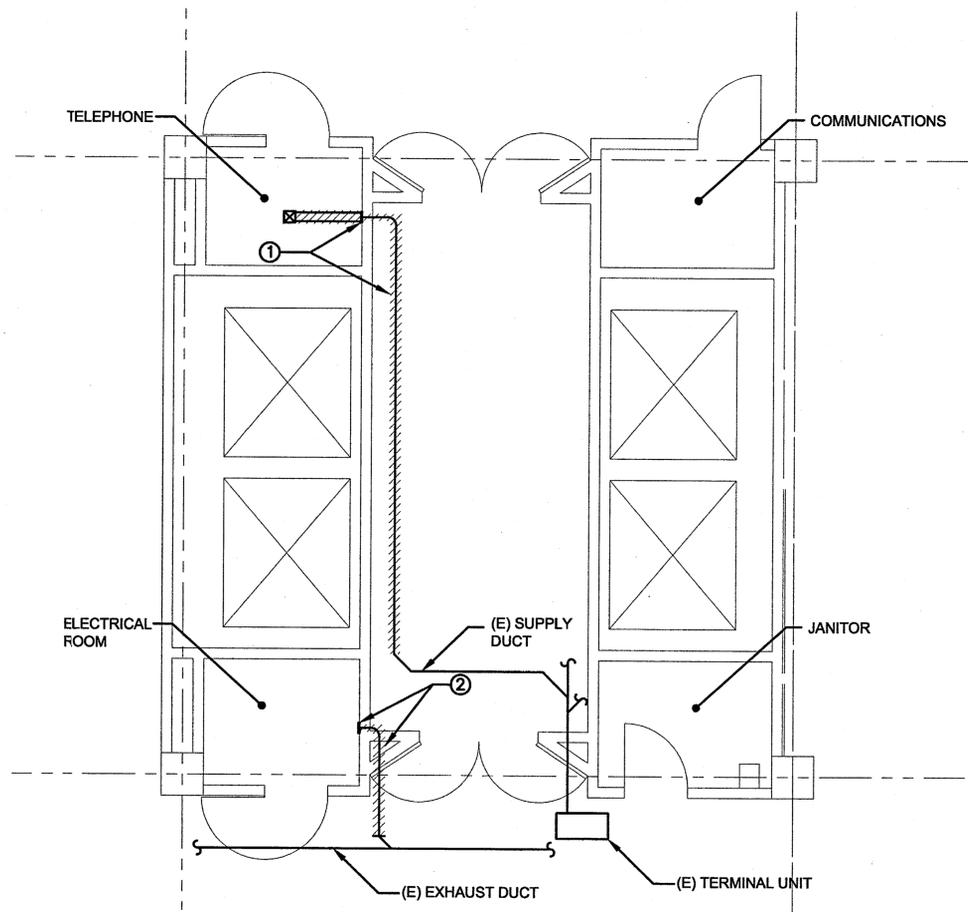
CITY OF SAN DIEGO, CALIFORNIA
 SHEET 40 OF 66 SHEETS

W.B.S. B-00952, B-10008
 B-10010

DESCRIPTION	BY	APPROVED	DATE	FILMED
DSD BACKCHECK	MOA	xx/xx/2011		

AS-BUILTS

CONTRACTOR: DATE STARTED: 36392-40-D
 INSPECTOR: DATE COMPLETED:



- KEY NOTES**
- ① EXISTING SUPPLY DUCT AND REGISTER SERVING THE TELECOM ROOM AND THE ENTIRE BRANCH DUCT UP TO THE MAIN SUPPLY DUCT SHALL BE DEMOLISHED AND CAPPED IN PLACE. FILL THE HOLE ON THE WALL AND SEAL, WHERE THE SUPPLY DUCT PENETRATION WAS, WITH A MATERIAL SIMILAR TO THE EXISTING WALL.
 - ② EXISTING EXHAUST DUCT AND GRILLE SERVING THE ELECTRICAL ROOM AND THE ENTIRE BRANCH DUCT UP TO THE MAIN EXHAUST DUCT SHALL BE DEMOLISHED AND CAPPED IN PLACE. FILL THE HOLE ON THE WALL AND SEAL, WHERE THE EXHAUST DUCT PENETRATION WAS, WITH A MATERIAL SIMILAR TO THE EXISTING WALL.

MECHANICAL DEMOLITION PLAN (TYPICAL)

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

M-8

FUNDING GP/SAP _____ SPEC. NO. _____
**PLANS FOR THE CONSTRUCTION OF
 POLICE HEADQUARTERS -
 MAIN ENTRY, PLUMBING AND
 ELECTRICAL UPGRADES**

MECHANICAL DEMOLITION PLAN

CITY OF SAN DIEGO, CALIFORNIA W.B.S. B-00952, B-10008
 SHEET 41 OF 66 SHEETS B-10010

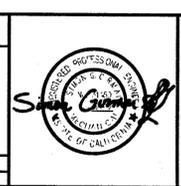
APPROVED BY: FOR CITY ENGINEER	DATE 3/9/12	SECTION HEAD
CHECKED BY: DSD BACKCHECK	BY MOA	PROJECT MANAGER
CHECKED BY: CONSTRUCTION ENGINEER	APPROVED xx/xx/2011	CCS27 COORDINATE
CHECKED BY: INSPECTOR	DATE STARTED	CCS83 COORDINATE
CONTRACTOR	DATE COMPLETED	36392-41-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

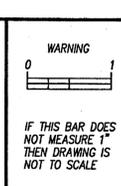
CONSULTANT

Teza Design
 Consulting In Mechanical Engineering
 277 A Street Suite 102, San Diego, CA 92101
 Phone: (619) 594-6474 Fax: (619) 594-7792

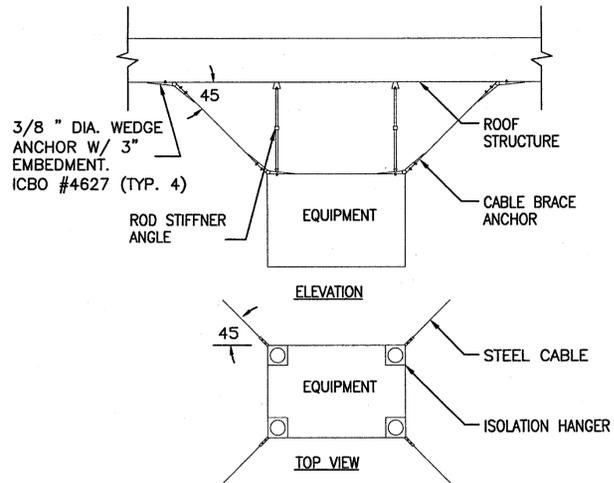
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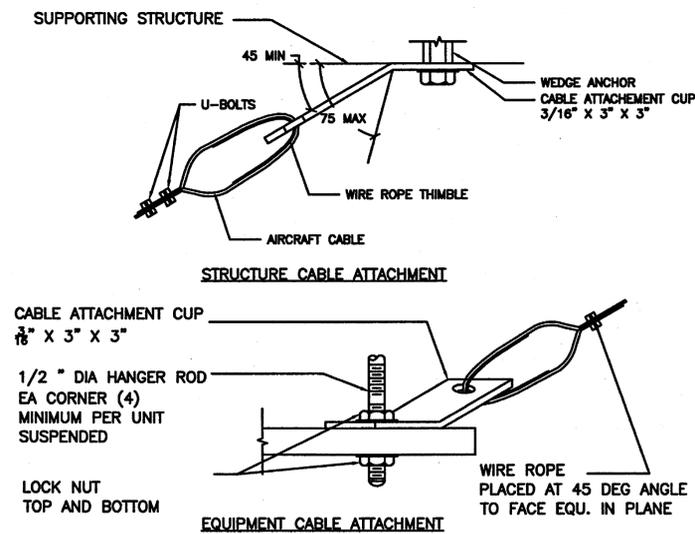
**CITY OF SAN DIEGO
 PUBLIC WORKS PROJECT**



WARNING
 0 1
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EQUIPMENT HANGER DETAIL
NO SCALE



SUSPENDED EQUIPMENT MOUNTING DETAIL
NO SCALE

M-9

FUNDING CIP/SAP _____ SPEC. NO. _____

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - MAIN ENTRY, PLUMBING AND ELECTRICAL UPGRADES

MECHANICAL DETAILS

CITY OF SAN DIEGO, CALIFORNIA
SHEET 42 OF 66 SHEETS

W.B.S. B-00952, B-10008
B-10010

DESCRIPTION	BY	APPROVED	DATE	FILMED
DSD BACKCHECK	MOA		xx/xx/2011	

APPROVED BY: _____ FOR CITY ENGINEER DATE: 3/9/12

CHECKED BY: _____ FOR CITY ENGINEER

CHECKED BY: _____ CONSTRUCTION ENGINEER

CHECKED BY: _____ INSPECTOR

CONTRACTOR _____ DATE STARTED _____

INSPECTOR _____ DATE COMPLETED _____

SECTION HEAD _____ PROJECT MANAGER _____

CCS27 COORDINATE _____

CCS83 COORDINATE _____

36392-42-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

Tesa Design
Consulting in Mechanical Engineering

281 A Street, Suite 101, San Diego, CA 92101
Phone: (619) 592-6074 - Fax: (619) 592-7792

SCALE: HORIZONTAL NO SCALE
VERTICAL NO SCALE

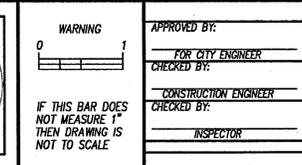


CITY OF SAN DIEGO
PUBLIC WORKS PROJECT

WARNING

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



GENERAL SYMBOL LIST

- LOW LEVEL STEP/WALKWAY LIGHT FIXTURE. FIXTURE TYPE 'A' PER FIXTURE SCHEDULE.
- PEDESTRIAN SCALE POST-TOP LIGHT FIXTURE. FIXTURE TYPE 'B' PER FIXTURE SCHEDULE.
- ▽ LOW LEVEL/WALKWAY LIGHT FIXTURE. FIXTURE TYPE 'C' PER FIXTURE SCHEDULE.
- ▲ LOW LEVEL/WALKWAY LIGHT FIXTURE. FIXTURE TYPE 'D' PER FIXTURE SCHEDULE.
- ▨ POWER DISTRIBUTION SWITCHBOARD. (SWBD)
- ▬ FLUSH MOUNTED PANELBOARD.
- ▬ SURFACE MOUNTED PANELBOARD.
- ▬ SURFACE MOUNTED CABINET, AS NOTED.
- ▬ FLUSH MOUNTED CABINET, AS NOTED.
- FUSED DISCONNECT SWITCH. SIZE AS NOTED. (FDS)
- ⊠ COMBINATION MAGNETIC MOTOR STARTER AND DISCONNECT SWITCH.
- JUNCTION BOX. SIZED PER CEC, U.O.N.
- ⊕ DUPLEX RECEPTACLE
- ⊙ MOTOR CONNECTION.
- ⊕ MECHANICAL EQUIPMENT REFERENCE. (TYPICAL)
- ⊠ PULLBOX WITH SCREW COVER, SIZE AS REQUIRED.
- ⊕ 3/4" X 10'-0" COPPER CLAD STEEL GROUND ROD, U.O.N.
- CONDUIT CONCEALED IN WALL OR CEILING SPACE.
- - - CONDUIT CONCEALED UNDER FLOOR SLAB OR UNDERGROUND.
- - - CONDUIT INSTALLED EXPOSED.
- CONDUIT TURNED UP.
- CONDUIT TURNED DOWN.
- CONDUIT STUBBED UP AND CAPPED IN CEILING SPACE.
- ⊕ FLEXIBLE METAL CONDUIT. INSTALL REQUIRED BRANCH CIRCUIT CONDUCTORS AND EQUIPMENT GROUND CONDUCTOR.
- A-1,3 HOMERUN TO INDICATED PANELBOARD ('A'). NUMBERS (1,3) INDICATE BRANCH CIRCUIT NUMBERS. (TYPICAL)
- 3/4"-3#8+1#10 EG INDICATES 3/4" CONDUIT WITH 3 NUMBER 8 CONDUCTORS + 1 NUMBER 10 EQUIPMENT GROUND. (TYPICAL)
- 3/4"-3#10+3#10(N)+1#10 EG INDICATES 3/4" CONDUIT WITH 3 NUMBER 10 PHASE CONDUCTORS PLUS 3 NUMBER 10 INDIVIDUAL NEUTRAL CONDUCTORS PLUS 1 NUMBER 10 EQUIPMENT GROUND.
- 3/4" CONDUIT WITH 2#12 CONDUCTORS PLUS 1#12 EQUIPMENT GROUNDING CONDUCTOR.
- 3/4" CONDUIT WITH 3#12 CONDUCTORS PLUS 1#12 EQUIPMENT GROUNDING CONDUCTOR.
- #10 A NUMBER ADJACENT TO THE HASH MARK IN ANY CONDUIT RUN INDICATES THE CONDUCTOR SIZE TO BE USED IN LIEU OF #12 AWG. CONDUIT AND EQUIPMENT GROUNDING CONDUCTOR SHALL BE SIZED PER CEC, U.O.N.
- ⊕ LOW VOLTAGE CIRCUIT BREAKER.
- ⊕ GROUND CONNECTION.
- TRIP SETTING
- FRAME SIZE
- NO. OF POLES
- ④ ELECTRICAL NOTE REFERENCE (TYPICAL)
- ① E-6 INDICATES DETAIL '1' ON SHEET E-6 (TYPICAL)

ABBREVIATIONS LIST

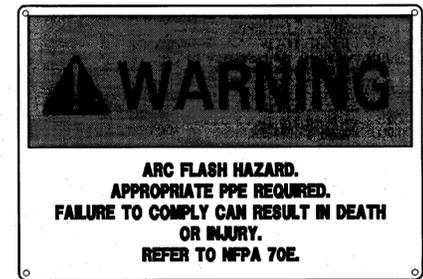
- | | | | |
|--------|---|---------|--|
| A, AMP | AMPERE | SW | SWITCH |
| AC | ALTERNATING CURRENT | SYM | SYMMETRICAL |
| AF | AMPS FRAME, OR AMPS FUSE RATING | T, TELE | TELEPHONE |
| AFB | ABOVE FINISHED FLOOR | TYP | TYPICAL |
| AFG | ABOVE FINISHED GRADE | U/G | UNDERGROUND |
| AIC | AMPERE INTERRUPTING CAPACITY | UPS | UNINTERRUPTIBLE POWER SUPPLY (INVERTER) |
| AT | AMPS TRIP RATING | U.O.N. | UNLESS OTHERWISE NOTED |
| ATS | AUTOMATIC TRANSFER SWITCH | WP | WEATHERPROOF |
| AS | AMPS SWITCH RATING | +48" | MOUNTING HEIGHT ABOVE FINISHED FLOOR (TYPICAL) |
| BMS | BATTERY MANAGEMENT SYSTEM | | |
| C | CONDUIT | | |
| CEC | CALIFORNIA ELECTRICAL CODE | | |
| CIR | CIRCUIT | | |
| CMU | CONCRETE MASONRY UNIT | | |
| C.O. | CONDUIT ONLY | | |
| CPT | CONTROL POWER TRANSFORMER | | |
| CU | COPPER | | |
| CW | COLD WATER | | |
| DWG | DRAWING | | |
| EA. | EACH | | |
| EG | EQUIPMENT GROUND | | |
| ELEC | ELECTRICAL | | |
| EMERG. | EMERGENCY | | |
| EV | ELECTRIC VEHICLE (CHARGER) | | |
| EWC | ELECTRIC WATER COOLER | | |
| EWB | ELECTRIC WATER HEATER | | |
| FA | FIRE ALARM | | |
| FAAP | FIRE ALARM ANNUNCIATOR PANEL | | |
| FACP | FIRE ALARM CONTROL PANEL | | |
| GFCI | GROUND-FAULT CIRCUIT INTERRUPTER | | |
| GFI | GROUND-FAULT INTERRUPTER | | |
| GND | GROUND | | |
| HPF | HIGH POWER FACTOR | | |
| HPS | HIGH PRESSURE SODIUM | | |
| JB | JUNCTION BOX | | |
| KVA | KILOVOLT AMPS (kva) | | |
| KW | KILOWATT (kw) | | |
| KWH | KILOWATT-HOUR (kwh) | | |
| LPS | LOW PRESSURE SODIUM | | |
| LTG | LIGHTING | | |
| NEC | NATIONAL ELECTRICAL CODE | | |
| NEMA | NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION | | |
| NIC | NOT IN CONTRACT | | |
| NTS | NOT TO SCALE | | |
| OC | ON CENTER | | |
| O/D | OUTDOOR | | |
| O/H | OVERHEAD | | |
| PNLBDS | PANELBOARDS | | |
| POC | POINT OF CONNECTION | | |
| PSMH | PULSE START METAL HALIDE | | |
| PV | PHOTOVOLTAIC (SYSTEM) | | |
| REF | REFERENCE | | |
| SCCR | SHORT CIRCUIT CURRENT RATING | | |
| SDPD | SAN DIEGO POLICE DEPARTMENT | | |

NAMEPLATES SHALL BE AS FOLLOWS-

PANELS:	PANEL 6G	SIZE: 1 1/2" X 2"
SUBPANELS:	PANEL EG4 208Y/120V 4W 200AMP	SIZE: 1" X 3"
TRANSFORMERS:	TRANSFORMER TE-R FED FROM EMSP	SIZE: 1 1/2" X 4"
SUB-FEEDS:	200 AMP FEEDS PANEL E6A ON 6TH FLOOR	SIZE: 1 1/2" X 4"

NAMEPLATE DETAIL

NO SCALE
NAMEPLATES SHALL MATCH EXISTING IN COLOR, TEXT HEIGHT AND STYLE, ETC.
NAMEPLATES SHALL BE MANUFACTURED BY THE ELECTRICAL CONTRACTOR AND GIVEN OVER TO THE POLICE HEADQUARTERS ELECTRICIANS FOR INSTALLATION.



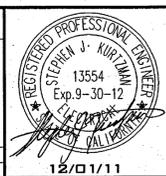
ARC FLASH HAZARD WARNING SIGN

NO SCALE
CONTRACTOR SHALL PROVIDE ADHESIVE WARNING LABELS AS SHOWN ABOVE. LABELS SHALL BE MINIMUM 3" HIGH X 4" WIDE, AND HAVE BLACK LETTERS ON BRIGHT YELLOW BACKGROUND. PROVIDE ONE (1) LABEL ATTACHED TO THE FRONT OF EACH PANELBOARD AND SWITCHBOARD AFFECTED BY THESE PROJECTS.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

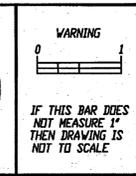
CONSULTANT
TURPIN & RATTAN
 ENGINEERING, INC.
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA MESA, CA 91941-9221
 619 / 466 / 6224 FAX 619 / 6225
 E-MAIL: ENGINEER@TRRSD.COM

SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT

12/01/11



APPROVED BY:	FOR CITY ENGINEER
CHECKED BY:	CONSTRUCTION ENGINEER
CHECKED BY:	INSPECTOR

FUNDING CIP/SAP	SPEC. NO.	E1
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
SYMBOLS AND ABBREVIATIONS		
CITY OF SAN DIEGO, CALIFORNIA SHEET 43 OF 66 SHEETS		V.B.S. B-00952, B-10008 B-10010
FOR CITY ENGINEER	DATE	SECTION HEAD
DESCRIPTION	BY	PROJECT MANAGER
DSD BACKCHECK	NDA	CCS27 COORDINATE
APPROVED	DATE	CCS83 COORDINATE
12/08/2011		
FILED		
AS-BUILTS		
CONTRACTOR	DATE STARTED	36392-43-D
INSPECTOR	DATE COMPLETED	

POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

GENERAL NOTES

- ALL WORK SHALL BE IN COMPLIANCE WITH THE 2010 EDITION OF THE C.E.C. AND WHERE APPLICABLE AS AMENDED BY THE LOCAL ORDINANCES AND CODES OF GOVERNING MUNICIPALITIES.
- ALL ELECTRICAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND ALL OTHER RELATED CONTRACT DRAWINGS.
- VERIFY EXACT LOCATION, SIZE, AND EXTENT OF ALL EXISTING UTILITIES, OBSTRUCTIONS AND/OR OTHER CONDITIONS WHICH MAY AFFECT THE PROPOSED WORK UNDER THE PROJECT. THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PREVENT DAMAGE TO EXISTING WORK. ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES DURING CONSTRUCTION SHALL BE IMMEDIATELY REPAIRED OR REPLACED IN ACCORDANCE WITH THE OWNERS DIRECTION AT THE CONTRACTOR'S EXPENSE.
- CAREFULLY EXAMINE ALL CONTRACT DRAWINGS/SPECIFICATIONS AND BE RESPONSIBLE FOR THE PROPER FITTING OF MATERIALS AND EQUIPMENT AT EACH LOCATION AS INDICATED WITHOUT SUBSTANTIAL ALTERATION. IN AS MUCH AS THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. FURNISHING FITTINGS REQUIRED TO MEET SUCH CONDITIONS SHALL BE AT NO COST TO THE OWNER.
- SYSTEM AND EQUIPMENT GROUNDING SHALL BE AS REQUIRED BY THE C.E.C. U.O.N.
- CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED TIGHT AGAINST AND PARALLEL TO BEAMS AND WALLS.
- ALL EXPOSED CONDUIT RUNS WITHIN THE BUILDING SHALL BE INSTALLED TIGHT AGAINST BOTTOM OF BEAMS. WHERE HV DUCTS INTERFERE, THE CONDUITS SHALL BE ROUTED IN SUCH A MANNER THAT THE CONDUITS ARE NOT CONCEALED.
- CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO MOTORS AND OTHER EQUIPMENT.
- THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUITS ARE BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS APPROVED BY THE ENGINEER MAY BE MADE BY THE CONTRACTOR AT HIS EXPENSE TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS.
- ALL SURFACE MOUNTED PANELS AND PANELBOARDS SHALL BE MOUNTED TO MAINTAIN A 1/4" AIR SPACE BETWEEN THE ENCLOSURE AND THE WALL.
- ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE TOP OF THE TOP CIRCUIT BREAKER OPERATING HANDLE TO THE FLOOR SHALL NOT EXCEED 6'-6".
- NAMEPLATES SHALL CONFORM STRICTLY TO INSTRUCTIONS AS SPECIFIED IN THE ELECTRICAL SPECIFICATIONS AND ON THE DRAWINGS. SEE DETAILS 1/E1 AND 1/E6. THE FOLLOWING SHALL HAVE NAMEPLATES:
 - ALL MAIN BREAKERS
 - ALL PANELBOARDS AND SWITCHBOARDS
 - DISCONNECT SWITCHES
 - CONTROL CABINETS
 - ALL TRANSFORMERS
- ALL FEEDERS AND BRANCH CIRCUITS SHALL HAVE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR INCLUDED WITH THE PHASE/NEUTRAL CONDUCTORS.
- ALL CIRCUIT PROTECTIVE DEVICES SHALL HAVE THE REQUIRED RATINGS AND INTERRUPTING CAPACITY EQUAL TO OR GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT AT ITS SUPPLY TERMINAL.
- OUTLET BOXES, UTILIZATION EQUIPMENT CABINETS, CONDUIT SYSTEMS AND CONVENIENCE OUTLETS SHALL BE GROUNDED IN ALL ELECTRICAL SYSTEMS OPERATING AT 48 VOLTS AND ABOVE. EACH GROUND WIRE SHALL BE TERMINATED AT THE EQUIPMENT GROUND BAR. GROUND WIRES SHALL BE SIZED PER C.E.C. 250.122.

