

City of San Diego

CONTRACTOR'S NAME: _____
ADDRESS: _____
TELEPHONE NO.: _____ FAX NO.: _____
CITY CONTACT: Jihad Sleiman, 600 B St., Suite 800, MS 908A, San Diego, CA 92101-4520
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NB/LS/CA

CONTRACT DOCUMENTS



FOR

MISSION BEACH LIFEGUARD STATION

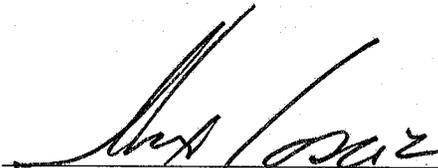
VOLUME 1 OF 2

BID NO.: _____ L-12-5651-DBB-2
SAP NO. (WBS/IO/CC): _____ S-00793
CLIENT DEPARTMENT: _____ 2113/1912
COUNCIL DISTRICT: _____ 2
PROJECT TYPE: _____ GE

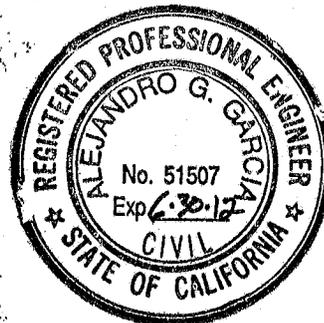
THIS CONTRACT IS SUBJECT TO THE FOLLOWING:

- THE CITY'S SUBCONTRACTING PARTICIPATION REQUIREMENTS FOR SLBE PROGRAM.
- COMPETITION RESTRICTED TO: SLBE-ELBE FIRMS ONLY.

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 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.
9.	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
10.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Form BB05 - Work Force Report
11.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contract Forms - Agreement

REQUIRED DOCUMENTS SCHEDULE

ITEM	WHEN	BY	WHAT
12.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contract Forms - Payment and Performance Bond
13.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Certificates of Insurance and Endorsements
14.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contractor Certification - Drug-Free Workplace
15.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contractor Certification - American with Disabilities Act
16.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY BIDDER OF CONTRACT FORMS	APPARENT LOW BIDDER	Contractors Standards - Pledge of Compliance
17.	BY 5th OF EACH MONTH	CONTRACTOR	Form CC20 - Monthly Employment Report
18.	BY 5th OF EACH MONTH	CONTRACTOR	Form CC25 - Monthly Invoicing Report
19.	PRIOR TO ACCEPTANCE	CONTRACTOR	Form CC10 - Contract Change Order (CCO)
20.	PRIOR TO ACCEPTANCE	CONTRACTOR	Form CC15 - Final Summary Report
21.	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 EOC 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 EOC 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. **SUBCONTRACTING PARTICIPATION PERCENTAGES.** The City has incorporated voluntary subcontractor participation percentage to enhance competition and maximize subcontracting opportunities as follows.
 - 3.1. The following voluntary subcontractor participation percentage for DBE, DVBE, WBE, MBE, SLBE, and ELBE certified Subcontractors shall apply to this contract:

Total voluntary subcontractor participation percentage for this project is 10.3%.
 - 3.2. For the purpose of achieving the voluntary subcontractor participation level (percentage), Additive, Deductive, and Allowance Bid Items will not be included in the calculation.

4. **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 prospective Bidders of the submittal requirements and provisions relative to the Small Local Business Enterprise Program. Bidders are strongly encouraged to attend the Pre-Bid Conference to better understand the requirements of this contract.

5. **RESOURCES.** The current list of certified SLBE-ELBE firms can be found on the Equal Opportunity Contracting Program 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 1:30 PM on April 10th, 2012** for performing work on the following project:

MISSION BEACH LIFEGUARD STATION

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:

The scope of work will include but is not limited to the alteration & addition to construct a modernized male/female locker rooms, a unisex accessible restroom, and increase the storage capacity at the Mission Beach Lifeguard Station.