GENERAL NOTES CONTINUED

- ALL CONDUITS SHALL BE A MINIMUM TRADE SIZE OF 3/4".
- ALL BUILDING WIRING SHALL BE COPPER, PER SPECIFICATIONS, REGARDLESS OF APPLICATION. NO ALUMINUM WIRING SHALL BE USED.
- ALL EQUIPMENT AND MATERIALS REMOVED BY THE CONTRACTOR SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR.
- FIELD VERIFY EXISTING CONDITIONS AND ADVISE PROJECT MANAGER OF ANY DISCREPANCIES OR DEVIATIONS BETWEEN PLANS AND ACTUAL CONDITIONS PRIOR TO SUBMITTING BID.
- IF THE CONTRACTOR BELIEVES THAT THERE ARE CONFLICTS WITHIN THESE ELECTRICAL DRAWINGS OR BETWEEN THE ELECTRICAL DRAWINGS AND THE SPECIFICATIONS, OR BETWEEN THE ELECTRICAL DRAWINGS AND ANY MECHANICAL, ARCHITECTURAL, PLUMBING OR STRUCTURAL DRAWING, BID THE MORE EXPENSIVE OR ELABORATE PROCESS OR PROCEDURE SHOWN AND CALL THE DISCREPANCY TO THE ARCHITECT'S ATTENTION. SHOULD THE CLIENT, IN ITS DISCRETION, CHOOSE TO IMPLEMENT THE CHEAPER OR SIMPLER PROCEDURE AFTER BID OPENING, A CREDIT CHANGE ORDER WILL BE ISSUED TO THE CONTRACTOR.
- VERIFY ALL EXISTING CONDITIONS AND ASSUME THE RESPONSIBILITY OF INSTALLING FITTINGS, EQUIPMENT, RACEWAYS, ETC. IN THE EXISTING SPACE ALLOWED. ALL NEW INSTALLATIONS SHALL BE AT NEAT RIGHT ANGLES.
- WIRING FROM EMERGENCY SOURCES SHALL BE KEPT ENTIRELY SEPARATE AND INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT, AND SHALL NOT ENTER THE SAME RACEWAY, CABLE BOX OR CABINET WITH OTHER WIRING. (REFERENCE C.E.C. 700.9)
- WHERE ITEMS ARE INDICATED FOR DISCONNECTION OR REMOVAL, REMOVE ALL ASSOCIATED CONDUIT, WIRING, SUPPORTS, AND BOXES BACK TO SOURCE UNLESS OTHERWISE NOTED. REMOVE CONDUIT FLUSH WITH SLAB, PATCH WALLS AND FLOORS NOT SCHEDULED FOR DEMOLITION.
- SEAL ALL PENETRATIONS OF RATED WALLS.
- ALL ELECTRICAL EQUIPMENT SHALL BE ANCHORED OR BRACED TO MEET THE HORIZONTAL AND VERTICAL FORCES PRESCRIBED IN THE 2010 CBC, SECTION 1614A.1.13 AND ASCE-13.3, 13.4, 13.6 AND CHAPTER 6.

THE ATTACHMENT OF THE FOLLOWING ITEMS SHALL BE DESIGNED TO RESIST THE FORCES PRESCRIBED ABOVE, BUT NOT BE DETAILED ON THE PLANS, AND THE PROJECT INSPECTOR WILL VERIFY THAT THESE ITEMS (EQUIPMENT) HAVE BEEN ANCHORED:

 - EQUIPMENT WEIGHING LESS THAN 400 POUNDS SUPPORTED DIRECTLY ON THE FLOOR OR ROOF.
 - FURNITURE REQUIRED TO BE ATTACHED IN ACCORDANCE WITH ASCE-7-05, SECTION 13.5.
 - TEMPORARY OR MOVABLE EQUIPMENT WITH FLEXIBLE CONNECTION TO POWER OR UTILITIES.
 - EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUPPORTED BY VIBRATION ISOLATORS.
 - EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUPPORTED 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 ELECTRICAL ENGINEER.
- ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO RESIST THE FORCES PRESCRIBED IN ASCE 7-05, SECTION 13.3 AS DEFINED IN ASCE 7-05, SECTION 13.6.5.5, ITEM 6, 13.6.7, 13.6.8 AND 2010 CBC, SECTION 1614A.1.13.

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 319, APPENDIX D.

COPIES OF THE MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF HANGING AND BRACING OF THE ELECTRICAL DISTRIBUTION SYSTEMS.
- ALL WIRING SHALL BE IN CONDUIT. NO TYPE 'MC' OR OTHER PRE-ASSEMBLED WIRING ASSEMBLIES ARE ACCEPTABLE.

E1.1

FUNDING CIP/SAP	SPEC. NO.	E1.1	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES			
PROJECT NOTES			
CITY OF SAN DIEGO, CALIFORNIA SHEET 44 OF 66 SHEETS		V.R.S. B-00952, B-10008 B-10010	
APPROVED BY FOR CITY ENGINEER	DATE 3/29/12	SECTION HEAD	
DESCRIPTION DSD BACKCHECK	BY NDA	APPROVED DATE 12/09/2011	FILMED PROJECT MANAGER
CHECKED BY CONSTRUCTION ENGINEER	CCS27 COORDINATE		CCS83 COORDINATE
CHECKED BY INSPECTOR	AS-BUILTS	CONTRACTOR DATE STARTED	
INSPECTOR	INSPECTOR	DATE COMPLETED	
			36392-44-D

FOR OVERALL ELECTRICAL SCOPE OF WORK SEE DRAWING G-2.

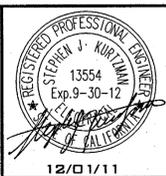
CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

TREP # J9292.00

TURPIN & RATTAN
ENGINEERING, INC.
CONSULTING ENGINEERS
4719 PALM AVENUE
LA MESA, CA 91941-9281
619 / 466 / 6224 FAX 466 / 6233
E-MAIL: ENGINEER@TRRISO.COM

SCALE HORIZONTAL NO SCALE
NONE VERTICAL NO SCALE



**CITY OF SAN DIEGO
PUBLIC WORKS PROJECT**



WARNING

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

LIGHTING FIXTURE SCHEDULE

SYMBOL	FIXTURE TYPE	MANUFACTURER AND CATALOG NUMBER	EQUIVALENT MANUFACTURER SUBJECT TO APPROVAL OF SHOP DRAWINGS	LAMPS				FIXTURE		BALLAST TYPE	MOUNTING	DESCRIPTION
				QTY.	TYPE	WATTS	COLOR TEMP.	INPUT VOLTS	TOTAL INPUT WATTS			
●	A	FAIL SAFE QD-DW-HE-26-H-120V-WHT	NONE ACCEPTABLE MUST MATCH EXISTNG	1	QUAD	26	4000° K	120	28	ELECTRONIC	SEMI RECESSED WALL	WHITE LOW LEVEL/WALKWAY LIGHT WITH CUSTOM BACKING PLATE TO EXACTLY MATCH EXISTING. FINISH OF FIXTURE AND HOT DIPPED GALVANIZED STEEL BACKING PLATE AND STAINLESS STEEL MOUNTING SCREW HEADS TO BE HIGH GLOSS WHITE EPOXY. PROVIDE FIVE (5) SPARE FIXTURES WITH BACKING PLATES AND LAMPS AND TURN OVER TO OWNER. CONFIRM EXACT FIXTURE CATALOG NUMBER WITH OWNER PRIOR TO ORDERING.
○	B	GARDCO MP17-POST/TOP-Q-175PSMH-277V-WP	ANY TRUE EQUAL	1	PSMH	175	4000° K	277	190	HPF	POLE	WHITE SEMI-SPHERICAL POST-TOP AREA LIGHT FIXTURE WITH MATCHING ROUND NON-TAPERED STEEL 12'-0" LONG POLE AND ANCHOR BOLT COVER PLATE(S). EXISTING ANCHOR BOLTS TO BE RE-USED ARE 1/2" IN DIAMETER WITH A BCD OF 7.1". PROVIDE CUSTOM DRILLED ANCHOR/BASE PLATE IF NECESSARY. PROVIDE FIVE (5) SPARE LAMPS.
△	C	DEVINE F653-50HPS-120V-WHT-CP	NONE ACCEPTABLE MUST MATCH EXISTNG	1	HPS	50	4000° K	120	65	HPF	SEMI RECESSED WALL	WHITE, RECTANGULAR STEP LIGHT TO MATCH EXISTING (NO BACKING PLATE/ ADAPTER REQUIRED). PROVIDE FIVE (5) SPARE COMPLETE FIXTURES WITH LAMPS AND TURN OVER TO OWNER IN ORIGINAL CARTONS. CONFIRM MOUNTING AND EXACT FIXTURE CATALOG NUMBER WITH OWNER PRIOR TO ORDERING (MUST EXACTLY FIT EXISTING LOCATIONS IN CONCRETE WALL).
◐	D	ARCHITECTURAL AREA LIGHTING PCL-S-P-XJO-150HPS-AWT	NONE ACCEPTABLE MUST MATCH EXISTNG	1	HPS	150	4100° K	277	165	HPF	SEMI RECESSED WALL	WHITE, RECTANGULAR STEP LIGHT TO MATCH EXISTING (NO BACKING PLATE/ ADAPTER REQUIRED). PROVIDE FIVE (5) SPARE COMPLETE FIXTURES WITH LAMPS AND TURN OVER TO OWNER IN ORIGINAL CARTONS. CONFIRM MOUNTING STYLE AND EXACT FIXTURE CATALOG NUMBER WITH OWNER PRIOR TO ORDERING (MUST EXACTLY FIT EXISTING LOCATIONS IN CONCRETE WALL).

GENERAL NOTES

- ALL LAMPS INCLUDING SPARES SHALL BE MANUFACTURED BY OSRAM/SYLVANIA, VENTURE, PHILIPS OR G.E. UNLESS SPECIFICALLY NOTED OTHERWISE. ALL LAMPS (INCLUDING SPARES) OF EACH TYPE, STYLE, AND WATTAGE SHALL BE FROM ONE (1) SINGLE MANUFACTURING BATCH TO ENSURE UNIFORM VISUAL APPEARANCE WHEN ENERGIZED. LAMPS DIFFERING IN VISUAL APPEARANCE WITH REGARD TO COLOR TEMPERATURE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. PRIOR TO PROJECT CLOSE-OUT CONTRACTOR SHALL PROVIDE SPARE LAMPS IN ORIGINAL CARTONS TO OWNER. QUANTITIES SHALL BE 10% OR 6 (WHICHEVER IS GREATER) OF EACH TYPE, STYLE AND WATTAGE USED.

FIXTURE NOTES

- CATALOG NUMBERS ARE BASED ON VENDOR INFORMATION, SALES LITERATURE AND PHOTOMETRIC DATA ON HAND AT TIME OF PROJECT DESIGN BY TURPIN & RATTAN AND ARE INTENDED TO CONVEY THE FEATURES/PERFORMANCE REQUIRED EACH FIXTURE MUST BE PROVIDED COMPLETE WITH ALL FITTINGS AS APPROPRIATE FOR PROPER MOUNTING AT THE LOCATION INDICATED. SUBMITTALS BY THE CONTRACTOR FOR APPROVAL ARE REQUIRED PER THE SPECIFICATIONS.
- ALL AUTOMATIC OUTDOOR LIGHTING CONTROL DEVICES MUST BE CERTIFIED BY THE MANUFACTURER TO THE ENERGY COMMISSION BEFORE THEY CAN BE INSTALLED. THE CERTIFICATION REQUIREMENTS APPLY TO ANY AND ALL AUTOMATIC TIME SWITCH CONTROL DEVICE, OCCUPANT SENSOR OR AUTOMATIC DAYLIGHTING CONTROL DEVICE.
- PERMANENT FACTORY-INSTALLED LABELS SHALL BE APPLIED TO ALL LUMINARIES EQUIPMENT AND SYSTEMS AS REQUIRED BY SECTION 130 (C) OF THE 2008 CALIFORNIA ENERGY CODE.
- ALL PERMANENTLY INSTALLED OUTDOOR LUMINARIES EMPLOYING LAMPS RATED OVER 100 WATTS SHALL EITHER HAVE A LAMP EFFICACY OF AT LEAST 60 LUMENS PER WATT OR BE CONTROLLED BY A MOTION SENSOR.
- ALL OUTDOOR LUMINARIES THAT USE LAMPS RATED GREATER THAN 175 WATTS AND LOCATED IN HARDSCAPE AREAS INCLUDING PARKING LOTS, BUILDING ENTRANCES, SALES AND NON-SALES, CANOPIES, AND ALL OUTDOOR SALES AREAS SHALL BE DESIGNED "CUTOFF" FOR LIGHT DISTRIBUTION.
- ALL PERMANENTLY INSTALLED OUTDOOR LIGHTING SHALL BE CONTROLLED BY A PHOTO-CONTROL DEVICE OR ASTRONOMICAL TIME SWITCH THAT AUTOMATICALLY TURNS OFF THE OUTDOOR LIGHTING WHEN DAYLIGHT IS AVAILABLE.
- CERTIFICATE OF ACCEPTANCE FORM LTG-1-A AND ALL OTHER RELATED TITLE 24 ACCEPTANCE DOCUMENTS SHALL BE SUBMITTED TO THE FIELD INSPECTOR DURING CONSTRUCTION. A CERTIFICATE OF OCCUPANCY WILL NOT BE ISSUED UNTIL ALL THESE COMPLETED FORMS ARE SUBMITTED AND APPROVED.

E2

FUNDING CIP/SAP		SPEC. NO.		E2
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
LIGHT FIXTURE SCHEDULE				
CITY OF SAN DIEGO, CALIFORNIA SHEET 45 OF 66 SHEETS			V.B.S. B-0095E, B-1000B B-10010	
APPROVED BY: <i>[Signature]</i> CITY ENGINEER		DATE: 3/9/12		SECTION HEAD
DESIGNED BY: DSD BACKCHECK	BY: MIA	APPROVED: 12/08/2011	DATE: 12/08/2011	FILMED
CHECKED BY: CONSTRUCTION ENGINEER		INSPECTOR		PROJECT MANAGER
AS-BUILTS		CONTRACTOR		CCS27 COORDINATE
CONTRACTOR		DATE STARTED		CCS83 COORDINATE
INSPECTOR		DATE COMPLETED		36392-45-D

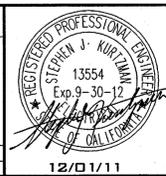
CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

TURPIN & RATTAN
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619 466 7624 FAX 666 76233
E-MAIL: ENGINEER@TRRSDO.COM

SCALE: NONE HORIZONTAL: NONE VERTICAL: NONE

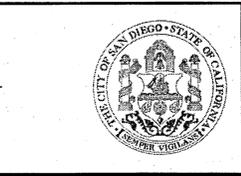
TREI # 09292.00



CITY OF SAN DIEGO

PUBLIC WORKS PROJECT

12/01/11



WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY: *[Signature]*
CITY ENGINEER

CHECKED BY: CONSTRUCTION ENGINEER

INSPECTOR

POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

Certificate of Compliance (Page 1 of 4) **OLTG-1C**
 Project Name: SAN DIEGO POLICE HEADQUARTERS Date: MARCH 2011
 Project Address: 1401 BROADWAY SAN DIEGO, CA 92101 Total Hardscape Illuminated Area: 52264

General Information
 Phase of Construction: New Construction Addition Alteration

Documentation Author's Declaration Statement
 I certify that this Certificate of Compliance documentation is accurate and complete.

Name: TED KELLER Signature: [Signature] Date: Dec 6 2011
 Company: TURPIN AND RATTAN ENGINEERING, INC. IF Applicable: CEA # CEPE # Phone: (619)466-8224
 Address: 4719 PALM AVE City/State/Zip: LA MESA, CA 91941

Principal Lighting Designer's Declaration Statement
 I am eligible under Division 3 of the California Business and Professions Code to accept responsibility for the lighting design.
 This Certificate of Compliance identifies the lighting features and performance specifications required for compliance with Title 24, Pages 1 and 6 of the California Code of Regulations.
 The design features represented on the Certificate of Compliance are consistent with the information provided to document this design on the other applicable compliance forms, worksheets, calculations, plans, and specifications submitted to the enforcement agency for approval with this building permit application.

Name: STEPHEN J. KURTZMAN Signature: [Signature] Phone: (619)466-5224
 Company: TURPIN AND RATTAN ENGINEERING, INC. License # 13554
 Address: 4719 PALM AVE City/State/Zip: LA MESA, CA 91941 Date: 12/6/11

Principal Lighting Designer's Declaration
 I certify that this Certificate of Compliance documentation is accurate and complete, and accounts for all outdoor lighting power, including building mounted, pole-mounted, as well as all other outdoor lighting designed for the site, and that Additional Lighting Power Allowances for Specific Applications or Additional Lighting Power Allowances for Ordinance Requirements have not been counted more than one time for the same area, in accordance with Section 147 of the Standards.

Outdoor Lighting Mandatory Measures
 Indicate location on building plans of Mandatory Measures Note Block: E3

LIGHTING COMPLIANCE FORMS & WORKSHEETS (check box if worksheet is included)
 For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, please refer to the Nonresidential Manual published by the California Energy Commission.
 OLTG-1C Certificate of Compliance. All 4 pages required on plans for all submittals.
 OLTG-2C (Page 1 of 3) Lighting Wattage Allowances for General Hardscape, Sales Frontage, or Ornamental Lighting. Optional on plans.
 OLTG-2C (Page 2 of 3) Lighting Wattage Allowances per Application or Per Area. Optional on plans.
 OLTG-2C (Page 3 of 3) Additional Lighting Power Allowances for Ordinance Requirements. Optional on plans

Certificate of Compliance (Page 2 of 4) **OLTG-1C**
COMPLIANCE FIXTURE / LIGHTING CONTROL SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST
 Project Name: SAN DIEGO POLICE HEADQUARTERS Date: MARCH 2011

INSTALLATION CERTIFICATE, OLTG-1-INST (Retain a copy and verify form is completed and signed.) Field Inspection
CERTIFICATE OF ACCEPTANCE, OLTG-2A (Retain a copy and verify form is completed and signed.) Field Inspection

Luminaire Schedule		Installed Watts									
A	B	C	D	E	F	G	H	I	J		
Name or Item Tag	Luminaire Description ¹ See footnote below	Control Designation	Watts per Luminaire	Special Features	How wattage was determined	Number of Luminaires	Number of Watts (G x C)	Pass	Fail	Field Inspector ²	
A	1 LAMP LOW LEVEL COMPACT FLUORESCENT	FULL	28			38	1064				
B	1 LAMP PULSE START METAL HALIDE AREA	FULL	190			13	2470				
C	HPS STEP LIGHT	FULL	65			9	585				
D	HPS STEP LIGHT	FULL	165			10	1650				
Enter total into OLTG-1C, Page 4 of 4; Row H; Total Installed Watts: 5769											

EXEMPT LUMINAIRES Field Inspection
 Name or Symbol Description of exempt luminaires in accordance with § 147
 TYPE A LIGHTING FOR STAIRS AND RAMPS

MANDATORY CONTROLS		Field Inspection <input type="checkbox"/>	
#	Description	#	Description
1	EXISTING TIME CLOCK	-	

SPECIAL FEATURES INSPECTION CHECKLIST (See Page 2 of 4 of OLTG-1C)
 The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification. The local enforcement agency determines the adequacy of the justification and documentation submitted.

Filed Inspector Notes or Discrepancies:

Certificate of Compliance (Page 3 of 4) **OLTG-1C**
 Project Name: SAN DIEGO POLICE HEADQUARTERS Date: MARCH 2011

A. OUTDOOR LIGHTING ZONE
 OUTDOOR LIGHTING ZONE: OLZ 1 OLZ 2 OLZ 3 OLZ 4
 Is the Outdoor Lighting Zone: Default in accordance with § 10-114, or Amended by JHA

Complete the information below if the default Outdoor Lighting Zone has been amended by the local jurisdiction having authority (JHA).
 The site is a government designated park, recreation area, wildlife preserve, or portion thereof, and has been designated as LZ2 or LZ3, in accordance with Table 10-114-A, because the site is contained within such a zone.
 The local jurisdiction having authority has officially adopted a change to the State Default Lighting Zone and has notified the Energy Commission by providing the materials required in § 10-114(d) to the Executive Director.
 The adopted change is posted on the Energy Commission website.

B. ADDITIONAL LIGHTING POWER ALLOWANCE FOR ORDINANCE REQUIREMENTS
 Are additional lighting power allowance for ordinance in Table 147-C used? Yes No
 Complete the information below if additional lighting power allowances for ordinance requirements are used:
 The local jurisdiction having authority has officially adopted specific outdoor light levels, which are expressed as average or minimum footcandle levels, by following a public process that allowed for formal public notification, review, and comment about the proposed change.
 The local jurisdiction having authority which adopted specific outdoor light levels and has notified the Commission by providing the following materials required § 10-114(f) to the Executive Director.

C. ACCEPTANCE FORMS
 Required Acceptance Tests
Designer:
 This form is to be used by the designer and attached to the plans. Listed below is the acceptance test for the Lighting system, LTG-2A. The designer is required to check the acceptance tests and list all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance. If all the lighting system or control of a certain type requires a test, let the different lighting and the number of systems. The NA7 Section in the Appendix of the Nonresidential Reference Appendices Manual describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately. Forms can be grouped by type of Luminaire controlled.

Enforcement Agency:
 Systems Acceptance. Before Occupancy Permit is granted for a newly constructed building or space or when ever new lighting system with controls is installed in the building or space shall be certified as meeting the Acceptance Requirements. The LTG-2A form is not considered a complete form and is not to be accepted by the enforcement agency unless the boxes are checked and/or filled and signed. In addition, a Certificate of Acceptance forms shall be submitted to the enforcement agency that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of § 10-103(b) of Title 24 Part 6. The field inspector must receive the properly filled out and signed forms before the building can receive final occupancy. A copy of the LTG-2A for each different lighting luminaire control(s) must be provided by the owner of the building for their records.

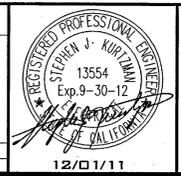
Certificate of Acceptance OLTG-2A ¹				
Equipment Requiring Testing	Description	Number of Luminaires or Controls	Location	Outdoor Lighting Acceptance Tests
EXISTING TIME CLOCK	TYPE A, B, C, D	1	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

1. Insert: OMS for Outdoor Motion Sensor; OLSC for Outdoor Lighting Shutoff Controls; OP for Outdoor Photocontrol; ATS for Astronomical Time Switch; and, STS for Standard (non-astronomical) Time Switch acceptance.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NDL

CONSULTANT
 TURPIN & RATTAN ENGINEERING, INC.
 ENGINEERING ARCHITECTS
 4719 PALM AVENUE
 LA MESA, CA 91941-5221
 619 / 466 / 6224 FAX 466 / 6223
 EMAIL: ENGINEER@TRRNG.COM

SCALE: NONE HORIZONTAL: NONE VERTICAL: NONE
 NO SCALE NO SCALE
 12/01/11



CITY OF SAN DIEGO PUBLIC WORKS PROJECT

WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY: [Signature]
 FOR CITY ENGINEER
 CHECKED BY: [Signature]
 CONSTRUCTION ENGINEER
 CHECKED BY: [Signature]
 INSPECTOR

DESCRIPTION	BY	APPROVED	DATE	FILMED
DSD BACKCHECK	MDA		12/08/2011	
AS-BUILTS				

FUNDING CIP/SAP: [] SPEC. NDL: [] E3

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

TITLE 24 - EXTERIOR

CITY OF SAN DIEGO, CALIFORNIA W.B.S. B-00952, B-10008
 SHEET 46 OF 66 SHEETS B-10010

FOR CITY ENGINEER: [Signature] DATE: 3/9/12
 SECTION HEAD: [Signature]
 PROJECT MANAGER: [Signature]
 CCS27 COORDINATOR: [Signature]
 CCS83 COORDINATOR: [Signature]

CONTRACTOR INSPECTOR: [Signature] DATE STARTED: [] DATE COMPLETED: []
 36392-46-D

POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

CERTIFICATE OF COMPLIANCE (Page 4 of 4) OLTG-1C			
Project Name: SAN DIEGO POLICE HEADQUARTERS	Date: MARCH 2011		
ALLOWED AND INSTALLED OUTDOOR LIGHTING POWER			
A	Lighting power allowance for general hardscape (from OLTG-2C Page 1 of 3)	Lighting Wattle Power Allowance	7492
B	Specific application lighting wattle allowance per unit length (from OLTG-2C Page 1 of 3)		
C	Specific application wattle allowance for ornamental lighting (from OLTG-2C Page 1 of 3)		
D	Specific application wattle allowance per application (from OLTG-2C Page 2 of 3)		
E	Specific application lighting wattle allowance per area (from OLTG-2C Page 2 of 3)		
F	Additional lighting power allowance for ordinance requirements (from OLTG-2C Page 3 of 3)		
G	Total Allowed Wattle = Sum of rows A through F:		7492
H	Total Installed Watts (from Luminaire Schedule, (from OLTG-1C (Page 2 of 4)		5769
Complies if Installed Wattle in row H is less than or equal to the Total Installed Wattle in row G		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

2008 Nonresidential Compliance Forms August 2009

OUTDOOR LIGHTING WORKSHEET (Page 1 of 3) OLTG-2C							
Project Name: SAN DIEGO POLICE HEADQUARTERS				Date: MARCH 2011			
A. LIGHTING POWER ALLOWANCE FOR GENERAL HARDSCAPE							
AREA WATTLE ALLOWANCE (AWA)		LINEAR WATTLE ALLOWANCE (LWA)			INITIAL WATTLE ALLOWANCE	TOTAL GENERAL HARDSCAPE LIGHTING ALLOWANCE	
A	B	C	D	E	F	G	H
ILLUMINATED HARDSCAPE AREA	AWA PER SQUARE FOOT	AWA (A X B)	PERIMETER LENGTH OF GENERAL HARDSCAPE	LWA PER LINEAR FOOT	LWA (D X E)	IWA (WATTS)	C + F + G
52264	0.092	4808	2080	0.92	1914	770	7492
Enter total into OLTG-1C; Page 4 of 4; Row A; Lighting Power Allowance for General Hardscape:							7492
<input type="checkbox"/> Yes: AWA, LWA and IWA from Table 147-A was used as appropriate for the Outdoor Lighting Zone							
B. SPECIFIC APPLICATION LIGHTING WATTLE ALLOWANCE PER UNIT LENGTH (Available only for sales frontage)							
DETERMINE WATTLE ALLOWANCE				LUMINAIRE TYPE		DESIGN WATTS	
A	B	C	D	E	F	G	H
Specific Lighting Application	Linear Feet of Frontage	Sales Frontage allowance for OLZ (watts per ft)	Wattle Allowance (B x C)	Name or Symbol	Luminaire Type	Luminaire Quantity	Watts per Luminaire
Enter total into OLTG-1C; Page 4 of 4; Row B; Specific Application Lighting Wattle Allowance Per Unit Length							
C. SPECIFIC APPLICATION LIGHTING WATTLE ALLOWANCE FOR ORNAMENTAL LIGHTING							
DETERMINE WATTLE ALLOWANCE				LUMINAIRE TYPE		DESIGN WATTS	
A	B	C	D	E	F	G	H
Specific Lighting Application	Square feet of Hardscape	Ornamental Lighting Allowance for OLZ (watts per ft)	Wattle Allowance (B x C)	Name or Symbol	Luminaire Type	Luminaire Quantity	Watts per Luminaire
Enter total into OLTG-1C; Page 4 of 4; Row C; Specific Application Wattle Allowance for Ornamental Lighting							

2008 Nonresidential Compliance Forms August 2009

OUTDOOR LIGHTING MANDATORY MEASURES

- INSTALLED LIGHTING POWER-**
DETERMINED IN ACCORDANCE WITH SECTION #130 (C) 1.
- CONTROLS FOR LIGHTING SYSTEMS-**
ALL OUTDOOR LUMINAIRES WITH LAMPS RATED OVER 100 WATTS HAVE AN EFFICACY OF AT LEAST 60 LUMENS PER WATT.
- OUTDOOR LUMINAIRE CUTOFF-**
ALL OUTDOOR LUMINAIRES WITH LAMPS RATED OVER 175 WATTS ARE FULL CUTOFF TYPE.
- CONTROLS TO TURN LIGHTS OFF DURING DAYLIGHT HOURS-**
LIGHTS ARE CONTROLLED VIA EXISTING TIME CLOCK AND LIGHTING CONTACTORS.
- CONTROLS TO PROVIDE THE OPTION TO TURN OFF A PORTION OF THE OUTDOOR LIGHTS-**
ALL OUTDOOR LIGHTING IS CONTROLLED BY EXISTING TIME CLOCK.

NOTES
ALL EXISTING PHOTOCELLS, TIME CLOCKS, AND LIGHTING CONTACTORS CONTROLLING ALL EXTERIOR LIGHTING TO BE RE-USED. NO CONTROL DEVICE COMMISSIONING REQUIRED. NO TITLE 24 ACCEPTANCE FORMS REQUIRED FOR THIS PROJECT.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

TURPIN & RATTAN
 ENGINEERS, INC.
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA MESA, CA 91941-5221
 619.786.7824 FAX 619.786.7833
 E-MAIL: ENGINEER@TRUSO.COM

SCALE: NONE HORIZONTAL: NO SCALE VERTICAL: NO SCALE


 REGISTERED PROFESSIONAL ENGINEER
 STEPHEN J. KURJAN
 13554
 Exp. 9-30-12
 12/01/11

CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:	FOR CITY ENGINEER	CHECKED BY:	CONSTRUCTION ENGINEER
INSPECTOR			

DESCRIPTION	BY	APPROVED	DATE	FILMED
DSB BACKCHECK	MDA		12/08/2011	

AS-BUILTS
 CONTRACTOR: DATE STARTED: DATE COMPLETED: **36392-47-D**

FUNDING CIP/SAP: _____ SPEC. NO.: _____ E4

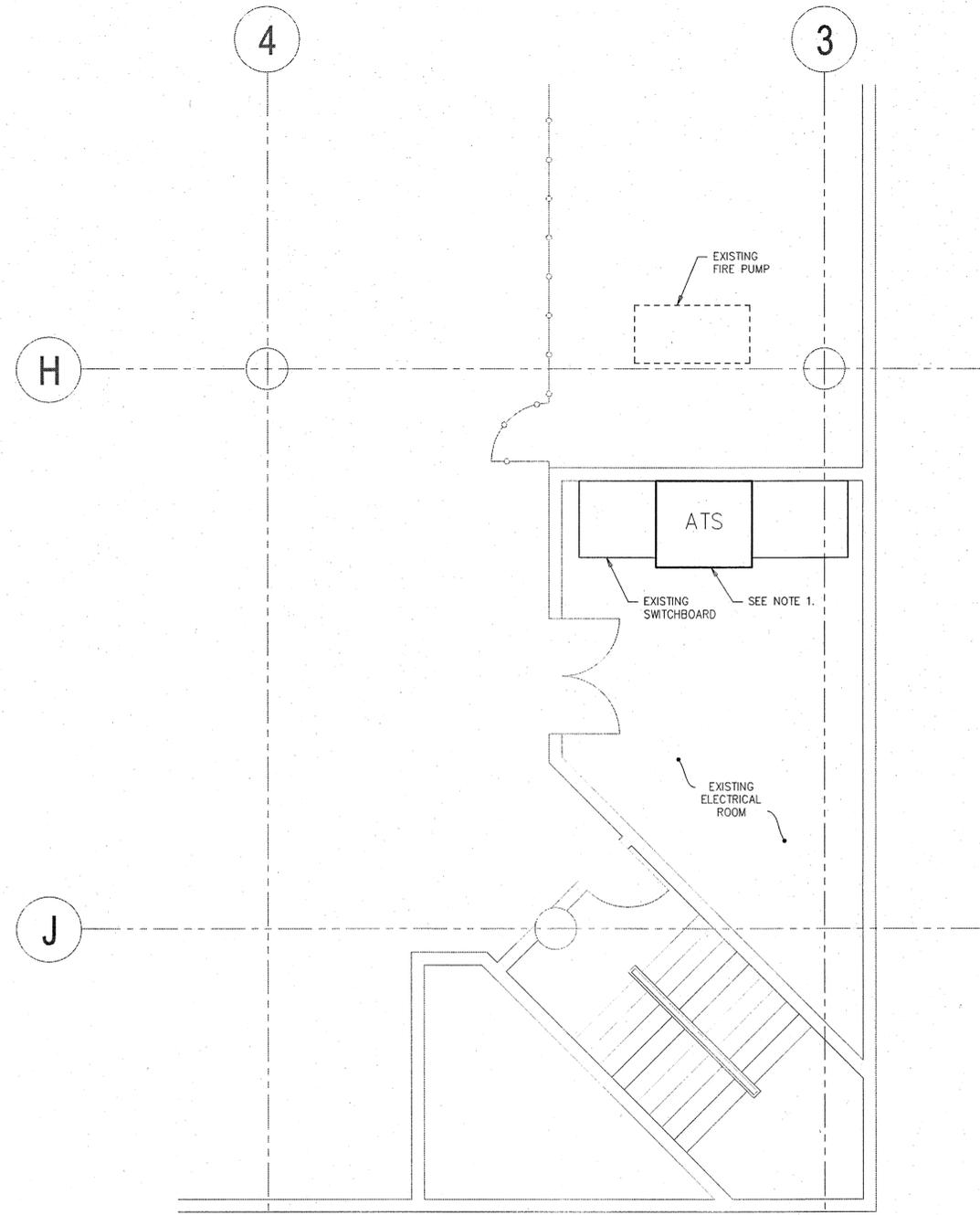
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

TITLE 24 - EXTERIOR

CITY OF SAN DIEGO, CALIFORNIA
 SHEET 47 OF 66 SHEETS

W.B.S. B-00952, B-10008, B-10010

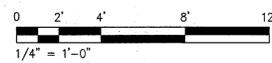
FOR CITY ENGINEER: _____ DATE: 3/9/12
 SECTION HEAD: _____
 PROJECT MANAGER: _____
 CCS27 COORDINATE: _____
 CCS83 COORDINATE: _____



- GENERAL NOTES**
1. THE EXISTING AUTOMATIC TRANSFER SWITCH (ATS) IS PROVEN TO BE UNRELIABLE. IT IS TO BE REPLACED.
 2. IT IS PERHAPS THE SINGLE MOST CRITICAL COMPONENT IN THE ENTIRE BUILDING-WIDE ELECTRICAL DISTRIBUTION SYSTEM. SHOULD IT EVER FAIL OR BECOME DESTROYED, THE ENTIRE BUILDING WILL BE WITHOUT POWER UNTIL IT IS REPLACED.
 3. IT WAS MANUFACTURED BY RUSELECTRIC COMPANY. THE NEAREST LOCAL SERVICE GROUP IS LOCATED IN LOS ANGELES, CALIFORNIA.
 4. THE POINT OF CONTACT IS:
DENNIS DON AND ASSOCIATES
125 EAST BAKER ST, SUITE 175
COSTA MESA, CA 92626
ATTENTION: MR. DAVE HAHN
PHONE (714)957-0844
 5. THE POLICE HEADQUARTERS BUILDING WILL HAVE TO BE EVACUATED DURING THE TIME THE AUTOMATIC TRANSFER SWITCH IS BEING REPLACED AND TESTED. THE CONTRACTOR SHALL COORDINATE THIS PROJECT WITH THE POLICE HEADQUARTERS TO PROVIDE A MINIMUM OF FOUR (4) WEEKS NOTICE.
 6. THE EXISTING AUTOMATIC TRANSFER SWITCH ENCLOSURE SHALL REMAIN INTACT.

LARGE SCALE P1 LEVEL ELECTRICAL ROOM PLAN

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



FUNDING CIP/SAP		SPEC. NO.		E7	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES					
PROJECT "C": REPLACE EXISTING ATS					
CITY OF SAN DIEGO, CALIFORNIA SHEET 49 OF 66 SHEETS				V.B.S. B-00952, B-10008 B-10010	
APPROVED BY: <i>[Signature]</i>		DATE: 3/9/12		SECTION HEAD: <i>[Signature]</i>	
FOR CITY ENGINEER		DATE		PROJECT MANAGER	
DESCRIPTION	BY	APPROVED	DATE	FILMED	
USD BACKCHECK	MOA		12/08/2011		
CONSTRUCTION ENGINEER		DATE		COORDINATE	
CHECKED BY:		DATE		COORDINATE	
INSPECTOR		DATE STARTED		36392-49-D	
		DATE COMPLETED			

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

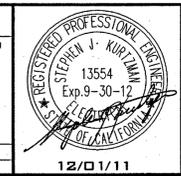
CONSULTANT

TREI # 09292.00

TURPIN & RATTAN
ENGINEERING, INC.

CONSULTING ENGINEERS
4719 PALM AVENUE
LA MESA, CA 91941-5221
619 / 466 / 6224 FAX 666 / 6233
E-MAIL: ENGINEERS@TRCOO.COM

SCALE: 1/4" = 1'-0"
HORIZONTAL: NO SCALE
VERTICAL: NO SCALE



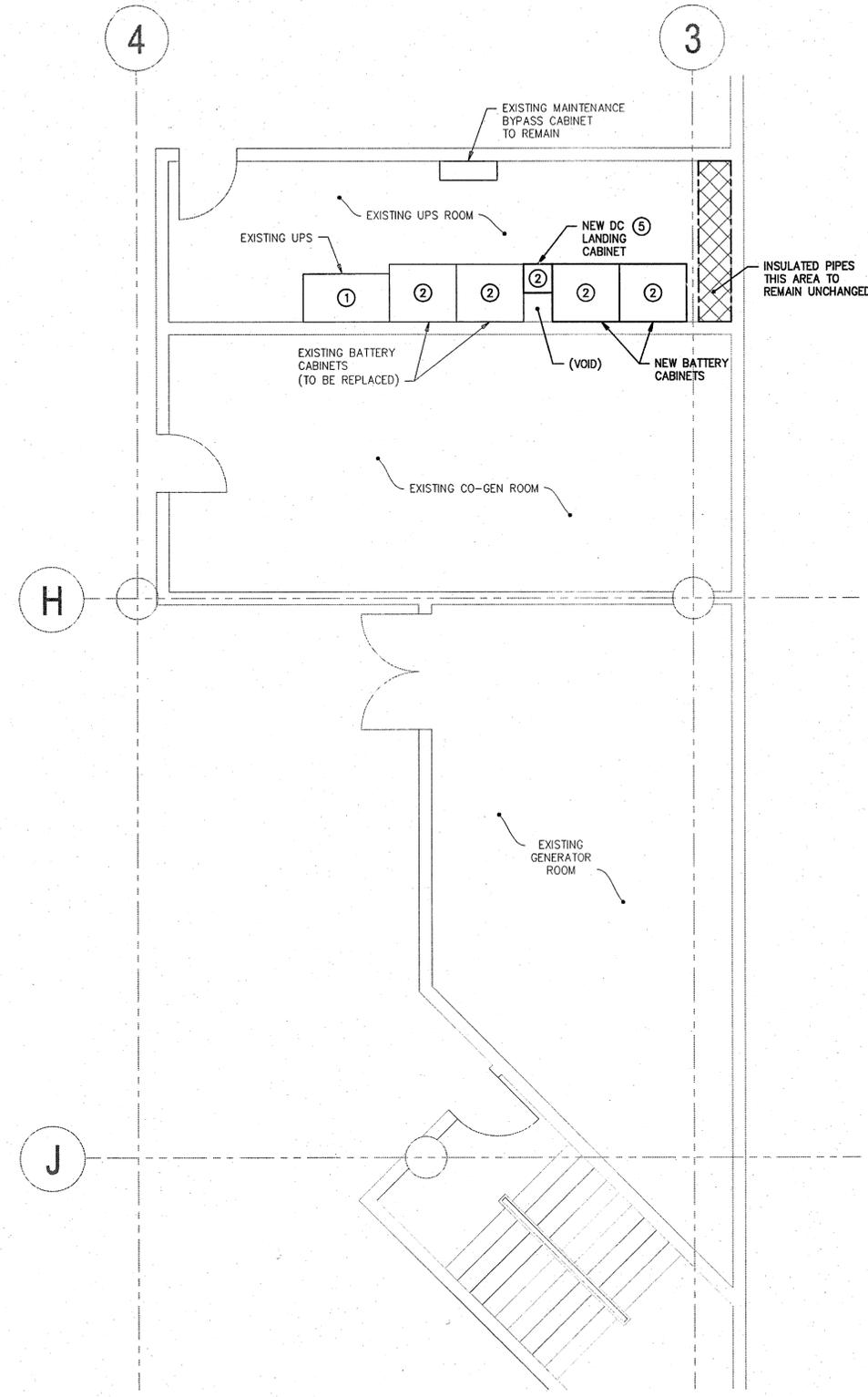
CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY: _____
FOR CITY ENGINEER
CHECKED BY: _____
CONSTRUCTION ENGINEER
CHECKED BY: _____
INSPECTOR



KEYNOTES

- ① UPS INVERTER CABINET TO REMAIN UNCHANGED.
- ② THIS PROJECT INVOLVES THE REPLACEMENT OF THE EXISTING BATTERIES (60 TOTAL), THE ADDITION OF A "DC LANDING CABINET", AND THE ADDITION OF A SECOND SET OF BATTERIES TO MATCH THE OTHERS. MISCELLANEOUS DC WIRING WILL ALSO BE REQUIRED FROM THE BATTERY STRINGS TO THE DC CIRCUIT BREAKERS IN THE LANDING CABINET, AND OVER TO THE UPS.
- ③ THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION OF HIS PROJECT. THIS WORK WILL NOT AFFECT DAY TO DAY OPERATIONS OF THE FACILITY.
- ④ IT SHOULD BE NOTED HOWEVER, THAT THE UPS WILL HAVE TO BE PLACED INTO A MAINTENANCE BYPASS POSITION DURING BATTERY REPLACEMENT AND ADDITIONS. THAT MEANS THAT IF A UTILITY OUTAGE WERE TO OCCUR DURING THAT TIME, POWER TO ALL UPS LOADS INCLUDING THE 911 CALL CENTER WOULD BE INTERRUPTED FOR APPROXIMATELY 10 SECONDS, TWICE (ONCE WHEN UTILITY POWER IS LOST AND THE GENERATOR STARTS, AND AGAIN UPON RESTORATION BACK TO UTILITY). CONTRACTOR SHALL CAREFULLY COORDINATE ALL POSSIBLE SHUTDOWN WORK WITH POLICE HEADQUARTERS PERSONNEL TO PROVIDE A MINIMUM OF 14 DAYS ADVANCE NOTICE.
- ⑤ PROVIDE P1000 UNISTRUT STAND FOR DC LANDING CABINET. ANCHOR TO FLOOR USING FOUR (4) 4" LONG, 1/2" DIAMETER EXPANSION ANCHORS.

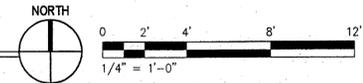
NOTE: PLEASE REFER TO PROJECT "M" ON DRAWING E16 THAT SUPPORTS THE INSTALLATION OF A UPS BATTERY MANAGEMENT SYSTEM.
 THE PROJECT WILL REQUIRE SPECIAL SPADE TYPE TERMINATIONS BE INSTALLED ON EVERY POSITIVE BATTERY POST AND ONE (1) NEGATIVE BATTERY POST. THE BMS INSTALLING CONTRACTOR SHALL BE CONTACTED BY THIS CONTRACTOR TO SUPPLY THOSE 121 SPADE TERMINALS.
 DURING BATTERY REPLACEMENT UNDER THIS PROJECT, ALL SPADE TERMINALS SHALL BE INSTALLED AS OUTLINED ON DRAWING E16, IN PREPARATION FOR THAT FORTHCOMING PROJECT.

THE CURRENT UPS MAINTENANCE CONTRACT IS HELD BY COMPUTER PROJECTION TECHNOLOGY, INC. THEY ARE ALL ABLE TO OFFER A 'TURN-KEY' PROJECT TO DO ALL THIS WORK.
 CONTACT: MR. MIKE MURPHY
 (800) 841-0789

APPROXIMATE EQUIPMENT WEIGHTS ARE AS FOLLOWS:
 DC LANDING CABINET = 125 LBS
 BATTERY CABINET(S) = 2850 LBS
 CONTRACTOR SHALL SUBMIT FINAL RESPECTIVE EQUIPMENT WEIGHTS AND ANCHORAGE/METHOD OF CONNECTION TO BUILDING STRUCTURE TO CITY DSD STRUCTURAL REVIEWER FOR APPROVAL PRIOR TO INSTALLATION.

PROVIDE SEISMIC ANCHORING FOR ALL NEW CABINETS INSTALLED UNDER THIS PROJECT.