The Work shall be performed in accordance **32848-1-D through 32848-39-D**, inclusive.

- Bid No. **L-12-5651-DBB-2**

3. **ENGINEER'S ESTIMATE:** The Engineer's estimate of the most probable price for this contract is in the range of **\$250,001. to \$500,000.**
4. **LOCATION OF WORK:** The location of Work is Citywide unless specified otherwise as follows:

3140 Ocean Front Walk, San Diego California 92109

5. **CONTRACT TIME:** The Contract Time for completion of the Work shall be **66 Working Days.**
6. **SUPPLEMENTAL AGREEMENTS:** Supplemental agreements attached to this contract for the items of Work such as extended re-vegetation maintenance and monitoring and emulsion aggregate slurry shall be signed upon the request from the Engineer and prior to Acceptance. The signed agreements shall be accompanied by the evidence of separate bond (i.e., labor and materials) and insurance (i.e., Commercial General Liability Insurance, Commercial Automobile Liability Insurance, and Workers' Compensation Insurance) as specified in 2-4, "CONTRACT BONDS," 7-3, "LIABILITY INSURANCE," and 7-4 WORKERS' COMPENSATION INSURANCE. Bonds shall be in amount of the Contract Price for the Work included in the supplemental agreements.
7. **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**

- 8. 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 March 28th, 2012.**

All potential bidders are encouraged to attend.

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.

9. CITY PROJECT MANAGER CONTACT INFORMATION:

See the cover of the Contract Documents.

- 10. REFERENCE STANDARDS:** Except as otherwise noted or specified, the Work shall be completed in accordance with the following standards:

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 *
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>.

11. PRE-BID SITE VISIT: The prospective Bidders are encouraged 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: **11:00 A.M.**
Date: **MARCH 28, 2012**
Location: **Mission Beach Lifeguard Station, Belmont Park, Mission Bay
3140 Ocean Front Walk, San Diego California 92109**

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: <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 APR CONSTRUCTION, INC., herein called "Contractor" for construction of Mission Beach Lifeguard Station; Bid No. L-12-5651-DBB-2, in the amount of THREE HUNDRED EIGHT-SEVEN THOUSAND DOLLARS AND 00/100 (\$387,000.00), which is comprised of the Base Bid.

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 Mission Beach Lifeguard Station, on file in the Public Works Department as Document No. S-00793, 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 Mission Beach Lifeguard Station, Bid Number L-12-5651-DBB-2, 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.

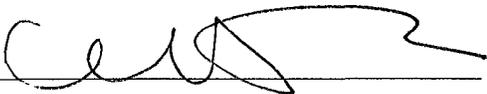
**CONTRACT FORMS (continued)
AGREEMENT**

IN WITNESS WHEREOF, this agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Municipal Code §22.3612 authorizing such execution.

THE CITY OF SAN DIEGO

APPROVED AS TO FORM AND LEGALITY

Jan I. Goldsmith, City Attorney

By 

By 

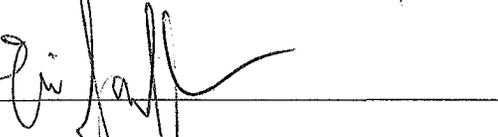
Print Name: _____
Downs Prior
Principal Contract Specialist

Print Name: Christina L. Rae
Deputy City Attorney

Date: 7/10/12

Date: 7/11/12

CONTRACTOR

By 

Print Name: ERIC SCARBROUGH

Title: PRESIDENT

Date: 4/27/12

City of San Diego License No.: B20070031664

State Contractor's License No.: 940651

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

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:

APR CONSTRUCTION, INC. _____, a corporation, as principal, and
American Safety Casualty 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
THREE HUNDRED EIGHTY-SEVEN THOUSAND DOLLARS AND 00/100 (\$387,000.00) for
the faithful performance of the annexed contract, and in the sum of **THREE HUNDRED EIGHTY-**
SEVEN THOUSAND DOLLARS AND 00/100 (\$387,000.00) for the benefit of laborers and
materialmen designated below,