PARTIAL P-2 LEVEL LARGE SCALE PLAN
 SCALE: 1/4" = 1'-0"



E8

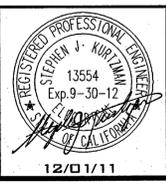
FUNDING CIP/SAP	SPEC. NO.	E8	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES			
PROJECT "D": REPLACE UPS BATTERIES			
CITY OF SAN DIEGO, CALIFORNIA		V.B.S. B-00952, B-10008 B-10010	
SHEET 50 OF 66 SHEETS			
APPROVED BY:	DATE	FILED	SECTION HEAD
FOR CITY ENGINEER	3/9/12		
DESCRIPTION	BY	APPROVED	DATE
DSD BACKCHECK	MDA		12/08/2011
AS-BUILTS			
CONTRACTOR	DATE STARTED		
INSPECTOR	DATE COMPLETED		
			36392-50-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

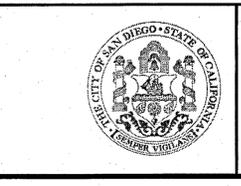
CONSULTANT
TURPIN & RATTAN
 ENGINEERS, INC.
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA BREA, CA 91041-9221
 610 / 466 / 6224 FAX 466 / 6233
 E-MAIL: ENGINEER@TRR180.COM

TREI # 09292.00

SCALE: 1/4" = 1'-0"
 HORIZONTAL: NO SCALE
 VERTICAL: NO SCALE

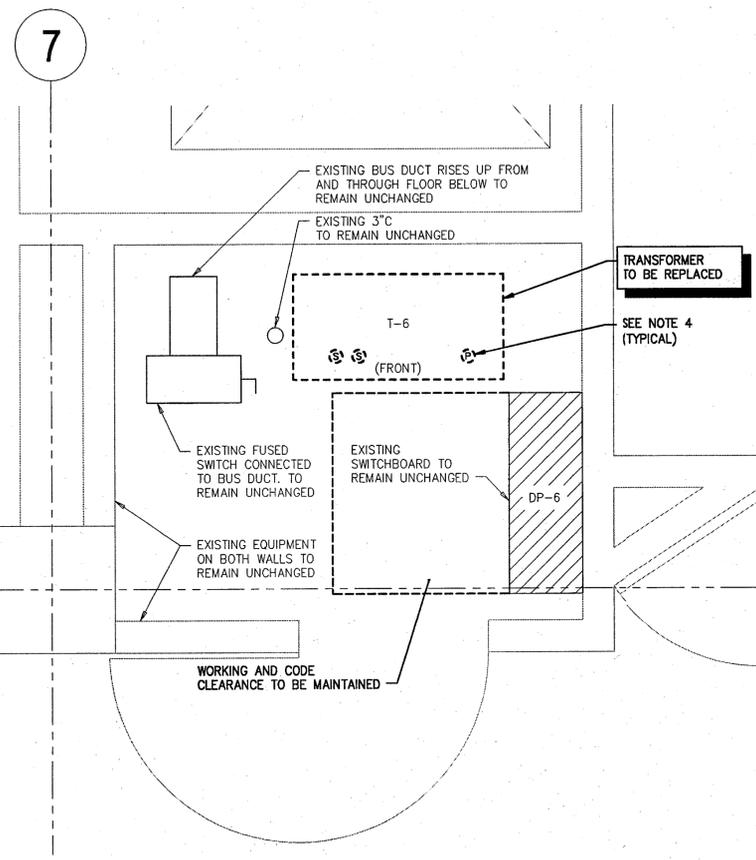


CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:
 FOR CITY ENGINEER
 CHECKED BY:
 CONSTRUCTION ENGINEER
 CHECKED BY:
 INSPECTOR



6th FLOOR ELECTRICAL ROOM LARGE SCALE PLAN
 SCALE: 3/4" = 1'-0"
 0 1' 2' 4'
 3/4" = 1'-0"
 NORTH
 1 E9

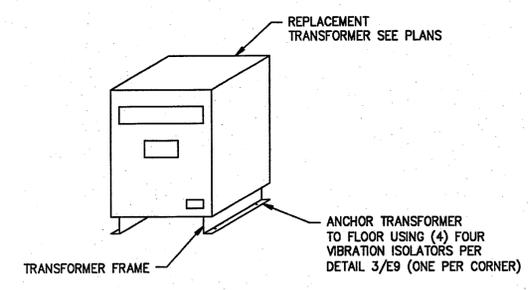
GENERAL NOTES

- CONTRACTOR SHALL COORDINATE ALL WORK WITH OWNER PRIOR TO DE-ENERGIZING ANY EQUIPMENT.
- THE CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING 225 KVA DRY TYPE TRANSFORMER. REPLACE IN KIND WITH NEW 225 KVA 480-120/208V, 3Ø, 4W TRANSFORMER. FOR MOUNTING DETAILS SEE 2/E9. REMAKE ALL CONNECTIONS, AND PROVIDE NEW LINE AND LOAD FEEDERS IF NECESSARY. TEST AND ENERGIZE EQUIPMENT.
 - PROVIDE NEW PERMANENT NAMEPLATE PER DETAIL 1/E1.
 - NOTE: OVERALL TRANSFORMER FOOTPRINT DIMENSIONS CANNOT EXCEED 40" WIDE X 22" DEEP OVERALL. TRANSFORMER MAY HAVE TO BE CUSTOM MADE TO FIT AVAILABLE SPACE. CONTACT ALLEN POWER DISTRIBUTION & CONTROL, INC. MR. STACY ALLEN. PHONE (760) 297-1081 EXT. 502 FOR ORDERING OF CUSTOM TRANSFORMER IF REQUIRED.
 - PRIMARY AND SECONDARY FEEDERS ENTER TRANSFORMER FROM BELOW (THROUGH FLOOR).
 - FOR TRANSFORMER MOUNTING ON THE FLOOR SEE DETAIL 2/E9.
 - TRANSFORMER SPECIFICATIONS ARE AS FOLLOWS:
 - 225KVA, 3 PHASE, 60Hz NEMA 2 ENCLOSED TRANSFORMER.
 - 480V DELTA PRIMARY WITH ±2 X 2 1/2% F.C. TAPS.
 - 208Y/120V, 3 PHASE, 4 WIRE SECONDARY.
 - COPPER WINDINGS.
 - 150°C RISE, WITH 220°C INSULATION.
 - 3db BELOW NEMA ST-20 STANDARD NOISE RATING.
 - CONNECTIONS: BOTTOM FEEDS.
 - TERMINATIONS: FRONT, NEMA TP-1.
 - UL LISTED.

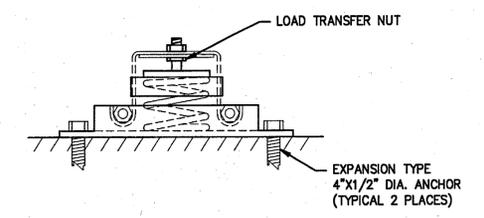
MAX. TRANSFORMER WEIGHT	ISOLATOR CAT. NO.
1200 LBS	QSJ - 415
600 LBS	QSJ - 224
480 LBS	QSJ - 143
310 LBS	QSJ - 106
230 LBS	QSJ - 79

NOTE

ISOLATORS SHALL BE CALIFORNIA DYNAMICS CORP QSJ SERIES (QSHPD PRE-APPROVAL #R-0070) OR AN APPROVED EQUAL.



TRANSFORMER ANCHORING DETAIL
 NO SCALE
 2 E9

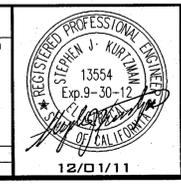


TRANSFORMER VIBRATION ISOLATOR
 NO SCALE
 3 E9

APPROXIMATE EQUIPMENT WEIGHTS ARE AS FOLLOWS:
 TRANSFORMER = 1175 LBS
 CONTRACTOR SHALL SUBMIT FINAL RESPECTIVE EQUIPMENT WEIGHTS AND ANCHORAGE/METHOD OF CONNECTION TO BUILDING STRUCTURE TO CITY DSD STRUCTURAL REVIEWER FOR APPROVAL PRIOR TO INSTALLATION.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 TURPIN & RATTAN
 ENGINEERING, INC.
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA MECA, CA 91941-5221
 619 / 466 / 6224 FAX 466 / 6233
 E-MAIL: ENGINEER@TRCIBO.COM
 SCALE: HORIZONTAL NO SCALE
 3/4"=1'-0" VERTICAL NO SCALE



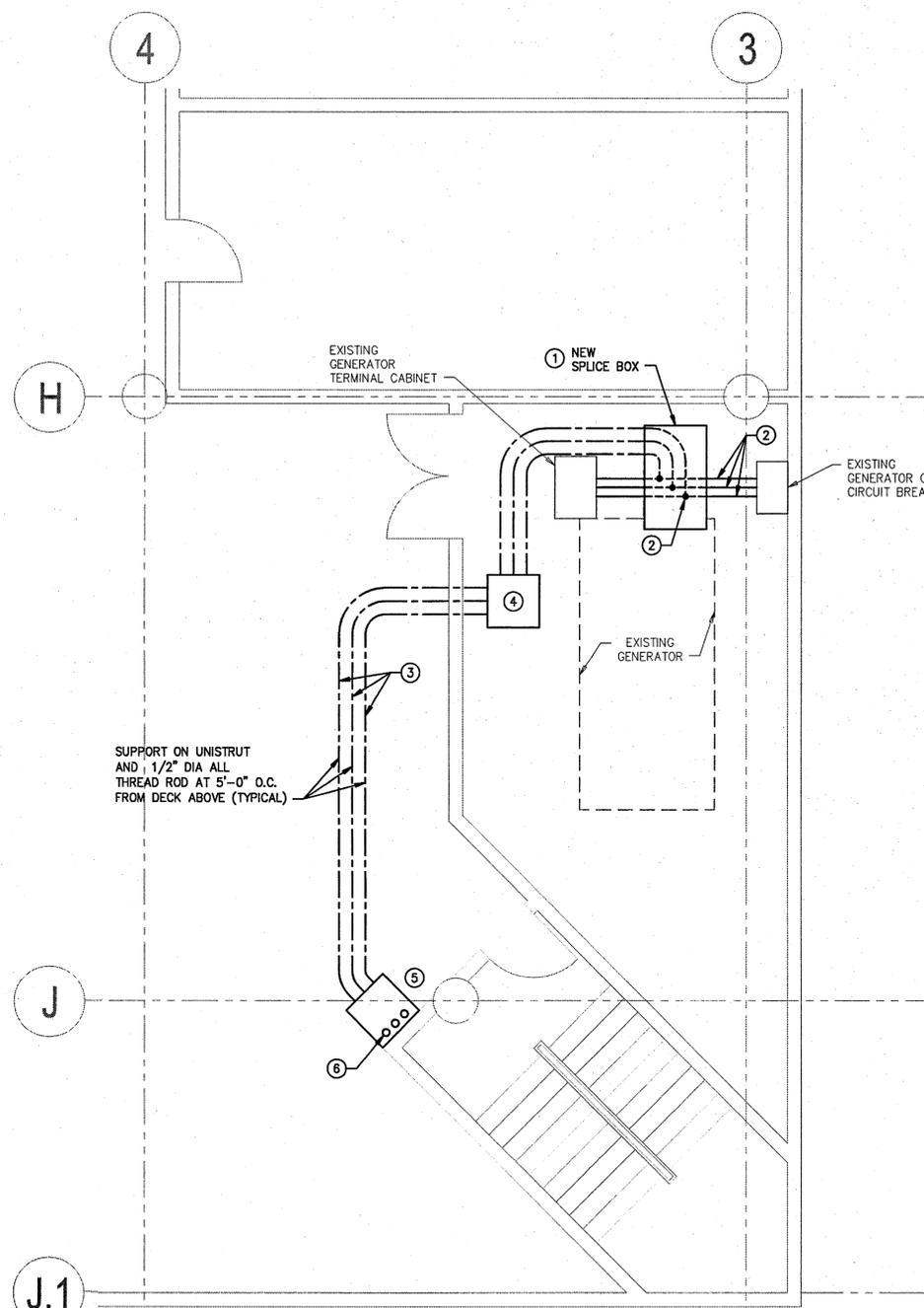
CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:	FOR CITY ENGINEER
CHECKED BY:	CONSTRUCTION ENGINEER
CHECKED BY:	INSPECTOR

FUNDING CIP/SAP	SPEC. NO.	E9
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
PROJECT 'E': REPLACE 6th FLOOR TRANSFORMER		
CITY OF SAN DIEGO, CALIFORNIA SHEET 51 OF 66 SHEETS		W.B.S. B-00952, B-1000B B-10010
DESCRIPTION	BY	DATE
DSD BACKCHECK	MJA	12/08/2011
AS-BUILTS		
CONTRACTOR	DATE STARTED	
INSPECTOR	DATE COMPLETED	
SECTION HEAD	PROJECT MANAGER	
	CCS27 COORDINATE	
	CCS83 COORDINATE	
	36392-51-D	



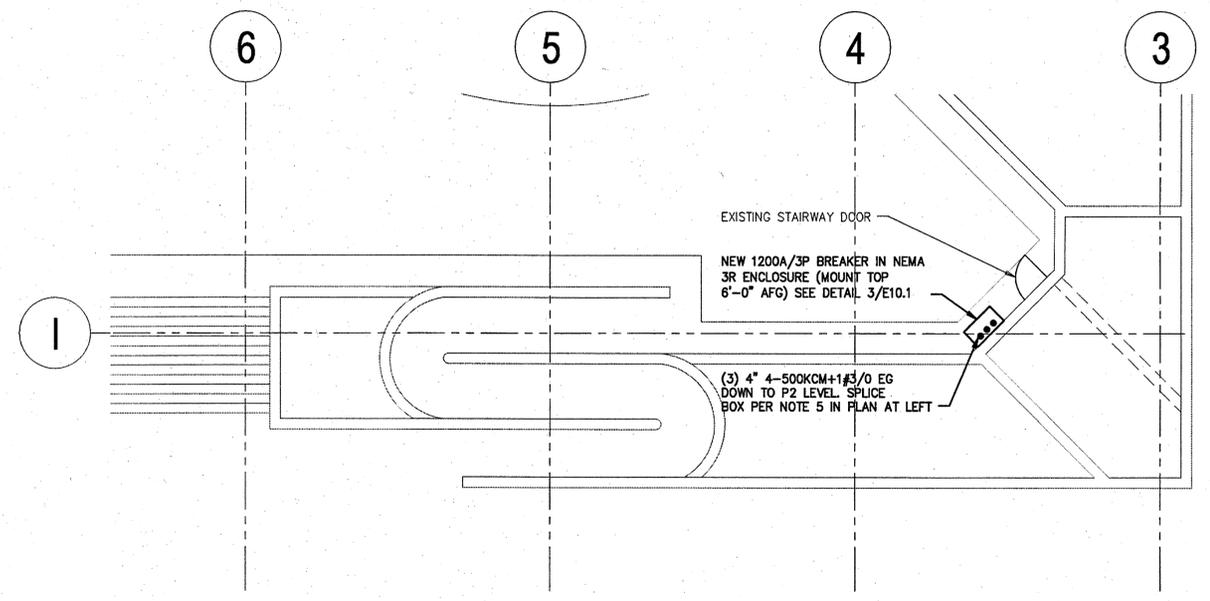
LARGE SCALE P2 LEVEL ELECTRICAL ROOM

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



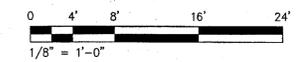
KEYNOTES

- 1 PROVIDE NEW NEMA 1 CODE SIZED SPlice BOX IN CEILING WITH REMOVABLE COVER ON UNDERSIDE.
- 2 EXISTING FEEDER BETWEEN GENERATOR TERMINAL CABINET AND GENERATOR OUTPUT CIRCUIT BREAKER (3) SETS 4" 4-500KCM+1#3/0 EG CONNECTED IN PARALLEL. MODIFY WIRING AS NECESSARY TO INSTALL SPlice BOX IN NOTE 1 ABOVE AND TO FACILITATE SPlices. SPlices SHALL BE MADE USING 2-HOLE COMPRESSION TYPE LUGS CONNECTED TO 1/4" X 4" COPPER BUS BAR SUPPORTED ON 600V. STAND-OFF INSULATORS. (TYPICAL FOR EACH PHASE AND NEUTRAL. GROUND BAR SHALL BE SIMILAR BUT ALSO BONDED TO SPlice BOX USING 1/4 THWN COPPER). SEE DETAIL 1/E10.1 FOR SPlice BAR DETAIL.
- 3 PROVIDE (3) SETS EACH OF 4" 4-500KCM+1#3/0 EG THIN COPPER CONNECTED IN PARALLEL CONTINUOUSLY BETWEEN SPlice BOX IN NOTE 2 ABOVE TO NEW SPlice BOX AT FOOT OF STAIRWELL IN NOTE 5 BELOW.
- 4 CODE SIZED NEMA 1 PULLBOX AT CEILING WITH REMOVABLE COVER ON UNDERSIDE.
- 5 CODE SIZED NEMA 1 SPlice BOX SIMILAR TO NOTE 2 ABOVE.
- 6 CORE DRILL CLEARANCE HOLES FOR (3) 4" CONDUITS UP TO COURTYARD ABOVE (6 HOLES TOTAL). ROUTE FEEDERS TO COURTYARD AND TERMINATE IN A LOCKABLE NEMA 3R OVERSIZED ENCLOSURE. SEE PARTIAL SOUTHEAST COURTYARD PLAN THIS SHEET FOR CONTINUATION. AFTER CONDUIT INSTALLATION SEAL AROUND ALL CONDUITS AT EACH FLOOR PENETRATION.
- 7 SUPPORT ALL PULLBOXES AND SPliceBOXES USING 1/2" ALL-THREAD ROD FROM DECKING ABOVE (TYPICAL).



PARTIAL SOUTHEAST COURTYARD PLAN

SCALE: 1/8" = 1'-0"



APPROXIMATE EQUIPMENT WEIGHTS ARE AS FOLLOWS:
 PULLBOXES = 350 LBS (EACH OF 3)
 CONDUIT/WIRE = 12 LBS/FOOT
 CONTRACTOR SHALL SUBMIT FINAL RESPECTIVE EQUIPMENT WEIGHTS AND ANCHORAGE/METHOD OF CONNECTION TO BUILDING STRUCTURE TO CITY DSD STRUCTURAL REVIEWER FOR APPROVAL PRIOR TO INSTALLATION.

E10

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

PROJECT 'F': ENGINE TAP BOX (PART 1 OF 2)

CITY OF SAN DIEGO, CALIFORNIA SHEET 52 OF 66 SHEETS		W.B.S. B-00952, B-10008 B-10010	
APPROVED FOR CITY ENGINEER	DATE	3/8/12	SECTION HEAD
DESCRIPTION	BY	APPROVED	DATE
DSD BACKCHECK	MDA	12/08/2011	
CONSTRUCTION ENGINEER CHECKED BY			PROJECT MANAGER
INSPECTOR			CCS27 COORDINATE
AS-BUILTS			CCS83 COORDINATE
CONTRACTOR INSPECTOR	DATE STARTED		36392-52-D
	DATE COMPLETED		

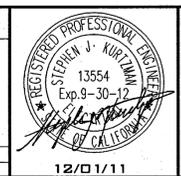
CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

TURPIN & RATTAN
 ENGINEERING, INC.
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA MESA, CA 91941-0321
 619 / 466 / 6224 FAX 466 / 6233
 E-MAIL: ENGINEER@TURPIN.COM

SCALE: 1/4" = 1'-0"
 HORIZONTAL: NO SCALE
 VERTICAL: NO SCALE

TREI # 09292.00



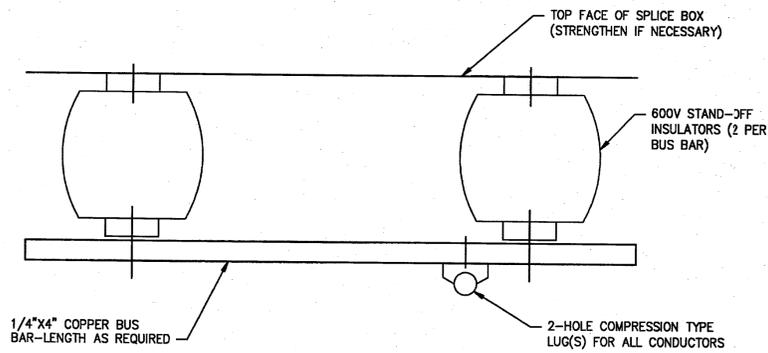
CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:
 FOR CITY ENGINEER
 CHECKED BY:
 CONSTRUCTION ENGINEER
 CHECKED BY:
 INSPECTOR

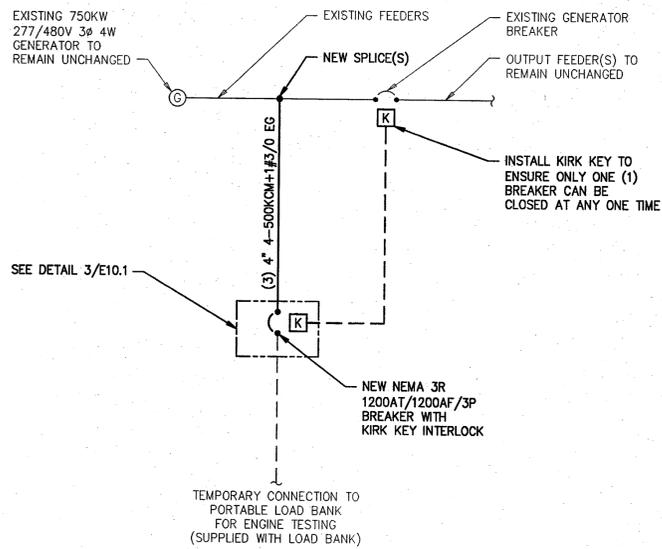
12/01/11



SPLICE TERMINATION DETAIL

NO SCALE

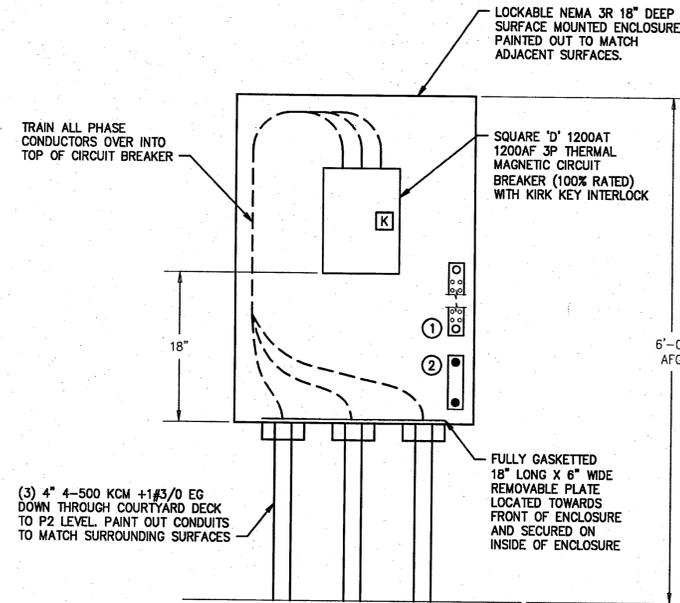
1
E10.1



PARTIAL SINGLE LINE DIAGRAM

NO SCALE

2
E10.1



OUTDOOR CIRCUIT BREAKER ENCLOSURE

NO SCALE

3
E10.1

KEYNOTES

- 1 PROVIDE 1/4"x4" COPPER BUS BAR ON 600V STAND-OFF INSULATORS AND PREDRILLED TO ACCOMMODATE (9) SETS OF 500 KCM TWO-HOLE CABLE LUGS. TERMINATE ALL THREE SETS OF NEUTRAL LEADS FROM P2 LEVEL ON TOP THREE POSITIONS.
- 2 PROVIDE 1/4"x4" COPPER BUS BAR ON STAND-OFF SUPPORTS AND PREDRILLED TO ACCOMMODATE (9) SETS OF 3/0 TWO-HOLE CABLE LUGS. TERMINATE ALL THREE SETS OF GROUNDING CONDUCTORS FROM P2 LEVEL ON TOP THREE POSITIONS. ALSO BOND GROUND BAR TO ENCLOSURE.
- 3 PROVIDE PERMANENT LAMACOID LABELS ON BOTH EXTERIOR FRONT FACE OF THIS ENCLOSURE AND ON THE INSIDE OF THE DOOR, ENGRAVED WHITE-RED-WHITE WITH 1/2" UPPER CASE LETTERS AS FOLLOWS:

CAUTION- THIS BREAKER IS ENERGIZED WHEN GENERATOR IS RUNNING. GENERATOR CAN AUTOMATICALLY START AT ANY TIME. THIS BREAKER CAN ONLY BE CLOSED WHEN GENERATOR BREAKER IS OPEN.

APPROXIMATE EQUIPMENT WEIGHTS ARE AS FOLLOWS:
OUTDOOR CIRCUIT BREAKER ENCLOSURE = 600 LBS
CONTRACTOR SHALL SUBMIT FINAL RESPECTIVE EQUIPMENT WEIGHTS AND ANCHORAGE/METHOD OF CONNECTION TO BUILDING STRUCTURE TO CITY DSD STRUCTURAL REVIEWER FOR APPROVAL PRIOR TO INSTALLATION.

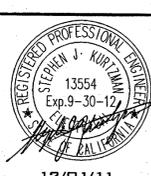
FUNDING CIP/SAP	SPEC. NO.	E10.1
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
PROJECT "F": ENGINE TAP BOX (PART 2 OF 2)		
CITY OF SAN DIEGO, CALIFORNIA SHEET 53 OF 66 SHEETS		V.B.S. B-00952, B-1000B B-10010
APPROVED BY: <i>[Signature]</i>	DATE: 3/2/12	SECTION HEAD
FOR CITY ENGINEER	DATE	PROJECT MANAGER
DESCRIPTION	BY	APPROVED
DSD BACKCHECK	MJA	12/08/2011
CONSTRUCTION ENGINEER	CHECKED BY:	
INSPECTOR	CHECKED BY:	
AS-BUILTS	DATE STARTED	DATE COMPLETED
CONTRACTOR		
INSPECTOR		
		36392-53-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
TURPIN & RATTAN
 ENGINEERING, INC.
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA MESA, CA 91941-5221
 619 / 466 / 6224 FAX 666 / 6223
 E-MAIL: ENGINE@TURPINRATTAN.COM

TREI # 09292.00

SCALE: NONE HORIZONTAL: NO SCALE VERTICAL: NO SCALE

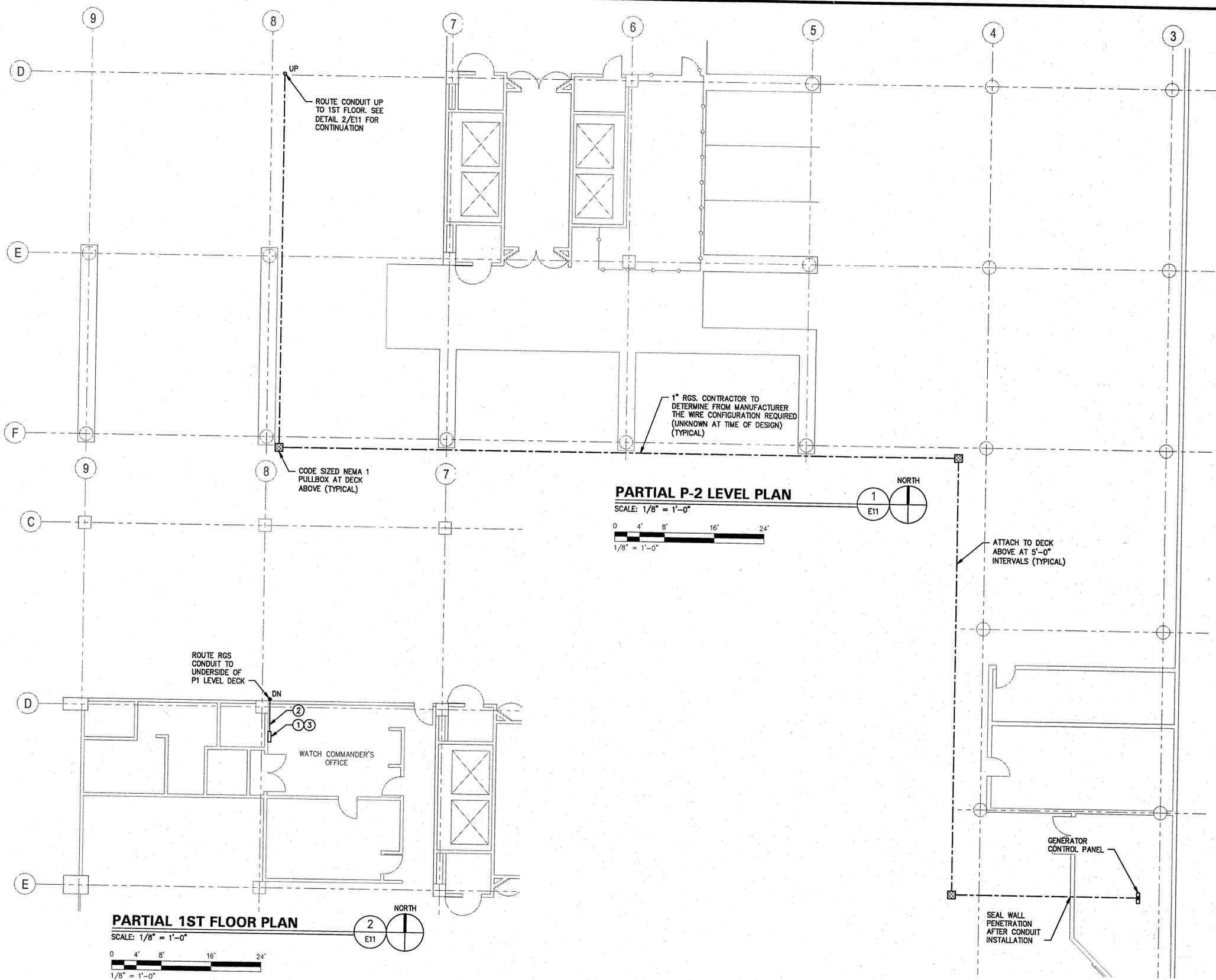


CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

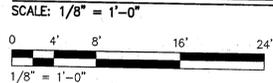
APPROVED BY:
 FOR CITY ENGINEER
 CHECKED BY:
 CONSTRUCTION ENGINEER
 CHECKED BY:
 INSPECTOR



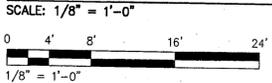
- KEYNOTES**
- CONTRACTOR SHALL PROVIDE AND INSTALL GENERATOR REMOTE ANNUNCIATOR PANEL ON WALL OF WATCH COMMANDERS OFFICE. ROUTE CONDUIT INTO ROOM ABOVE CEILING, THEN SURFACE MOUNTED DOWN WALL INTO TOP OF PANEL. PAINT ALL EXPOSED CONDUIT TO MATCH ADJACENT SURFACES.
 - PROVIDE 1" CONDUIT WITH (2) #10 THHN AND (1) BELDEN #8721 CABLE FROM ANNUNCIATOR PANEL IN WATCH COMMANDERS OFFICE TO GENERATOR PANEL ON P2 LEVEL. WHERE CONDUIT IS RUN EXPOSED USE RGS TYPE CONDUIT. INSTALL CODE SIZED NEMA 1 PULLBOXES AT CHANGES OF DIRECTION FOR EASE OF PULLING IN CABLE.
 - COORDINATE LOCATION OF NEW ANNUNCIATOR ALARM PANEL IN WATCH COMMANDERS OFFICE WITH WATCH COMMANDERS AND SEEK COLLECTIVE AGREEMENT AS TO HEIGHT AND LOCATION PRIOR TO INSTALLATION.

THE REMOTE ANNUNCIATOR PANEL CAN BE OBTAINED THROUGH HAWTHORNE POWER SYSTEMS. CONTACT MR STEVE JAMISON AT (858) 974-6821

PARTIAL P-2 LEVEL PLAN



PARTIAL 1ST FLOOR PLAN



FUNDING CIP/SAP _____ SPEC. NO. _____ E11

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

PROJECT 'G': GENERATOR REMOTE ANNUNCIATOR

CITY OF SAN DIEGO, CALIFORNIA SHEET 64 OF 66 SHEETS		W.B.S. B-00952, B-10008 B-10010	
APPROVED BY: FIR CITY ENGINEER	DATE: 3/12/12	SECTION HEAD	
CHECKED BY:		PROJECT MANAGER	
CONSTRUCTION ENGINEER		CCS27 COORDINATE	
CHECKED BY:		CCS83 COORDINATE	
INSPECTOR			
CONTRACTOR	DATE STARTED		
INSPECTOR	DATE COMPLETED		36392-54-D

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

TURPIN & RATTAN
ENGINEERING, INC.
CONSULTING ENGINEERS
4719 PALM AVENUE
LA MESA, CA 91941-1921
619 / 465 / 6224 FAX 665 / 6233
E-MAIL: ENGINEER@TRCISO.COM

SCALE: 1/8" = 1'-0"

HORIZONTAL NO SCALE
VERTICAL NO SCALE

TREI # 09292.00



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



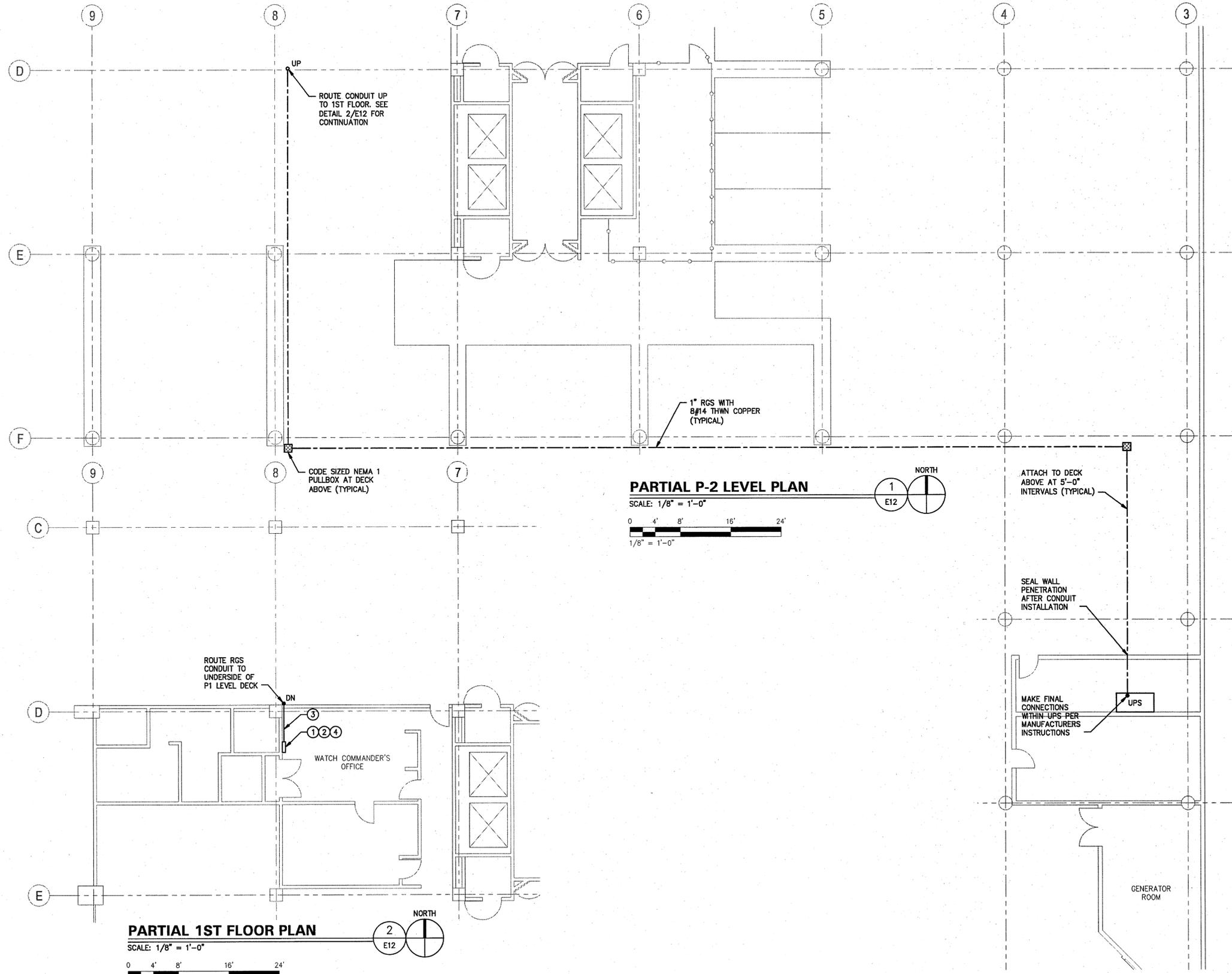
WARNING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

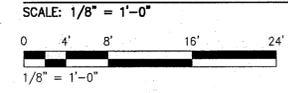
KEYNOTES

- ① CONTRACTOR SHALL PROVIDE AND INSTALL UPS REMOTE ALARM PANEL ON WALL OF WATCH COMMANDERS OFFICE. ROUTE CONDUIT INTO ROOM ABOVE CEILING, THEN SURFACE MOUNTED DOWN WALL INTO TOP OF PANEL. PAINT EXPOSED CONDUIT TO MATCH ADJACENT WALL SURFACES.
- ② SURFACE MOUNTED PANEL SHALL BE TOSHIBA CAT #G8000
- ③ PROVIDE 1" CONDUIT WITH (1) CAT 5e CABLE FROM REMOTE ALARM PANEL IN WATCH COMMANDERS OFFICE TO UPS CABINET ON P2 LEVEL. WHERE CONDUIT IS RUN EXPOSED USE RGS TYPE CONDUIT. INSTALL CODE SIZED NEMA 1 PULLBOXES AT CHANGES OF DIRECTION FOR EASE OF PULLING IN CABLE.
- ④ COORDINATE LOCATION OF NEW REMOTE ALARM PANEL IN WATCH COMMANDERS OFFICE WITH WATCH COMMANDERS AND SEEK COLLECTIVE AGREEMENT AS TO HEIGHT AND LOCATION PRIOR TO INSTALLATION.

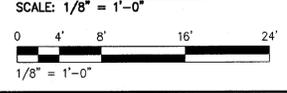
THE REMOTE ALARM PANEL CAN BE OBTAINED FROM COMPUTER PROTECTION TECHNOLOGY, INC. CONTACT MS SARAH BACHMAN AT (800) 841-0789



PARTIAL P-2 LEVEL PLAN



PARTIAL 1ST FLOOR PLAN



FUNDING CIP/SAP: E12
 SPEC. NO.
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

PROJECT H: UPS REMOTE ALARM PANEL

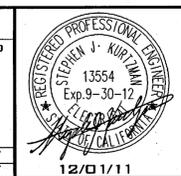
CITY OF SAN DIEGO, CALIFORNIA
 SHEET 55 OF 66 SHEETS
 V.B.S. B-00952, B-1000B
 B-10010

APPROVED BY: <i>[Signature]</i>	DATE: 3/29/12	SECTION HEAD
FOR CITY ENGINEER		PROJECT MANAGER
DESCRIPTION: DSD BACKCHECK	BY: MDA	APPROVED: 12/08/2011
DATE FILMED:		
AS-BUILTS		CCS27 COORDINATE
		CCS83 COORDINATE
CONTRACTOR	DATE STARTED:	36392-55-D
INSPECTOR	DATE COMPLETED:	

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 TURPIN & RATTAN
 ENGINEERING, INC.
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA MESA, CA 91941-9281
 619 / 466 / 6224 FAX 466 / 6233
 E-MAIL: ENGINEER@TRRSD.COM

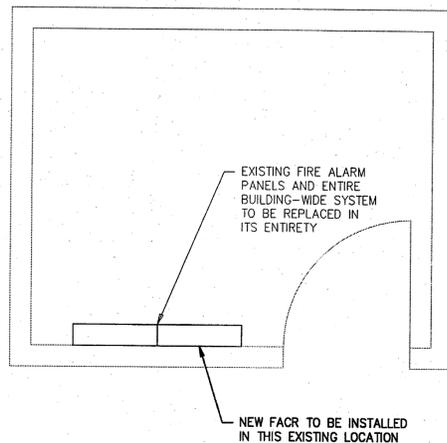
SCALE: HORIZONTAL 1/8" = 1'-0" VERTICAL NO SCALE



CITY OF SAN DIEGO PUBLIC WORKS PROJECT

WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY: *[Signature]*
 FOR CITY ENGINEER
 CHECKED BY:
 CONSTRUCTION ENGINEER
 CHECKED BY:
 INSPECTOR



LARGE SCALE FIRE CONTROL ROOM 2nd FLOOR

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



GENERAL NOTES

1. THE EXISTING BUILDING-WIDE FIRE ALARM SYSTEM IS TO BE REPLACED IN ITS ENTIRETY.
2. COMPLETE FIRE ALARM SHOP DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE APPROVING AUTHORITY FOR APPROVAL PRIOR TO INSTALLATION.
3. THE DRAWINGS FOR SUBMITTAL SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
 - a. POINT TO POINT WIRING DIAGRAMS
 - b. FIRE ALARM RISER DETAILS
 - c. NUMBER OF CONDUCTORS PER CIRCUIT
 - d. SIZE (GAUGE) OF ELECTRICAL CONDUCTORS
 - e. SYSTEM BATTERY CALCULATIONS
 - f. WORST-CASE VOLTAGE DROP CALCULATIONS
 - g. MANUFACTURER'S CUT SHEETS AND CSFM NUMBERS FOR EACH COMPONENT
4. NOTE: THE FIRE ALARM SYSTEM IS A DESIGN-BUILD EFFORT BY THE ELECTRICAL CONTRACTOR OR HIS APPOINTED SUB-CONTRACTOR.
5. SEE SPECIFICATIONS 283111 FOR ALL REQUIREMENTS PERTAINING TO THIS FIRE ALARM SYSTEM.
6. ALL EXISTING FIRE ALARM DEVICES, COMPONENTS AND WIRING SHALL BE REMOVED COMPLETELY FROM THE FACILITY BY THE INSTALLATION CONTRACTOR.
7. NOTE THAT THIS IS A PERMANENTLY OCCUPIED FACILITY, 7/24/365. EVERY PRECAUTION SHALL BE TAKEN TO MINIMIZE DISRUPTIONS WITH THE FACILITY DURING DEMOLITION AND FIRE ALARM SYSTEM INSTALLATION.
8. THE INSTALLING CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR REPAIRING/RESTORING TO EXISTING CONDITIONS ALL BUILDING FINISHES INCLUDING WALLS AND CEILINGS.
9. DURING DEMOLITION OF THE EXISTING FIRE ALARM SYSTEM AND THE INSTALLATION OF THE NEW FIRE ALARM SYSTEM THE SAN DIEGO POLICE HEADQUARTERS AND/OR THE AHJ MAY REQUIRE A FIRE WATCH. IF REQUIRED THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THIS PERSONNEL.
10. CONSTRUCTION WORK SHALL ONLY OCCUR DURING NORMAL BUSINESS HOURS, MONDAY THROUGH FRIDAY.
11. COORDINATE ALL AREAS FOR LAY-DOWN AND STOCKPILING OF EQUIPMENT WITH THE SAN DIEGO POLICE HEADQUARTERS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING ALL BUILDING PLANS GENERATED IN AUTOCAD FROM EXISTING BLUE-PRINTS. NO ELECTRONIC BUILDING PLANS EXIST CURRENTLY. TO AID THE CONTRACTOR, EXISTING HARD COPIES OF THE EXISTING BUILDING PLANS MAY BE SCANNED TO FACILITATE THE GENERATION OF SUITABLE BACKGROUNDS.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

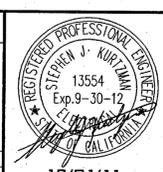
TURPIN & RATTAN
ENGINEERING, INC.

4719 PALM AVENUE
LA MEHA, CA 91941-5521
619 / 456 / 8224 FAX 456 / 6333
E-MAIL: ENGINEER@TRINC.COM

SCALE
3/4" = 1'-0"

HORIZONTAL NO SCALE
VERTICAL NO SCALE

TREI # 09292.00



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT

WARNING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:	FOR CITY ENGINEER
CHECKED BY:	CONSTRUCTION ENGINEER
INSPECTOR	

FUNDING CIP/SAP: SPEC. NO. E13

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

PROJECT 'I': FIRE ALARM SYSTEM REPLACEMENT

CITY OF SAN DIEGO, CALIFORNIA
SHEET 58 OF 66 SHEETS

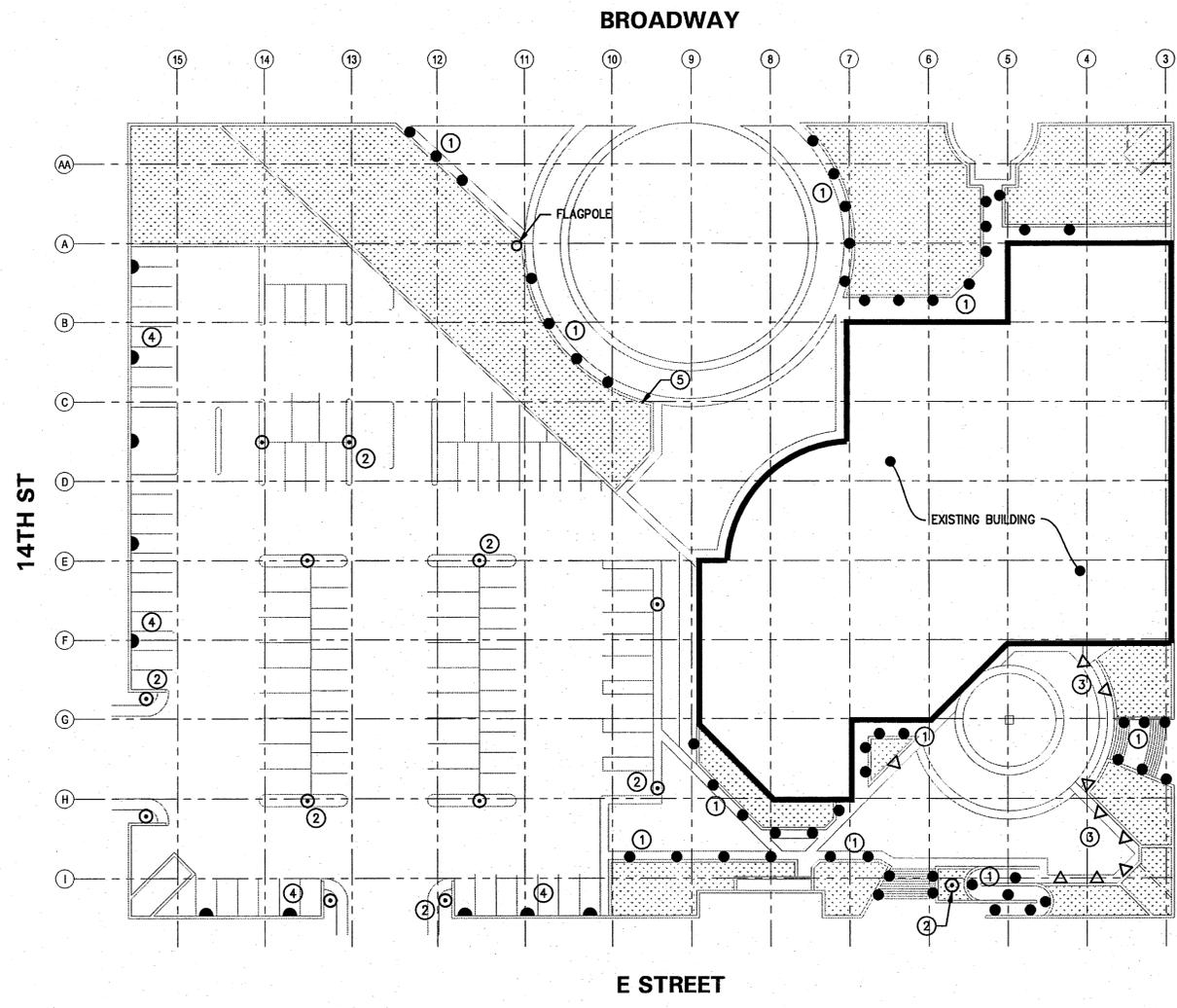
V.B.S. B-00952, B-10008
B-10010

DESCRIPTION	BY	APPROVED	DATE	FILMED
DSD BACKCHECK	NDA		12/08/2011	

AS-BUILTS

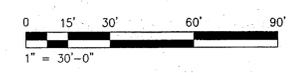
CONTRACTOR: DATE STARTED: SECTION HEAD: PROJECT MANAGER: CCS27 COORDINATE: CCS83 COORDINATE: 36392-56-D

INSPECTOR: DATE COMPLETED:



- KEYNOTES**
- ① DISCONNECT AND REMOVE EXISTING LOW LEVEL STEP/WALKWAY LIGHT IN ITS ENTIRETY INCLUDING CUSTOM BACKING PLATE. SALVAGE WIRING IN PLACE. PROVIDE NEW REPLACEMENT LOW LEVEL/WALKWAY LIGHT INCLUDING REPLACEMENT CUSTOM BACKING PLATE IN SAME LOCATION. CONNECT INTO EXISTING CIRCUIT. TEST AND PLACE INTO SERVICE. (TYPICAL FOR APPROX 58 FIXTURES). NOTE THIS IS FIXTURE TYPE 'A' ON FIXTURE SCHEDULE. CONTRACTOR IS RESPONSIBLE FOR DETERMINING BACKING PLATE DIMENSIONS. (THIS IS PART 1 OF 3 OF PROJECT 'K')
 - ② DISCONNECT AND REMOVE EXISTING WHITE POLE MOUNTED LIGHT FIXTURE AND POLE. SALVAGE WIRING. PROVIDE NEW REPLACEMENT POLE/LIGHT FIXTURE IN SAME LOCATION USING SAME ANCHOR BOLTS AND WIRING. TEST AND PLACE INTO SERVICE. (TYPICAL OF 13). THIS IS FIXTURE 'B' ON FIXTURE SCHEDULE. (THIS IS PROJECT 'J')
 - ③ DISCONNECT AND REMOVE EXISTING LOW LEVEL/WALKWAY LIGHT IN ITS ENTIRETY. SALVAGE WIRING IN PLACE. PROVIDE NEW REPLACEMENT FIXTURE TYPE 'C'. CONNECT, INSTALL AND PLACE INTO SERVICE. (THIS IS PART 2 OF 3 OF PROJECT 'K')
 - ④ DISCONNECT AND REMOVE EXISTING LOW LEVEL/WALKWAY LIGHT IN ITS ENTIRETY. SALVAGE WIRING IN PLACE. PROVIDE NEW REPLACEMENT FIXTURE TYPE 'D'. CONNECT, INSTALL AND PLACE INTO SERVICE. (THIS IS PART 3 OF 3 OF PROJECT 'K')
 - ⑤ RESTORE WIRING TO THIS FIXTURE LOCATION AND INSTALL NEW FIXTURE TYPE 'A' WITH BACKING PLATE. (THIS IS PART 1 OF 3 OF PROJECT 'K')