Conditions:

If the Principal shall faithfully perform the annexed contract **Mission Beach Lifeguard Station**, Bid Number **L-12-5651-DBB-2**, 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

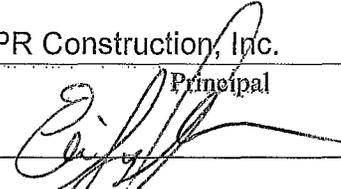
The Surety shall pay reasonable attorney's fees should suit be brought to enforce the provisions of this bond.

Dated April 27th, 2012

Approved as to Form and Legality

APR Construction, Inc.

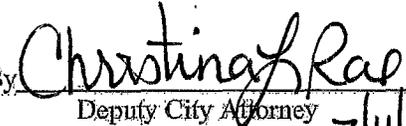
Principal

By 

Eric Scarborough

Printed Name of Person Signing for Principal

Jan I. Goldsmith, City Attorney

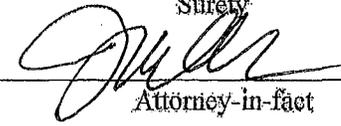
By 

Deputy City Attorney

7/11/12

American Safety Casualty Insurance Company

Surety

By 

Attorney-in-fact Juliana E. Dahlgren

Approved:

By: 

W. Downs Prior
Principal Contract Specialist
Public Works Contracting

7/11/12

Local Address of Surety

23901 Calabasas Rd, Ste 1085 Calabasas, CA 91302

Local Address (City, State) of Surety

(818) 449-3110

Local Telephone No. of Surety

Premium \$ 8,740.00

Bond No. LAX711701

"See attached notary acknowledgement"

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

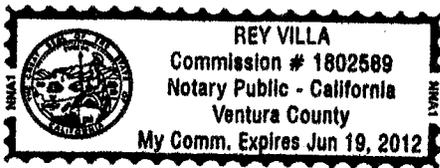
State of California

County of Los Angeles

On 4/27/12
Date

before me, Rey Villa, Notary Public
Here Insert Name and Title of the Officer

personally appeared Juliana E. Dahlgren, Attorney In Fact
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/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 Rey Villa
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.

Description of Attached Document

Title or Type of Document: Performance & Payment Bond # LAX711701

Document Date: 4/27/12 Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Juliana E. Dahlgren

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



Signer Is Representing: _____

Signer's Name: _____

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



Signer Is Representing: _____



NUMBER
LAX711701

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS that American Safety Casualty Insurance Company has made, constituted and appointed, and by these presents does make, constitute and appoints

Juliana E. Dahlgren

its true and lawful attorney-in-fact, for it and its name, place, and stead to execute on behalf of the said Company, as surety, bonds, undertaking and contracts of suretyship to be given to

ALL OBLIGEEES

provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed in amount the sum of
Three Hundred Eighty Seven Thousand Dollars (\$387,000.00)

This Power of Attorney is granted and is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company of the 6th day of August, 2009.

RESOLVED, that the President in conjunction with the Secretary or any Assistant Secretary may appoint attorneys-in-fact or agents with authority as defined or limited in the instrument evidencing the appointment in each case, for and on behalf of the Company, to execute and deliver and affix the seal of the Company to bonds, undertakings, recognizances, and suretyship obligations of all kinds; and said officers may remove any such attorney-in-fact or agent and revoke any power of attorney previously granted to such persons.

RESOLVED FURTHER, that any bond, undertaking, recognizance, or suretyship obligation shall be valid and binding upon the company when:
(i) when signed by the President or any Vice-President and attested and sealed (if a seal is required) by any Secretary or Assistant Secretary or (ii) when signed by the President or any Vice-President or Secretary or Assistant Secretary, and counter-signed and sealed (if a seal is required) by a duly authorized attorney-in-fact or agent; or (iii) when duly executed and sealed (if a seal is required) by one or more attorney-in-fact or agents pursuant to and within the limits of the authority evidenced by the power of attorney issued by the Company to such person or persons.