ELECTRICAL SITE PLAN (BROADWAY AND LEVEL 2)
SCALE: 1" = 30'-0"



E14

FUNDING CIP/SAP	SPEC. NO.	E14	
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES			
PROJECTS "J" & "K": REPLACE SITE LIGHTING			
CITY OF SAN DIEGO, CALIFORNIA SHEET 57 OF 66 SHEETS		V.B.S. B-00952, B-10008 B-10010	
APPROVED BY: FOR CITY ENGINEER	DATE 3/2/12	APPROVED BY: CONSTRUCTION ENGINEER	SECTION HEAD PROJECT MANAGER
CHECKED BY: DSD BACKCHECK	DATE 12/08/2011	CHECKED BY: INSPECTOR	CCS27 COORDINATE
AS-BUILTS			CCS83 COORDINATE
CONTRACTOR	DATE STARTED	INSPECTOR	DATE COMPLETED
			36392-57-D

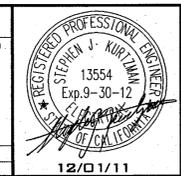
CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

TREP # 09292.00

TURPIN & RATTAN
ENGINEERING, INC.
CONSULTING ENGINEERS
4719 PALM AVENUE
LA MESA, CA 91941-5221
619 / 466 / 6224 FAX 666 / 6233
E-MAIL: ENGINEER@TRC100.COM

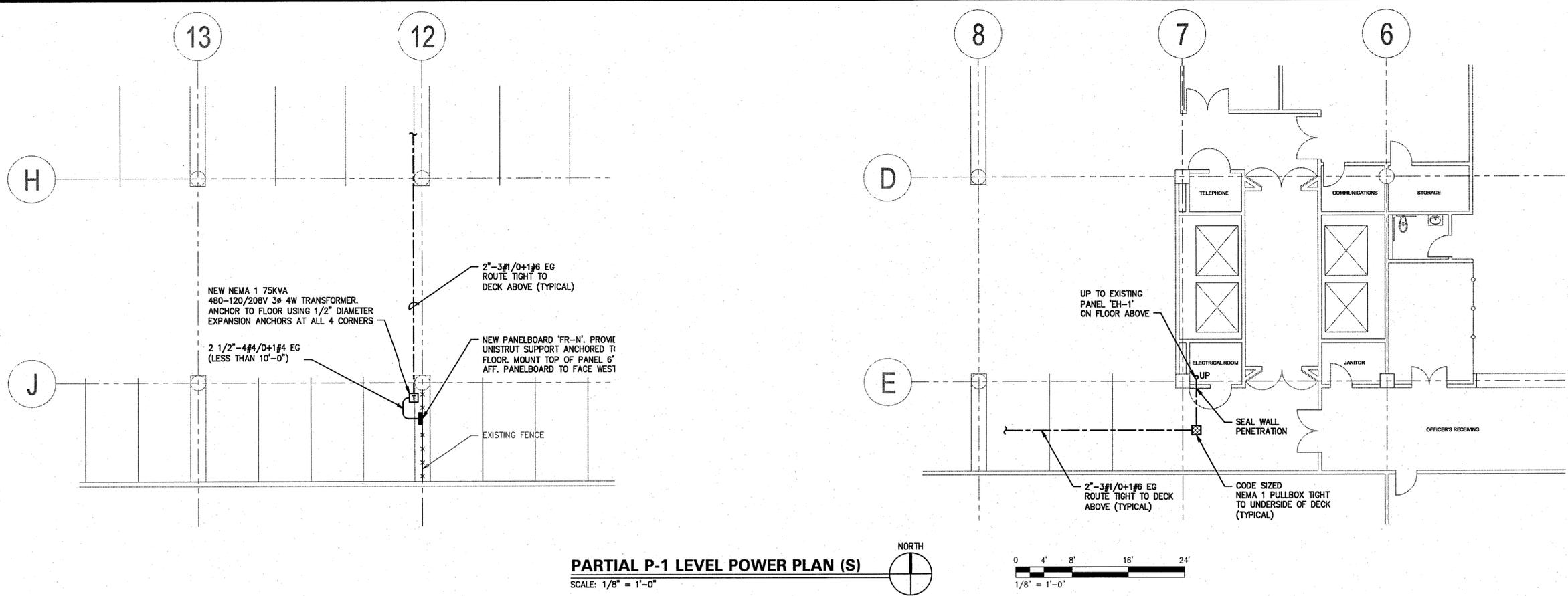
SCALE: HORIZONTAL NO SCALE
1" = 30'-0" VERTICAL NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



EXISTING PANEL 'EH'

MOUNTING: SURFACE
ENTER CABINET AT: BOTTOM
VOLTAGE: 277/480V, 3Ø 4W

MAIN: LUGS ONLY
TYPE: BOLT-ON
BUSSING: 225 AMP, AIC: 14K

LOCATION	VOLT-AMPERES			L T G	M I S	BKR. #	A B C	BKR. #	M I S	L T G	VOLT-AMPERES			LOCATION
	ØA	ØB	ØC								ØA	ØB	ØC	
EXIST LOAD						20	1	11						EXIST LOAD
EXIST LOAD						20	1	13						EXIST LOAD
EXIST LOAD						20	1	15						EXIST LOAD
EXIST LOAD						20	1	17						EXIST LOAD
EXIST LOAD						20	1	19						EXIST LOAD
EXIST LOAD						20	1	11						EXIST LOAD
EXIST LOAD						20	1	13						EXIST LOAD
SPACE								15						SPACE
SPACE								17						SPACE
SPACE								19						SPACE
EXIST LOAD						80	3	21						EXIST LOAD
								23						
								25						
								26						
FREEZERS FDR						1	125	3						EXIST LOAD
								29						
								31						
SPACE								33						SPACE
SPACE								35						SPACE
SPACE								37						SPACE
SPACE								39						SPACE
SPACE								41						SPACE
SUBTOTAL														SUBTOTAL
TOTAL VOLT-AMPERES/PHASE	ØA=	ØB=	ØC=	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA
TOTAL PANEL VOLT-AMPERES:	VA + LCL			VA=	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA

EXISTING LOAD ON PANELBOARD, MEASURED ON FEBRUARY 16 2010 AT 3:00 PM
 PHASE 'A' = 19 AMPS
 PHASE 'B' = 21 AMPS
 PHASE 'C' = 20 AMPS
 *PROVIDE NEW 125A/3P BREAKER TO MATCH EXISTING. NO LOAD ADDED TO THIS PANEL UNTIL SDPD ADD ADDITIONAL FREEZERS.

NEW PANEL PANEL 'FR-N'

MOUNTING: SURFACE
ENTER CABINET AT: BOTTOM
VOLTAGE: 120/208V, 3Ø 4W

MAIN: 225A/3P BRK
TYPE: BOLT-ON
BUSSING: 225 AMP, AIC: 10K

LOCATION	VOLT-AMPERES			L T G	M I S	BKR. #	A B C	BKR. #	M I S	L T G	VOLT-AMPERES			LOCATION
	ØA	ØB	ØC								ØA	ØB	ØC	
SPACE								1						SPACE
SPACE								3						SPACE
SPACE								5						SPACE
SPACE								7						SPACE
SPACE								9						SPACE
SPACE								11						SPACE
SPACE								13						SPACE
SPACE								15						SPACE
SPACE								17						SPACE
SPACE								19						SPACE
SPACE								21						SPACE
SPACE								23						SPACE
SPACE								25						SPACE
SPACE								27						SPACE
SPACE								29						SPACE
SPACE								31						SPACE
SPACE								33						SPACE
SPACE								35						SPACE
SPACE								37						SPACE
SPACE								39						SPACE
SPACE								41						SPACE
SUBTOTAL														SUBTOTAL
TOTAL VOLT-AMPERES/PHASE	ØA=	ØB=	ØC=	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA
TOTAL PANEL VOLT-AMPERES:	VA + LCL			VA=	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA

PROVIDE PANEL WITH 100% NEUTRAL BUS AND 50% GROUND BUS.
 FOR NAMEPLATES SEE DETAILS 1/E1 AND 1/E6.

NOTE:
 ALL NEW PANELBOARDS SHALL HAVE COMPLETE NAMEPLATES ON THE OUTSIDE FACE CONFORMING TO SDPD STANDARD DETAIL 1/E1 (TYPICAL).
 ALL PANELBOARDS SHALL, IN ADDITION HAVE A PHASE COLOR IDENTIFICATION NAMEPLATE CONFORMING TO DETAIL 1/E6 (TYPICAL).

APPROXIMATE EQUIPMENT WEIGHTS ARE AS FOLLOWS:
 TRANSFORMER = 650 LBS
 CONTRACTOR SHALL SUBMIT FINAL RESPECTIVE EQUIPMENT WEIGHTS AND ANCHORAGE/METHOD OF CONNECTION TO BUILDING STRUCTURE TO CITY DSD STRUCTURAL REVIEWER FOR APPROVAL PRIOR TO INSTALLATION.

FUNDING CIP/SAP: _____ SPEC. NO.: _____

PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES

PROJECTS "L" NEW TRANSFORMER ON LEVEL P-1

CITY OF SAN DIEGO, CALIFORNIA
SHEET 58 OF 66 SHEETS

W.B.S. B-00952, B-10008
B-10010

DESCRIPTION	BY	APPROVED	DATE	FILMED	SECTION HEAD
FOR CITY ENGINEER			3/9/12		
DSD BACKCHECK	MDA		12/08/2011		PROJECT MANAGER
CONSTRUCTION ENGINEER					CCS27 COORDINATE
INSPECTOR					CCS83 COORDINATE

AS-BUILTS

CONTRACTOR: _____ DATE STARTED: _____
 INSPECTOR: _____ DATE COMPLETED: _____

36392-58-D

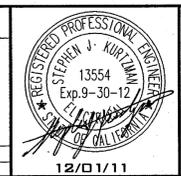
CONSTRUCTION CHANGE / ADDENDUM

CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

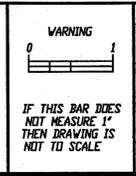
TURPIN & RATTAN
 ENGINEERING, INC.
 4919 PALM AVENUE
 LA MESA, CA 91941-1921
 619 / 466 / 6224 FAX 466 / 6233
 E-MAIL: ENGINEER@TRINC.COM

SCALE: HORIZONTAL NO SCALE
 1" = 30'-0" VERTICAL NO SCALE



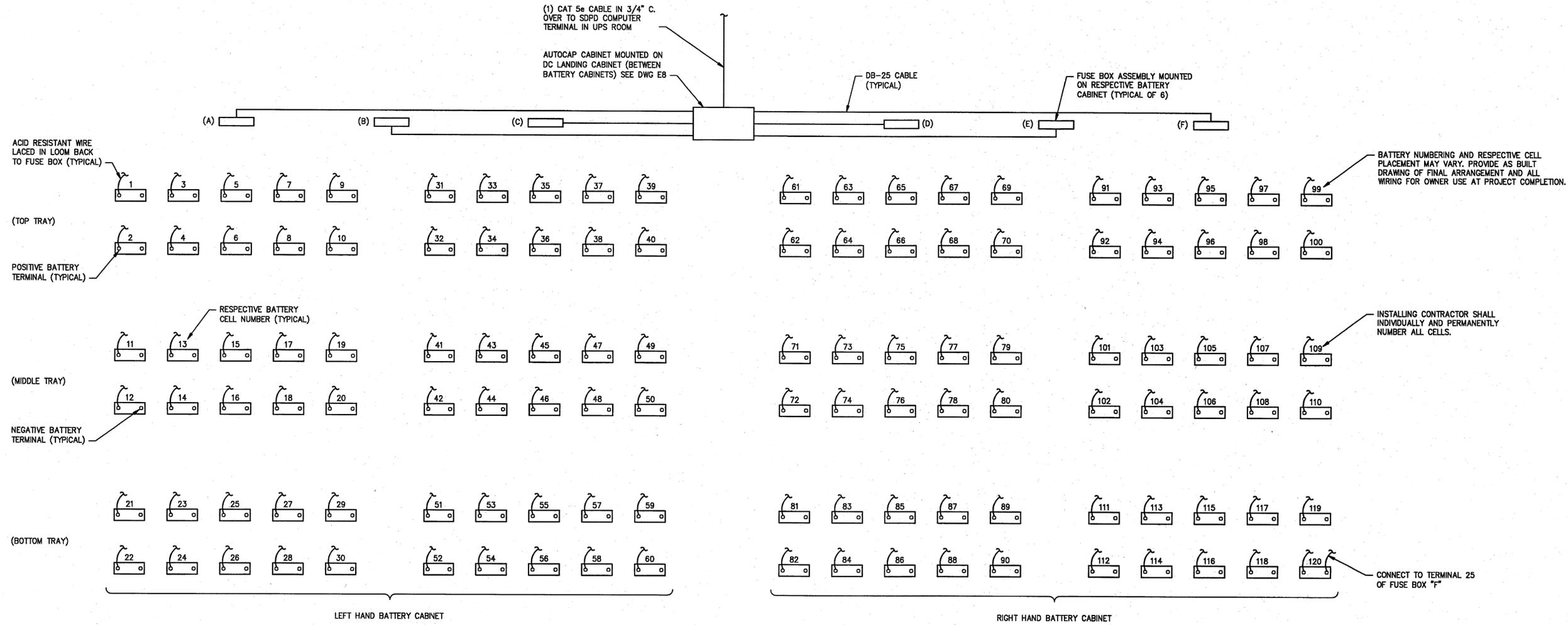
CITY OF SAN DIEGO
 PUBLIC WORKS PROJECT

12/01/11



WARNING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



GENERAL NOTES

- THIS PROJECT INVOLVES THE INSTALLATION OF A BATTERY MANAGEMENT SYSTEM (BMS) TO INDIVIDUALLY CHARGE AND REMOTELY MONITOR ALL THE NEW BATTERIES SUPPORTING THE EXISTING UPS EQUIPMENT.
- THIS RECOMMENDED APC BMS IS DC POWERED AND CAN BE REMOTELY ADDRESSED BY ANY AUTHORIZED ADMINISTRATOR THROUGH THE USE OF THE INTERNET. IT IS PASSWORD PROTECTED.
- IT IS RECOMMENDED THAT THIS SYSTEM BE SUPPLIED AND INSTALLED BY THE FOLLOWING AUTHORIZED APC APPROVED ELECTRICAL CONTRACTOR:
 NATIONAL ELECTRICAL WORKS, INC.
 4440 RANIER AVE.
 SAN DIEGO, CA 92120
 ATTENTION: MR. CLINT MORGAN
 PHONE: (619)528-2880
- THE BMS WILL INDIVIDUALLY MONITOR THE CHARGE STATE AND BEHAVIOURAL TRENDING AND CONDITION OF EACH CELL IN THE SYSTEM. EACH CELL IS INDEPENDANT OF ALL OTHERS, AND ALARM THRESHOLDS CAN BE SET SUCH THAT IF ANY CELL FALLS BELOW A PRE-DETERMINED CONDITION AN ALARM WILL AUTOMATICALLY BE POLLED OUT TO THE END USERS. BATTERY CONDITIONS AND CURRENT CHARGE STATUS CAN ALSO BE REMOTELY ACCESSED.

WIRING SUMMARY

- BATTERY GROUP 1-20 WIRED TO FUSE BOX "A"
- BATTERY GROUP 21-40 WIRED TO FUSE BOX "B"
- BATTERY GROUP 41-60 WIRED TO FUSE BOX "C"
- BATTERY GROUP 61-80 WIRED TO FUSE BOX "D"
- BATTERY GROUP 81-100 WIRED TO FUSE BOX "E"
- BATTERY GROUP 101-120 WIRED TO FUSE BOX "F"
- CONNECT TERMINAL 25 IN FUSE BOX "A" TO TERMINAL 1 IN FUSE BOX "B"
- CONNECT TERMINAL 25 IN FUSE BOX "B" TO TERMINAL 1 IN FUSE BOX "C"
- CONNECT TERMINAL 25 IN FUSE BOX "C" TO TERMINAL 1 IN FUSE BOX "D"
- CONNECT TERMINAL 25 IN FUSE BOX "D" TO TERMINAL 1 IN FUSE BOX "E"
- CONNECT TERMINAL 25 IN FUSE BOX "E" TO TERMINAL 1 IN FUSE BOX "F"

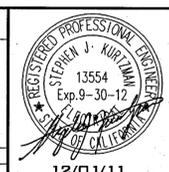
NOTES

BMS INSTALLER TO PROVIDE "STAK-ON" TYPE LUGS TO CPT (BATTERY REPLACEMENT CONTRACTOR) FOR INSTALLATION ON BATTERY POSTS AT TIME OF BATTERY REPLACEMENT. SEE NOTE ON DRAWING E8.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
 TURPIN & RATTAN
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA MESA, CA 91941-5221
 619 / 466 / 6224 FAX 656 / 6533
 E-MAIL: ENGINEER@TRNGO.COM

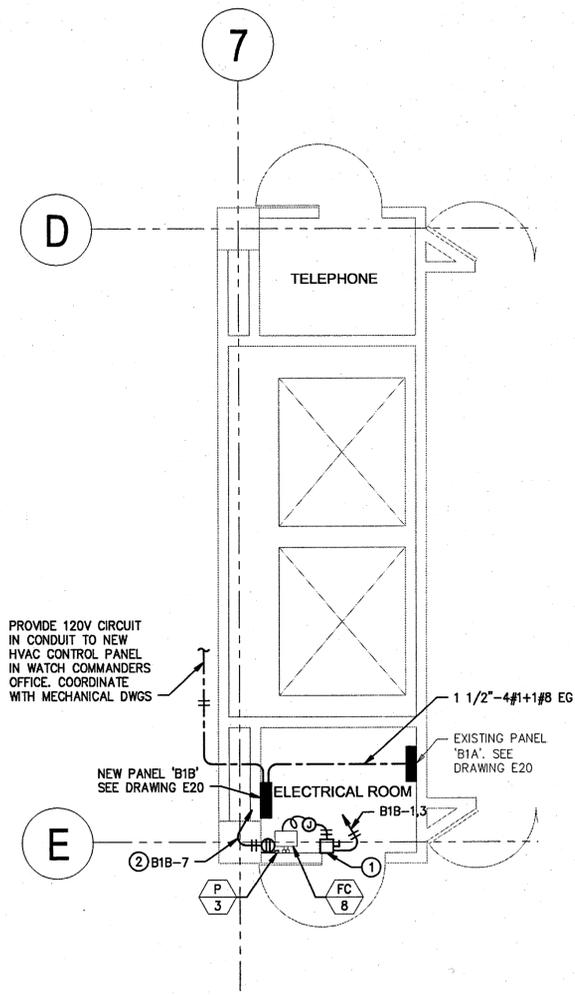
SCALE: HORIZONTAL NO SCALE, VERTICAL NO SCALE



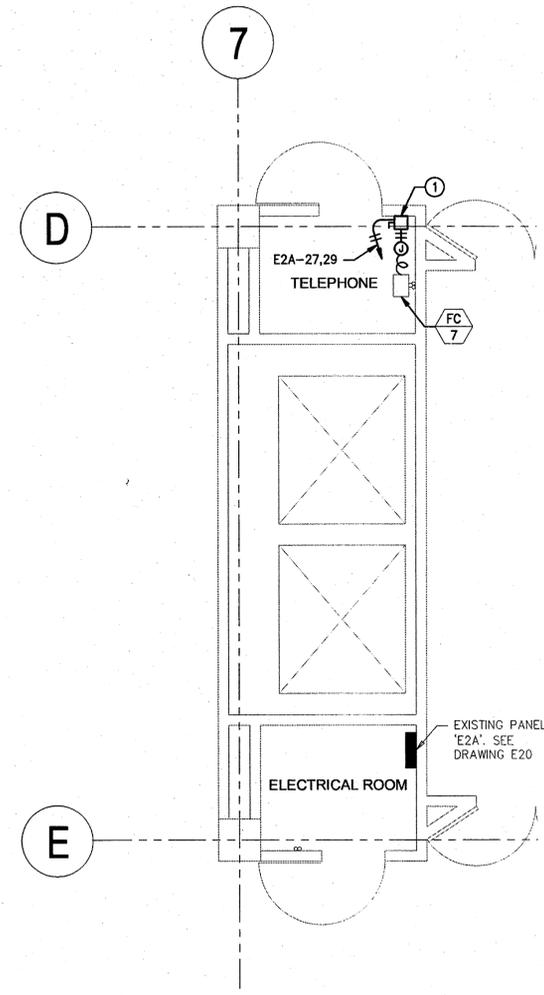
CITY OF SAN DIEGO PUBLIC WORKS PROJECT

WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

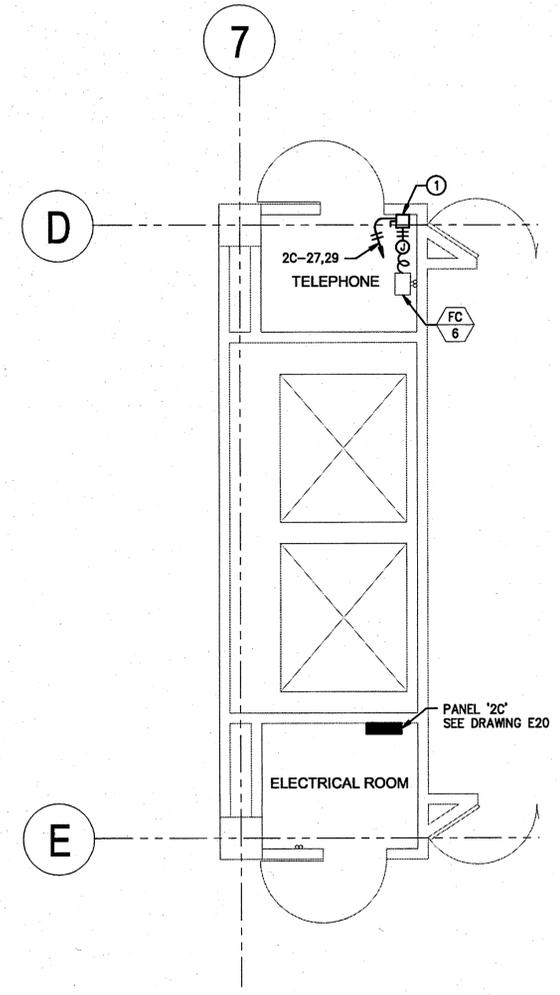
FUNDING CIP/SAP		SPEC. NO.		E16
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
PROJECT "M": PROVIDE AND INSTALL UPS BMS				
CITY OF SAN DIEGO, CALIFORNIA			W.B.S. B-00952, B-10009 B-10010	
SHEET 59 OF 66 SHEETS				
APPROVED BY:	DATE:	APPROVED:	DATE:	FILMED:
FIR CITY ENGINEER	3/13/12		12/08/2011	
CHECKED BY:	DESCRIPTION:	BY:	APPROVED:	DATE:
FIR CITY ENGINEER	DSO BACKCHECK	MHA		
CHECKED BY:	CONSTRUCTION ENGINEER			
INSPECTOR				
AS-BUILTS	CONTRACTOR:	DATE STARTED:	DATE COMPLETED:	
INSPECTOR:				36392-59-D



PARKING LEVEL 1 MECHANICAL/ELECTRICAL PLAN 1
 SCALE: 1/4" = 1'-0"
 NORTH



FIRST FLOOR MECHANICAL/ELECTRICAL PLAN 2
 SCALE: 1/4" = 1'-0"
 NORTH



SECOND FLOOR MECHANICAL/ELECTRICAL PLAN 3
 SCALE: 1/4" = 1'-0"
 NORTH

KEYNOTES

- ① INSTALL MECHANICAL CONTRACTOR PROVIDED DISCONNECT SWITCH ON WALL OF ELECTRICAL AND TELEPHONE ROOMS. MAKE FINAL CONNECTIONS TO FAN COIL UNIT. COORDINATE LOCATION OF DISCONNECT SWITCH IN ROOM WITH OWNER TO MINIMIZE DISRUPTION AND EQUIPMENT DISPLACEMENT IN ROOM.
- ② 120V RECEPTACLE FOR CONDENSATE PUMP P-3. COORDINATE EXACT MOUNTING HEIGHT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

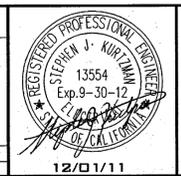
APPROXIMATE EQUIPMENT WEIGHTS ARE AS FOLLOWS:
 NEW PANELBOARDS = 300 LBS EACH
 CONTRACTOR SHALL SUBMIT FINAL RESPECTIVE EQUIPMENT WEIGHTS AND ANCHORAGE/METHOD OF CONNECTION TO BUILDING STRUCTURE TO CITY DSD STRUCTURAL REVIEWER FOR APPROVAL PRIOR TO INSTALLATION.

FUNDING CIP/SAP		SPEC. NO.		E17
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
MECHANICAL/ELECTRICAL PLANS SHEET 1				
CITY OF SAN DIEGO, CALIFORNIA			V.B.S. B-00952, B-10008 B-10010	
SHEET 00 OF 66 SHEETS				
APPROVED BY:	DATE	APPROVED BY:	DATE	SECTION HEAD
FDR CITY ENGINEER	3/9/12	DSD BACKCHECK	12/08/2011	PROJECT MANAGER
CHECKED BY:		CHECKED BY:		CCS27 COORDINATE
FDR CITY ENGINEER		FDR CITY ENGINEER		CCS83 COORDINATE
CHECKED BY:		CHECKED BY:		
INSPECTOR		INSPECTOR		
AS-BUILTS		AS-BUILTS		
CONTRACTOR	DATE STARTED	CONTRACTOR	DATE COMPLETED	36392-60-D
INSPECTOR		INSPECTOR		

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
TURPIN & RATTAN
 ENGINEERING, INC.
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA MESA, CA 91941-0521
 619 / 466 / 6224 FAX 466 / 6233
 E-MAIL: ENGINEER@TRFEE.COM

SCALE: HORIZONTAL 1/4"=1'-0" VERTICAL NO SCALE

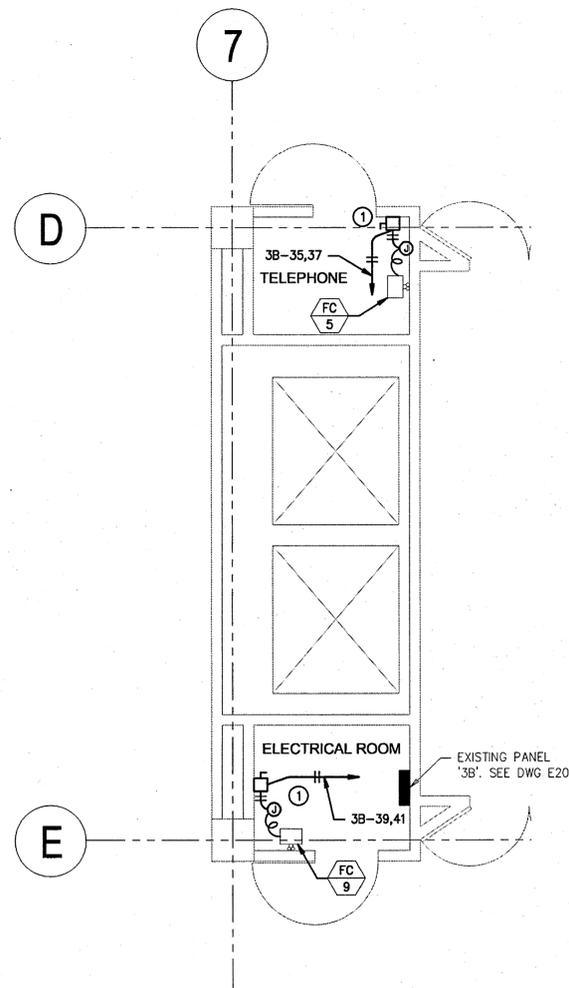


**CITY OF SAN DIEGO
PUBLIC WORKS PROJECT**



WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:	DATE
FDR CITY ENGINEER	3/9/12
CHECKED BY:	DATE
FDR CITY ENGINEER	
CHECKED BY:	DATE
INSPECTOR	

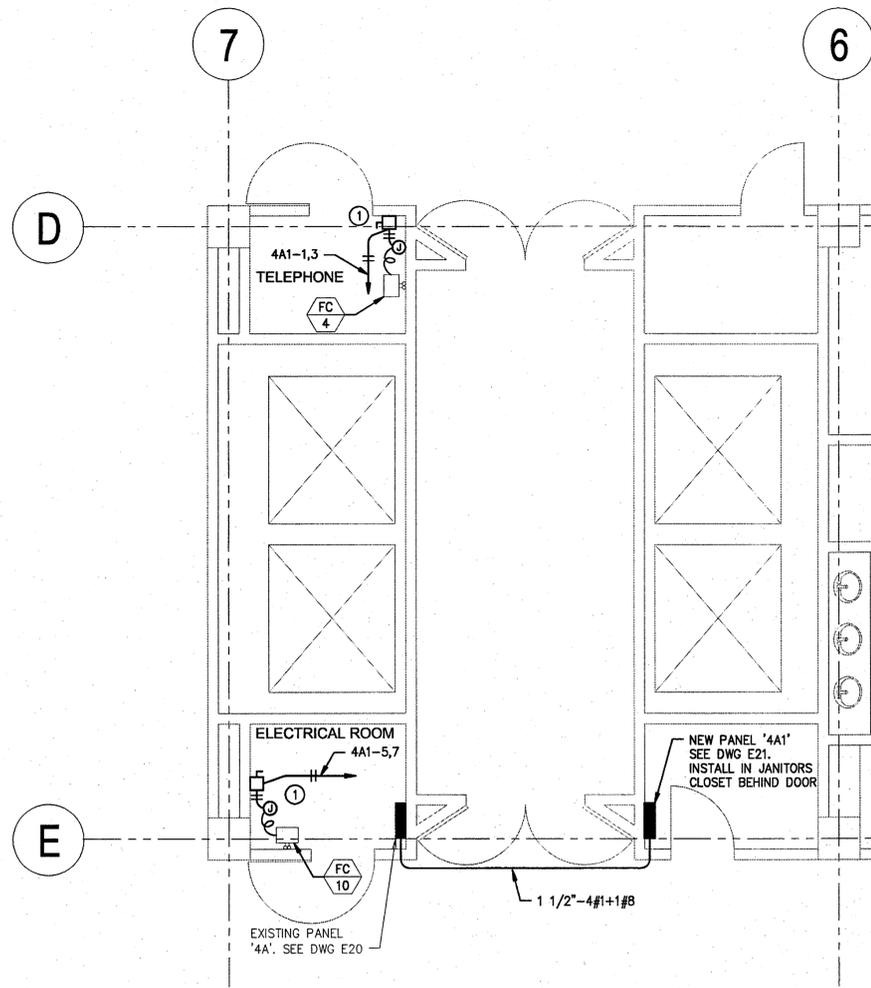


THIRD FLOOR MECHANICAL/ELECTRICAL PLAN

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



1/4" = 1'-0"

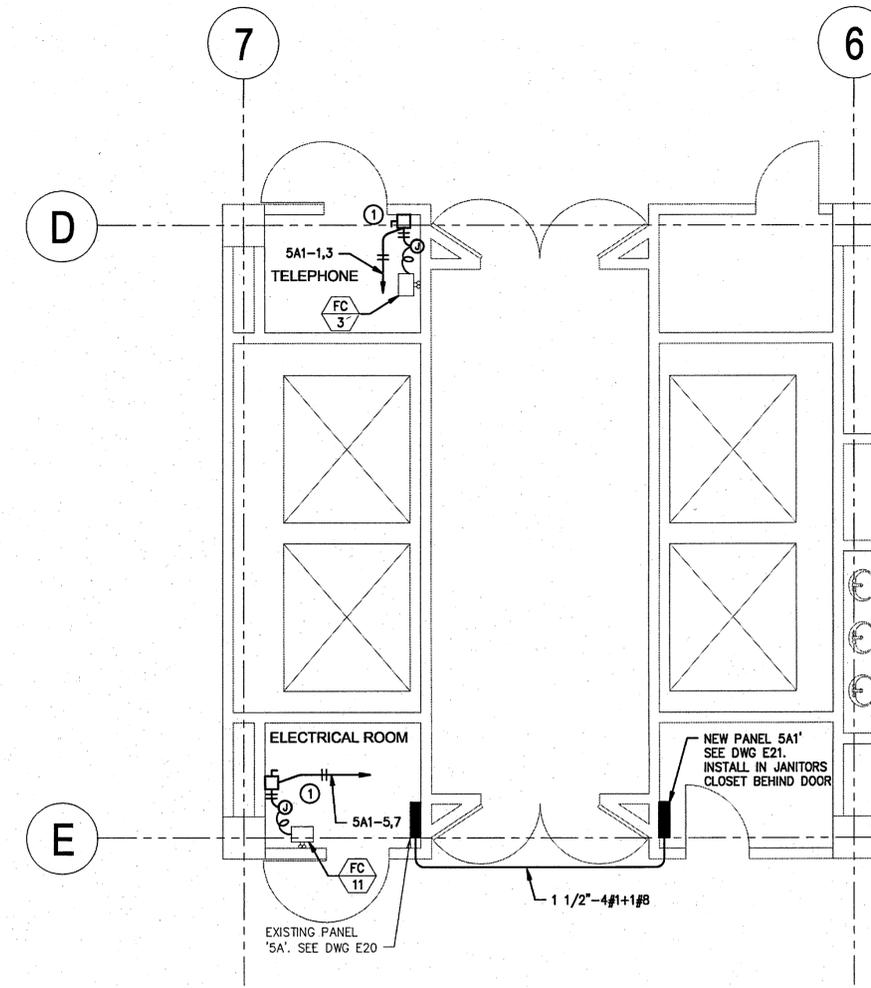


FOURTH FLOOR MECHANICAL/ELECTRICAL PLAN

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

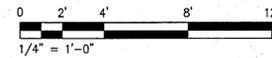


1/4" = 1'-0"



FIFTH FLOOR MECHANICAL/ELECTRICAL PLAN

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



1/4" = 1'-0"

KEYNOTES

- ① INSTALL MECHANICAL CONTRACTOR PROVIDED DISCONNECT SWITCH ON WALL OF ELECTRICAL AND TELEPHONE ROOMS. MAKE FINAL CONNECTIONS TO FAN COIL UNIT. COORDINATE LOCATION OF DISCONNECT SWITCH IN ROOM WITH OWNER TO MINIMIZE DISRUPTION AND EQUIPMENT DISPLACEMENT IN ROOM.

APPROXIMATE EQUIPMENT WEIGHTS ARE AS FOLLOWS:
 NEW PANELBOARDS = 300 LBS EACH
 CONTRACTOR SHALL SUBMIT FINAL RESPECTIVE EQUIPMENT WEIGHTS AND ANCHORAGE/METHOD OF CONNECTION TO BUILDING STRUCTURE TO CITY DSD STRUCTURAL REVIEWER FOR APPROVAL PRIOR TO INSTALLATION.

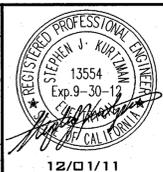
FUNDING CIP/SAP		SPEC. NO.		E18
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES				
MECHANICAL/ELECTRICAL PLANS SHEET 2				
CITY OF SAN DIEGO, CALIFORNIA			W.B.S. B-00952, B-10008 B-10010	
SHEET 01 OF 66 SHEETS				
APPROVED BY:	DATE:	APPROVED BY:	DATE:	SECTION HEAD:
FOR CITY ENGINEER	3/9/12	FOR CITY ENGINEER	12/08/2011	PROJECT MANAGER
CHECKED BY:		CHECKED BY:		CCS27 COORDINATE
CONSTRUCTION ENGINEER		CONSTRUCTION ENGINEER		CCS83 COORDINATE
CHECKED BY:		CHECKED BY:		
INSPECTOR		INSPECTOR		
AS-BUILTS		AS-BUILTS		
CONTRACTOR	DATE STARTED:	CONTRACTOR	DATE COMPLETED:	36392-61-D
INSPECTOR		INSPECTOR		

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT

TURPIN & RATTAN
 ENGINEERING, INC.
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA MESA, CA 91941-5221
 619 / 466 / 6224 FAX 466 / 6253
 E-MAIL: ENGINEER@TRRINC.COM

SCALE: HORIZONTAL NO SCALE
 1/4" = 1'-0" VERTICAL NO SCALE



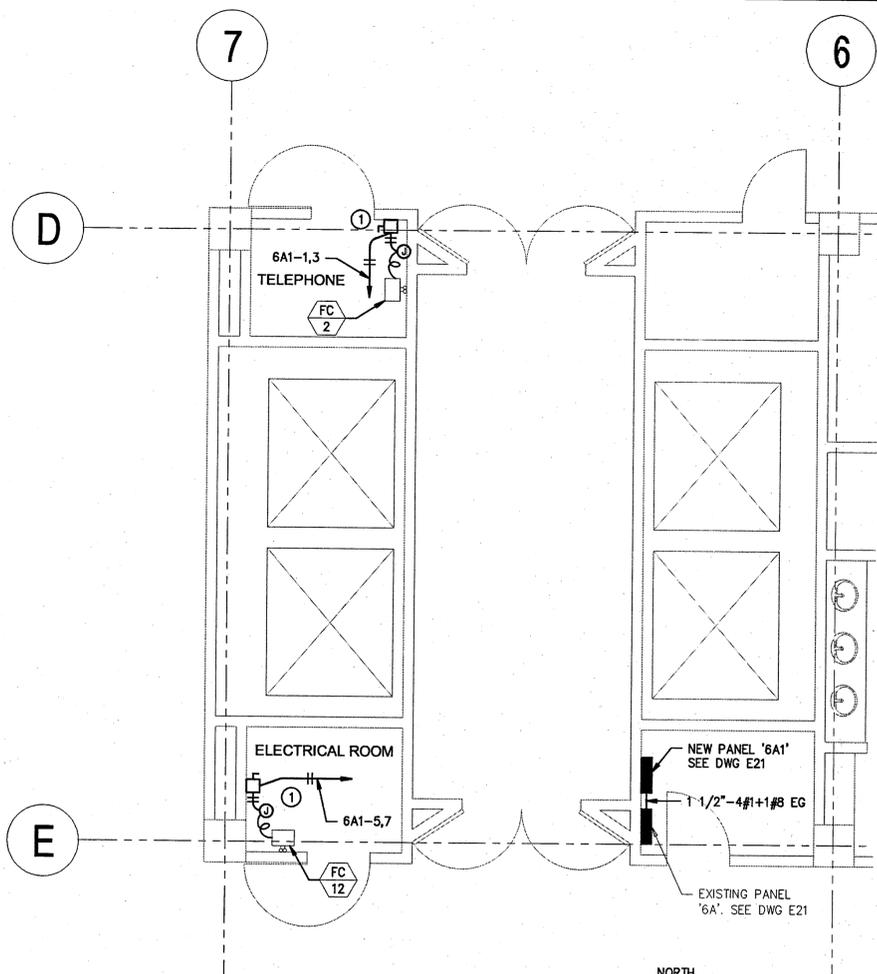
CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



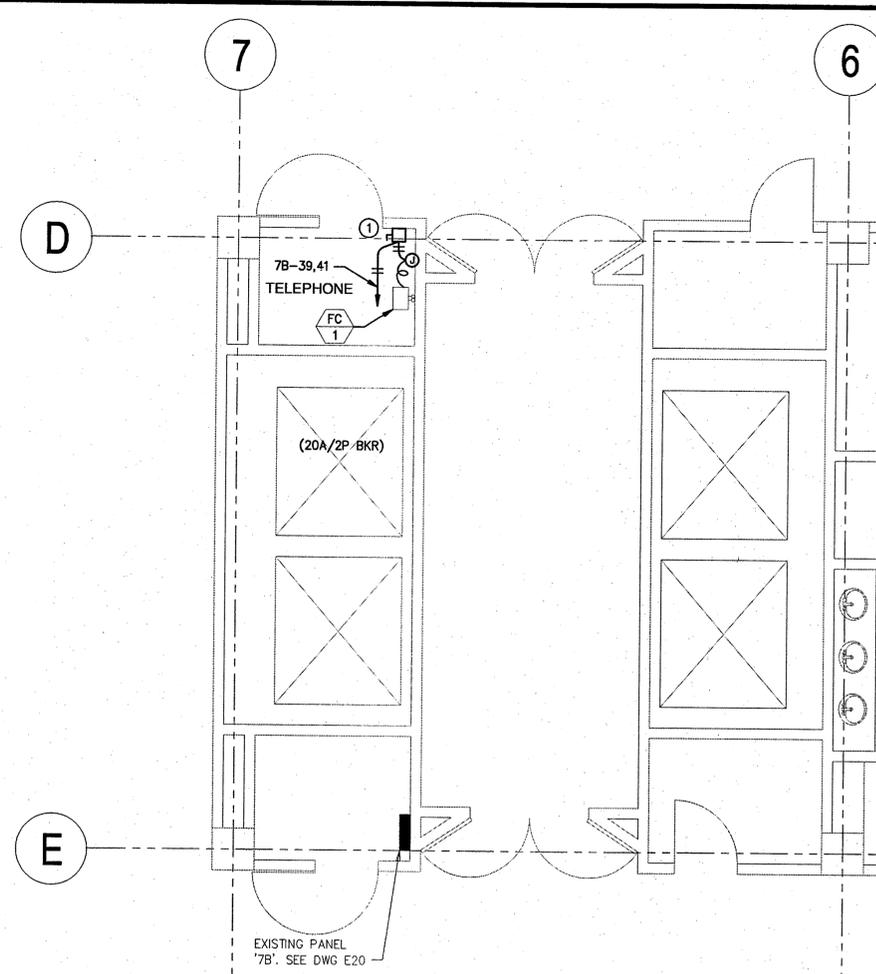
WARNING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

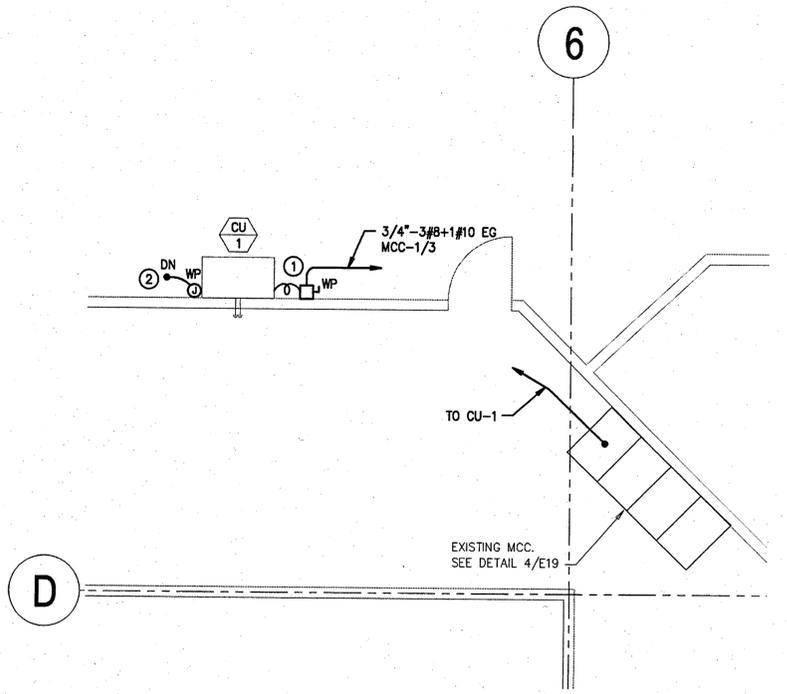
APPROVED BY: FOR CITY ENGINEER
 CHECKED BY: CONSTRUCTION ENGINEER
 CHECKED BY: INSPECTOR



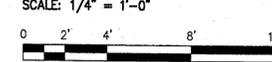
SIXTH FLOOR MECHANICAL/ELECTRICAL PLAN 1
SCALE: 1/4" = 1'-0"



SEVENTH FLOOR MECHANICAL/ELECTRICAL PLAN 2
SCALE: 1/4" = 1'-0"



MECHANICAL/ELECTRICAL ROOF PLAN 3
SCALE: 1/4" = 1'-0"



- KEYNOTES**
- INSTALL MECHANICAL CONTRACTOR PROVIDED DISCONNECT SWITCH ON WALL OF ELECTRICAL AND TELEPHONE ROOMS. MAKE FINAL CONNECTIONS TO FAN COIL UNIT. COORDINATE LOCATION OF DISCONNECT SWITCH IN ROOM WITH OWNER TO MINIMIZE DISRUPTION AND EQUIPMENT DISPLACEMENT IN ROOM.
 - PROVIDE (1) 3/4" C.O. BETWEEN CU-1 AND ALL FAN COIL UNITS, AND LOCAL CONTROL PANEL IN WATCH COMMANDERS OFFICE FOR MECHANICAL CONTRACTOR PROVIDED AND INSTALLED CONTROL WIRING. SEE MECHANICAL DRAWING CONTROL DIAGRAM.

(SPACE)	STARTER	STARTER	(SPACE)
	SEL SW.		(SPACE)
STARTER	STARTER	STARTER	(SPACE)
SEE NOTE ①	STARTER	STARTER	(SPACE)
STARTER	STARTER	STARTER	(SPACE)
INCOMING LUGS	STARTER	STARTER	(SPACE)

EXISTING SIEMENS-ALLIS 480V MOTOR CONTROL CENTER 'MCC'

- DETAILS NOTES**
- REMOVE EXISTING CIRCUIT BREAKER THIS SPACE. PROVIDE NEW 480V/40A/3P BREAKER. INSTALL AND CONNECT FEEDER TO CL-1. PROVIDE NEW NAMEPLATE, AND PATCH HOLE IN COMPARTMENT DOOR.

MCC ELEVATION 4
NO SCALE

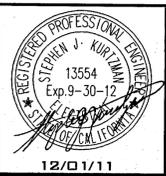
APPROXIMATE EQUIPMENT WEIGHTS ARE AS FOLLOWS:
NEW PANELBOARDS = 350 LBS EACH
CONTRACTOR SHALL SUBMIT FINAL RESPECTIVE EQUIPMENT WEIGHTS AND ANCHORAGE/METHOD OF CONNECTION TO BUILDING STRUCTURE TO CITY DSD STRUCTURAL REVIEWER FOR APPROVAL PRIOR TO INSTALLATION.