RESOLVED FURTHER, that the signature of any authorized officer and the seal of the Company may be affixed by facsimile to any power of attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company; and such signature and seal when so used shall have the same force and effects as though manually affixed.

IN WITNESS WHEREOF, American Safety Casualty Insurance Company has caused its official seal to be hereunto affixed, and these presents to be signed by its President and attested by its Secretary this 6th day of August, 2009

Attest:

Ambuj Jain
Ambuj Jain



Joseph D. Scollo, Jr.
Joseph D. Scollo, Jr.

STATE OF GEORGIA }
COUNTY OF COBB }

On this 6th day of August, 2009, before me personally came Joseph D. Scollo, Jr., to me known, who, being by me duly sworn, did depose and say that he is the President of American Safety Casualty Insurance Company, the corporation described in and which executed the above instrument; that he knows the seal of the said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation and that he signed his name thereto by like order.

JAMI BAILEY
Notary Public, Hall Co., GA
My Commission Expires Aug. 13, 2012

Jami Bailey
Jami Bailey, Notary Public

I, the undersigned, Secretary of American Safety Casualty Insurance Company, an Oklahoma corporation, DO HEREBY CERTIFY, that the foregoing and attached Power of Attorney remains in full force and has not been revoked; and furthermore that the Resolution of the Board of Directors, set forth in the said Power of Attorney, is now in force.

Signed and sealed in the City of Atlanta, in the State of Georgia

Dated this 27th day of Apr-1 2012



Ambuj Jain
Ambuj Jain

ORIGINALS OF THIS POWER OF ATTORNEY ARE PRINTED WITH RED NUMERICAL NUMBERS
DUPLICATES SHALL HAVE THE SAME FORCE AND EFFECT AS AN ORIGINAL ONLY WHEN ISSUED IN CONJUNCTION WITH THE ORIGINAL

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

State of California

County of San Diego

On 04/27/12 before me, Anita Fournier/Notary Public
(Here insert name and title of the officer)

personally appeared Eric Scarborough

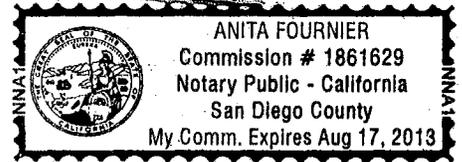
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s),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

Anita Fournier
 Signature of Notary Public

(Notary Seal)



ADDITIONAL OPTIONAL INFORMATION

INSTRUCTIONS FOR COMPLETING THIS FORM

Any acknowledgment completed in California must contain verbiage exactly as appears above in the notary section or a separate acknowledgment form must be properly completed and attached to that document. The only exception is if a document is to be recorded outside of California. In such instances, any alternative acknowledgment verbiage as may be printed on such a document so long as the verbiage does not require the notary to do something that is illegal for a notary in California (i.e. certifying the authorized capacity of the signer). Please check the document carefully for proper notarial wording and attach this form if required.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he/she/they~~, is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
 - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
 - ❖ Indicate title or type of attached document, number of pages and date.
 - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document

<p>DESCRIPTION OF THE ATTACHED DOCUMENT</p> <p><u>Performance Bond and Labor and</u> <small>(Title or description of attached document)</small></p> <p><u>material Men's Bond</u> <small>(Title or description of attached document continued)</small></p> <p><u>Bid # 2-12-5651-DBB2</u> Number of Pages <u>4</u> Document Date <u>04/27/12</u></p> <p>_____ <small>(Additional information)</small></p>
--

<p>CAPACITY CLAIMED BY THE SIGNER</p> <p><input checked="" type="checkbox"/> Individual (s)</p> <p><input checked="" type="checkbox"/> Corporate Officer</p> <p>_____ <small>(Title)</small></p> <p><input type="checkbox"/> Partner(s)</p> <p><input type="checkbox"/> Attorney-in-Fact</p> <p><input type="checkbox"/> Trustee(s)</p> <p><input type="checkbox"/> Other _____</p>

CONTRACTOR CERTIFICATION

DRUG-FREE WORKPLACE

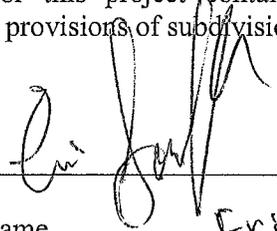
PROJECT TITLE: MISSION BEACH LIFEGUARD STATION

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-17 regarding Drug-Free Workplace as outlined in INSTRUCTION TO BIDDERS, "Drug-Free Workplace", of the project specifications, and that;

APR CONSTRUCTION, INC.

(Name under which business is conducted)

has in place a drug-free 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 subdivisions a) through c) of the policy as outlined.

Signed  _____
Printed Name Eric Scarborough
Title president

CONTRACTOR CERTIFICATION

AMERICAN WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

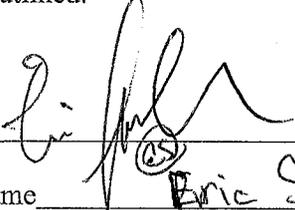
PROJECT TITLE: MISSION BEACH LIFEGUARD STATION

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;

APR CONSTRUCTION, 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 
Printed Name Eric Scarborough
Title President

CONTRACTOR CERTIFICATION

CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

PROJECT TITLE: MISSION BEACH LIFEGUARD STATION

I declare under penalty of perjury that I am authorized to make this certification on behalf of APR CONSTRUCTION, 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 27TH Day of APRIL, 2012.

Signed _____



Printed Name ERIC SCARBROUGH

Title PRESIDENT

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:

MISSION BEACH LIFEGUARD STATION
(Name of Project)

as particularly described in said contract and identified as Bid No. **L-12-5651-DBB-2**; SAP No. (WBS/CC/IO) **S-00793** and **WHEREAS**, the specification of said contract requires 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_____.

by _____ Contractor

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.

ADD: 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 7:00 AM to 5:00 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 DocumentsError! Bookmark not defined.. 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.

ADD the following:

- h) Slurry Seal and Asphalt Overlay Red-Lines: The Contractor shall clearly record on the City provided forms in MS Excel format the actual dates and quantity of each Bid item applied to each street segment and comments regarding each segment. The Contractor shall record reasons if no work is performed.

2-5.5 As-built Drawings. ADD the following:

As-built Drawings shall be the responsibility of the Contractor.

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.

2-7 SUBSURFACE DATA. ADD the following:

In preparation of the Contract Documents, the designer has relied upon the following reports of explorations and tests of subsurface conditions at the Work Site:

1. Report of Geotechnical Evaluation dated November 25, 2003 by Ninyo & Moore, please contact Project Manager Jihad Sleiman for a copy of Geotechnical Report: jsleiman@sandiego.gov.

The report listed above is available for review by contacting the City Project Manager.

2-9.1 Permanent Survey Markers. DELETE in its entirety and SUBSTITUTE with the following:

The Contractor shall notify the Engineer or the owner on a Private Contract, at least 7 days before starting the Work to allow for the preservation of survey markers, survey monuments, lot stakes (tagged), and benchmarks. The Engineer or the owner on a Private Contract, will, at its cost, file a Corner Record Form referencing survey monuments subject to disturbance in the Office of the County Surveyor prior to the start of construction and also prior to the completion of construction for the replacement of survey monuments. The Contractor shall not disturb or permanently cover survey markers, survey monuments, lot stakes (tagged), or benchmarks without the consent of the Engineer or the owner on a Private Contract. The Contractor shall bear the expense of uncovering and replacing any that may be disturbed without permission. Replacement shall be done only under the direction of the Engineer by a Registered Land Surveyor or a Registered Civil Engineer authorized to practice land surveying within the State of California. When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the Contractor shall adjust the monument cover to the new grade within 7 days of finished paving unless otherwise specified in the Special Provisions.