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
TREP # 09292.00

TURPIN & RATTAN
ENGINEERING, INC.
CONSULTING ENGINEERS
4719 PALM AVENUE
LA MESA, CA 91941-9221
619 / 466 / 8224 FAX 660 / 6833
E-MAIL: ENR@TURPINRATTAN.COM

SCALE: 1/4" = 1'-0"
HORIZONTAL: NO SCALE
VERTICAL: NO SCALE



CITY OF SAN DIEGO
PUBLIC WORKS PROJECT



WARNING
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:	FOR CITY ENGINEER
CHECKED BY:	CONSTRUCTION ENGINEER
INSPECTOR	INSPECTOR

FUNDING CIP/SAP	SPEC. NO.	E19
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
MECHANICAL/ELECTRICAL PLANS SHEET 3		
CITY OF SAN DIEGO, CALIFORNIA SHEET 62 OF 66 SHEETS		V.B.S. B-00952, B-10009 B-10010
FOR CITY ENGINEER	DATE	SECTION HEAD
DESCRIPTION	BY	APPROVED
DSD BACKCHECK	MJA	12/08/2011
AS-BUILTS	DATE STARTED	DATE COMPLETED
CONTRACTOR	INSPECTOR	36392-62-D

NEW PANEL

MOUNTING: SURFACE
ENTER CABINET AT: TOP
VOLTAGE: 120/208V 3Ø 4W

PANEL '4A1'

MAIN: 100A/3P BKR
TYPE: BOLT-ON
BUSSING: 100 AMP AIC: 10K

LOCATION	VOLT-AMPERES			L T G	R E C	M I S	BKR	BKR	M I S	L T G	VOLT-AMPERES			LOCATION
	#A	#B	#C								#A	#B	#C	
FC-4	60						1 15 2	1 1 2				300		VAV BOXES
		60					3 4	4 1 20				300		VAV BOXES
FC-10			60				1 15 2	5 6				300		VAV BOXES
	60						7 8	8 1 20						SPARE
SPARE							9 10	10 1 20						SPARE
SPARE							11 12	12 1 20						SPARE
SPARE							13 14	14 1 20						SPARE
SPARE							15 16	16 1 20						SPARE
SPARE							17 18	18 1 20						SPARE
SPARE							19 20	20 1 20						SPARE
SPARE							21 22	22 1 20						SPARE
SPARE							23 24	24 1 20						SPARE
SPACE							25 26							SPACE
SPACE							27 28							SPACE
SPACE							29 30							SPACE
SUBTOTAL	120	60	60									300	300	300
TOTAL VOLT-AMPERES/PHASE #A= 420 VA #B= 360 VA #C= 360 VA														
TOTAL PANEL VOLT-AMPERES: 1140 VA + LCL 285 VA= 1425 VA AMPS= 4														

PROVIDE PANEL WITH 100% NEUTRAL BUS AND 50% GROUND BUS.
Δ SPLICE AND EXTEND EXISTING 20A/1P CIRCUITS TO POSITIONS 2,4,&6. UPDATE SCHEDULE.

NEW PANEL

MOUNTING: SURFACE
ENTER CABINET AT: TOP
VOLTAGE: 120/208V 3Ø 4W

PANEL '5A1'

MAIN: 100A/3P BKR
TYPE: BOLT-ON
BUSSING: 100 AMP AIC: 10K

LOCATION	VOLT-AMPERES			L T G	R E C	M I S	BKR	BKR	M I S	L T G	VOLT-AMPERES			LOCATION
	#A	#B	#C								#A	#B	#C	
FC-3	60						1 15 2	1 1 2				720		RM 556,557 RECS
		60					3 4	4 1 20				180		RM 556 REC
FC-11			75				1 15 2	5 6				720		RM 556,558 RECS
	75						7 8	8 1 20						SPARE
SPARE							9 10	10 1 20						SPARE
SPARE							11 12	12 1 20						SPARE
SPARE							13 14	14 1 20						SPARE
SPARE							15 16	16 1 20						SPARE
SPARE							17 18	18 1 20						SPARE
SPARE							19 20	20 1 20						SPARE
SPARE							21 22	22 1 20						SPARE
SPARE							23 24	24 1 20						SPARE
SPACE							25 26							SPACE
SPACE							27 28							SPACE
SPACE							29 30							SPACE
SPACE							31 32							SPACE
SPACE							33 34							SPACE
SPACE							35 36							SPACE
SPACE							37 38							SPACE
SPACE							39 40							SPACE
SPACE							41 42							SPACE
SUBTOTAL	135	60	75									720	180	720
TOTAL VOLT-AMPERES/PHASE #A= 855 VA #B= 240 VA #C= 795 VA														
TOTAL PANEL VOLT-AMPERES: 1890 VA + LCL VA= 2363 VA AMPS= 7														

PROVIDE PANEL WITH 100% NEUTRAL BUS AND 50% GROUND BUS.
Δ SPLICE AND EXTEND (3) EXISTING 20A/1P CIRCUITS OVER TO THIS NEW PANEL. UPDATE PANEL SCHEDULES ACCORDINGLY.

NEW PANEL

MOUNTING: SURFACE
ENTER CABINET AT: SIDE
VOLTAGE: 120/208V 3Ø 4W

PANEL '6A1'

MAIN: 100A/3P BKR
TYPE: BOLT-ON
BUSSING: 100 AMP AIC: 10K

LOCATION	VOLT-AMPERES			L T G	R E C	M I S	BKR	BKR	M I S	L T G	VOLT-AMPERES			LOCATION
	#A	#B	#C								#A	#B	#C	
FC-2	60						1 15 2	1 1 2				1000		COPIER
		60					3 4	4 1 20						SPARE
FC-12			70				1 15 2	5 6						SPARE
	70						7 8	8 1 20						SPARE
SPARE							9 10	10 1 20						SPARE
SPARE							11 12	12 1 20						SPARE
SPARE							13 14	14 1 20						SPARE
SPARE							15 16	16 1 20						SPARE
SPARE							17 18	18 1 20						SPARE
SPARE							19 20	20 1 20						SPARE
SPARE							21 22	22 1 20						SPARE
SPARE							23 24	24 1 20						SPARE
SPACE							25 26							SPACE
SPACE							27 28							SPACE
SPACE							29 30							SPACE
SUBTOTAL	130	60	70									1000		
TOTAL VOLT-AMPERES/PHASE #A= 1130 VA #B= 60 VA #C= 70 VA														
TOTAL PANEL VOLT-AMPERES: 1260 VA + LCL 315 VA= 1575 VA AMPS= 4														

PROVIDE PANEL WITH 100% NEUTRAL BUS AND 50% GROUND BUS.
Δ SPLICE AND EXTEND EXISTING 20A/1P CIRCUITS OVER TO THIS NEW PANEL. UPDATE PANEL SCHEDULES ACCORDINGLY.

EXISTING

MOUNTING: SURFACE
ENTER CABINET AT: TOP
VOLTAGE: 120/208V 3Ø 4W

PANEL '5A1'

MAIN: LUGS ONLY
TYPE: BOLT-ON
BUSSING: 225 AMP AIC: 10K

LOCATION	VOLT-AMPERES			L T G	R E C	M I S	BKR	BKR	M I S	L T G	VOLT-AMPERES			LOCATION
	#A	#B	#C								#A	#B	#C	
EXIST LOAD							20 1 1	2 3	100 1			855		PANEL '5A1'
EXIST LOAD							20 1 3	4				240		
EXIST LOAD							20 1 5	6				795		
EXIST LOAD							20 1 7	8						EXIST LOAD
EXIST LOAD							20 1 9	10						EXIST LOAD
EXIST LOAD							20 1 11	12						EXIST LOAD
EXIST LOAD							20 1 13	14						EXIST LOAD
EXIST LOAD							20 1 15	16						EXIST LOAD
EXIST LOAD							20 1 17	18						EXIST LOAD
EXIST LOAD							20 1 19	20						EXIST LOAD
EXIST LOAD							20 1 21	22						EXIST LOAD
EXIST LOAD							20 1 23	24						EXIST LOAD
EXIST LOAD							20 1 25	26						EXIST LOAD
EXIST LOAD							20 1 27	28						EXIST LOAD
EXIST LOAD							20 1 29	30						EXIST LOAD
EXIST LOAD							20 1 31	32						EXIST LOAD
EXIST LOAD							20 1 33	34						EXIST LOAD
EXIST LOAD							20 1 35	36						EXIST LOAD
EXIST LOAD							20 1 37	38						EXIST LOAD
EXIST LOAD							20 1 39	40						EXIST LOAD
EXIST LOAD							20 1 41	42						EXIST LOAD
SUBTOTAL														
TOTAL VOLT-AMPERES/PHASE #A= VA #B= VA #C= VA														
TOTAL PANEL VOLT-AMPERES: VA + LCL VA= VA AMPS=														

Δ PROVIDE 100A/3P BREAKER TO MATCH EXISTING. REMOVE EXISTING CIRCUITS 2,4,&6. SPLICE AND EXTEND OVER TO NEW PANEL '5A1' CIRCUITS 2,4,&6. UPDATE PANEL SCHEDULES ACCORDINGLY.

EXISTING

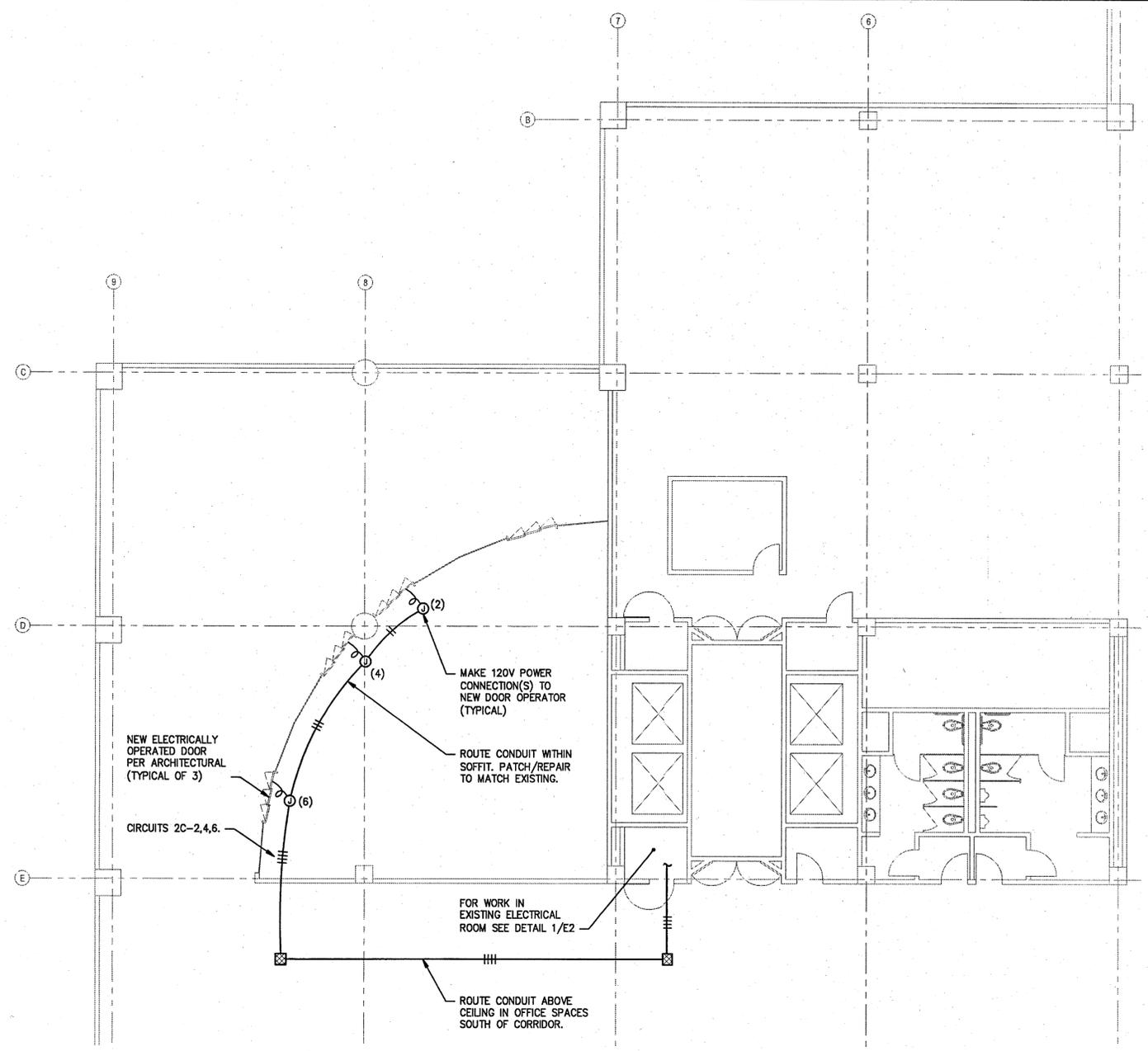
MOUNTING: SURFACE
ENTER CABINET AT: SIDE
VOLTAGE: 120/208V 3Ø 4W

PANEL '6A1'

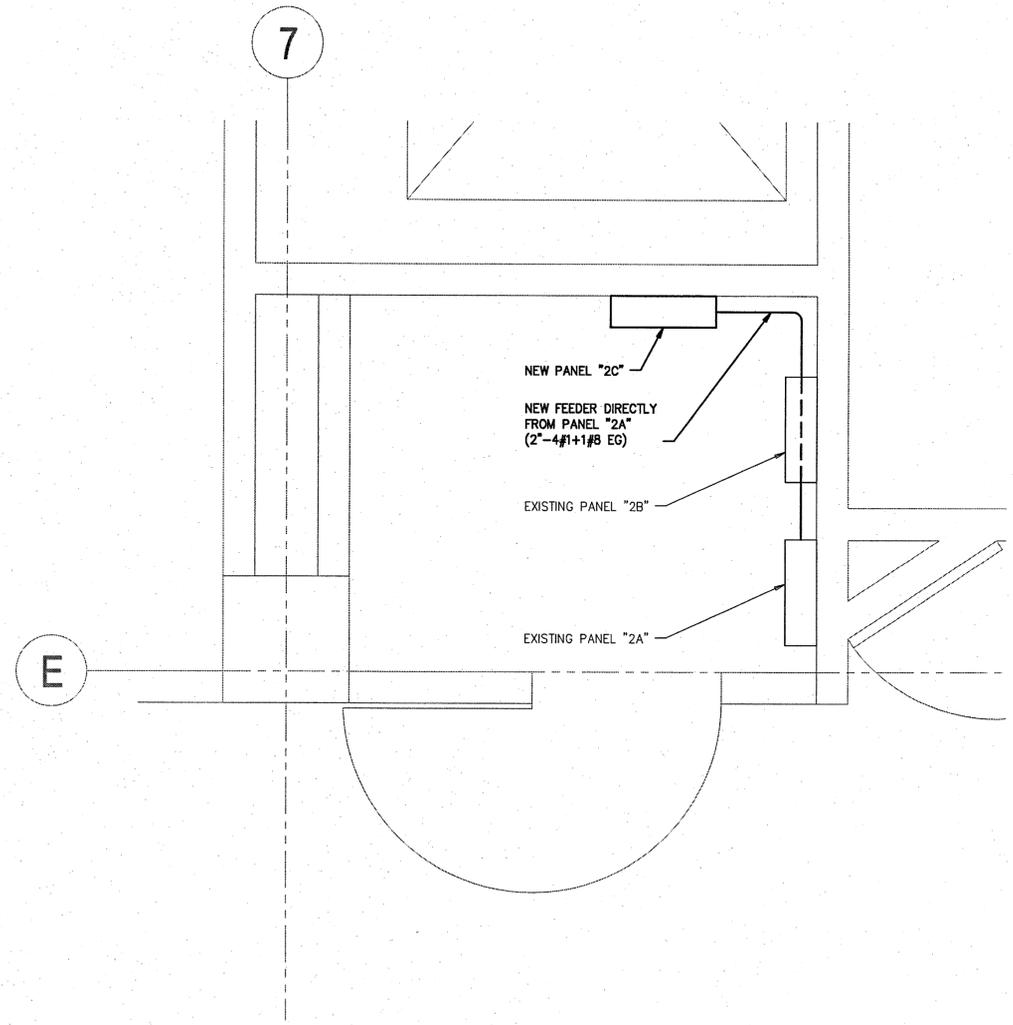
MAIN: LUGS ONLY
TYPE: BOLT-ON
BUSSING: 225 AMP AIC: 10K

LOCATION	VOLT-AMPERES			L T G	R E C	M I S	BKR	BKR	M I S	L T G	VOLT-AMPERES			LOCATION
	#A	#B	#C								#A	#B	#C	
EXIST LOAD							20 1 1	2	100 1			1130		PANEL '6A1'
EXIST LOAD							20 1 3	4				60		
EXIST LOAD							20 1 5	6				70		
EXIST LOAD							20 1 7	8						EXIST LOAD
EXIST LOAD							20 1 9	10						EXIST LOAD
EXIST LOAD							20 1 11	12						EXIST LOAD
EXIST LOAD							20 1 13	14						EXIST LOAD
EXIST LOAD							20 1 15	16						EXIST LOAD
EXIST LOAD							20 1 17	18						EXIST LOAD
EXIST LOAD							20 1 19	20						EXIST LOAD
EXIST LOAD							20 1 21	22						EXIST LOAD
EXIST LOAD							20 1 23	24						EXIST LOAD
EXIST LOAD							20 1 25	26						EXIST LOAD
EXIST LOAD							20 1 27	28						EXIST LOAD
EXIST LOAD							20 1 29	30						EXIST LOAD
EXIST LOAD							20 1 31	32						EXIST LOAD
EXIST LOAD							20 1 33	34						EXIST LOAD
EXIST LOAD							20 1 35	36						EXIST LOAD
EXIST LOAD							20 1 37	38						EXIST LOAD
EXIST LOAD							20 1 39	40						EXIST LOAD
EXIST LOAD							20 1 41	42						EXIST LOAD
SUBTOTAL														
TOTAL VOLT-AMPERES/PHASE #A= VA #B= VA #C= VA														
TOTAL PANEL VOLT-AMPERES: VA + LCL VA= VA AMPS=														

Δ PROVIDE 100A/3P BREAKER TO MATCH EXISTING. DISCONNECT COPIER CIRCUIT #32. SPLICE AND EXTEND OVER TO NEW PANEL '6A1' CIRCUITS #2. UPDATE PANEL SCHEDULE.



LEVEL 2 PARTIAL PLAN
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16' 24'
 1/8" = 1'-0"



LEVEL 2 ELECTRICAL ROOM LARGE SCALE PLAN
 SCALE: 3/4" = 1'-0"
 0 1' 2' 4'
 3/4" = 1'-0"

APPROXIMATE EQUIPMENT WEIGHTS ARE AS FOLLOWS:
 NEW PANELBOARD = 350 LBS
 CONTRACTOR SHALL SUBMIT FINAL RESPECTIVE EQUIPMENT WEIGHTS AND ANCHORAGE/METHOD OF CONNECTION TO BUILDING STRUCTURE TO CITY DSD STRUCTURAL REVIEWER FOR APPROVAL PRIOR TO INSTALLATION.

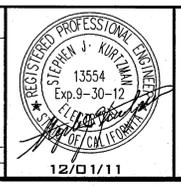
FUNDING CIP/SAP	SPEC. NO.	E22
PLANS FOR THE CONSTRUCTION OF POLICE HEADQUARTERS - LEVEL 2 ENTRY, PLUMBING AND ELECTRICAL UPGRADES		
LEVEL 2 ENTRY		
CITY OF SAN DIEGO, CALIFORNIA		W.B.S. B-00952, B-10008
SHEET 06 OF 66 SHEETS		B-10010
FOR CITY ENGINEER	DATE	SECTION HEAD
DESCRIPTION	BY	APPROVED
DSD BACKCHECK	NDA	12/08/2011
AS-BUILTS		
CONTRACTOR INSPECTOR	DATE STARTED	36392-65-D
	DATE COMPLETED	

CONSTRUCTION CHANGE / ADDENDUM			
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.

CONSULTANT
TURPIN & RATTAN
 ENGINEERING, INC.
 CONSULTING ENGINEERS
 4719 PALM AVENUE
 LA MESA, CA 91941-5221
 619 / 466 / 6224 FAX 466 / 6233
 E-MAIL: ENGINEER@TRRSD.COM

SCALE
 HORIZONTAL 1/4" = 1'-0"
 VERTICAL NO SCALE

TREI # 09292.00



CITY OF SAN DIEGO PUBLIC WORKS PROJECT

REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA
 13554
 Exp. 9-30-12
 12/01/11

WARNING
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

APPROVED BY:	FOR CITY ENGINEER
CHECKED BY:	CONSTRUCTION ENGINEER
	INSPECTOR

MOUNTING: SURFACE
ENTER CABINET AT: TOP
VOLTAGE: 120/208V 3Ø 4W

**EXISTING
PANEL '2A'**

MAIN: LUGS ONLY
TYPE: BOLT-ON
BUSSING: 225 AMP AIC: 10K

LOCATION	VOLT-AMPERES			L T G	R E C	M I S	B K R	A B C	B K R	M I S	R E C	L T G	VOLT-AMPERES			LOCATION
	#A	#B	#C										#A	#B	#C	
EXISTING LOAD								20 1 1	2 1 20							EXISTING LOAD
EXISTING LOAD								20 1 3	4 1 20							EXISTING LOAD
EXISTING LOAD								20 1 5	6 1 20							EXISTING LOAD
EXISTING LOAD								20 1 7	8 1 20							EXISTING LOAD
EXISTING LOAD								20 1 9	10 1 20							EXISTING LOAD
EXISTING LOAD								20 1 11	12 1 20							EXISTING LOAD
EXISTING LOAD								20 1 13	14 1 20							EXISTING LOAD
EXISTING LOAD								20 1 15	16 1 20							EXISTING LOAD
EXISTING LOAD								20 1 17	18 1 20							EXISTING LOAD
EXISTING LOAD								20 1 19	20 1 20							EXISTING LOAD
EXISTING LOAD								20 1 21	22 1 20							EXISTING LOAD
EXISTING LOAD								20 1 23	24 1 20							EXISTING LOAD
EXISTING LOAD								20 1 25	26 1 20							EXISTING LOAD
EXISTING LOAD								20 1 27	28 1 20							EXISTING LOAD
EXISTING LOAD								20 1 29	30 1 20							EXISTING LOAD
EXISTING LOAD								20 1 31	32 1 20							EXISTING LOAD
EXISTING LOAD								20 1 33	34 1 20							SPARE
EXISTING LOAD								20 1 35	36 1 20							EXISTING LOAD
PANEL '2C'	1240						1	100	3 37	38	1	20				EXISTING LOAD
		1180								39	1	20				EXISTING LOAD
			1360							41	1	20				EXISTING LOAD
										42	1	20				EXISTING LOAD
SUBTOTAL																SUBTOTAL
TOTAL VOLT-AMPERES/PHASE	#A= 7960	VA	#B= 11260	VA	#C= 9160	VA										
TOTAL PANEL VOLT-AMPERES:	28380	VA + LCL	7095	VA=	35475	VA										AMPS= 99

LOADS ON PANEL MEASURED AT 8:35AM ON FEBRUARY 1, 2011.
 PHASE 'A' = 56 AMPS
 PHASE 'B' = 84 AMPS
 PHASE 'C' = 65 AMPS
 *TRANSFER (3) EXISTING 20A/1P LOADS TO NEW PANEL '2C', CIRCUITS 1,3,&5. REMOVE (3) 20A/1P BREAKERS
 ADD NEW 100A/3P BREAKER.

MOUNTING: SURFACE
ENTER CABINET AT: BOTTOM
VOLTAGE: 120/208V 3Ø 4W

PANEL '2C'

MAIN: 100A/3P BKR
TYPE: BOLT-ON
BUSSING: 100 AMP AIC: 10K

LOCATION	VOLT-AMPERES			L T G	R E C	M I S	B K R	A B C	B K R	M I S	R E C	L T G	VOLT-AMPERES			LOCATION
	#A	#B	#C										#A	#B	#C	
*REC RM 256	240							20 1 1	2 3 20	1			1000			LOBBY DOOR #1
*REC RM 251		180						20 1 3	4				1000			LOBBY DOOR #2
*RECS RM 251 & 257			360					20 1 5	6				1000			LOBBY DOOR #3
SPARE								20 1 7	8	1	20					SPARE
SPARE								20 1 9	10	1	20					SPARE
SPARE								20 1 11	12	1	20					SPARE
SPARE								20 1 13	14	1	20					SPARE
SPARE								20 1 15	16	1	20					SPARE
SPARE								20 1 17	18	1	20					SPARE
SPACE								20 1 19	20							SPACE
SPACE								20 1 21	22							SPACE
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SPACE								20 1 69	70							SPACE
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SPACE								20 1 199	200							