2-9.2 Survey Services. DELETE in its entirety and SUBSTITUTE the following:

The Contractor shall be responsible for all surveying services or as may be specified in these special provisions.

The payment for survey services shall be included in the various Bid items unless a Bid item for Survey Service has been provided.

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 Contractor shall obtain all required building permits and pay for all fees and inspections.

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.

4-1.3.2 Inspection of Materials Not Locally Produced. ADD the following:

The Engineer will perform inspection of out-of-town manufacturer for the items of Work specified
No out-of-town Inspection Necessary

4-1.3.4 Inspection Paid For By the Contractor. To the City Supplement, ADD the following:

The Contractor shall employ and pay for all the services of qualified inspection entity to perform all specialty inspection services as required to complete the project.

4-1.3.5 Special Inspections. To the City Supplement, ADD the following:

Special Inspection and testing by the Special Inspectors shall meet the minimum requirements of the prevailing Codes and by the City’s Development Services Department (DSD) and reference in <http://www.sandiego.gov/development-services/industry/special.shtml>

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.

The Contractor shall notify SDG&E at least 10 Working Days prior to excavating within 10' of SDG&E Underground High Voltage Transmission Power Lines (i.e., 69 KV and higher).

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.

6-2.1 Moratoriums. To the City Supplement, ADD the following:

No Work shall be allowed in the areas where there is currently a moratorium issued by the City. The areas subject to moratorium are listed here:

- a) Mission Beach from Memorial Day to Labor Day.

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.

6-8.2 Acceptance. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

6-8.2 Acceptance. Acceptance will occur after all of the requirements contained in the Contract Documents have been fulfilled. If, in the Engineer's judgment, the Contractor has fully performed the Contract, the Engineer will accept the Contractor's performance of the Contract.

6-8.3 Warranty. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

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:

<u>General Annual Aggregate Limit</u>	<u>Limits of Liability</u>
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.

7-3.2.5 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.

7-3.5.5 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.

7-5.2 Caltrans Encroachment Permit. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

- a) The City has applied for the Caltrans Encroachment Permit unless specified otherwise in the SSP.
- b) The Contractor shall pay for and secure the permit prior to construction regardless of which party has applied for it.
- c) The Contractor shall arrange and pay for inspection as required by Caltrans.
- d) The Contractor shall be solely responsible for permit processing delays that result from incomplete or inaccurate information provided by the Contractor to the City or the Caltrans.

7-5.3 Payment. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

The payment for applying for and obtaining the required permits shall be included in the various Bid items unless a Bid item has been provided.

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.

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

7-10.2.6 Traffic Control Signs and Notices for Resurfacing and Slurry Sealing. To the first paragraph of the City Supplement ADD the following:

For each street segment in addition to resurfacing and slurry sealing, the Contractor shall post "NO PARKING" for any required preparatory work such as, but not limited to, damaged asphalt pavement replacement (mill & pave), crack seal, and tree trimming.

7-10.6 Traffic Plate Bridging. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

Transverse or longitudinal cuts, voids, trenches, holes, and excavations in the right-of-way that cannot be properly completed within 1 Working Day shall be protected by adequately designed barricades and structural steel plates [plates] that will support legal vehicle loads in such a way as to preserve unobstructed traffic flow.

The Contractor shall secure approval, in advance, from authorities concerning the use of any bridging proposed on the Work.

Plates shall conform to the following:

- a) The trench shall be adequately shored to support the bridging and traffic loads.
- b) Plates shall be designed for HS 20-44 truck loading in accordance with Caltrans Bridge Design Specifications Manual.

- c) For the minimum thickness of plates refer to Table 7-10.6(A):

Table 7-10.6(A) - Trench Width / Minimum Plate Thickness

Trench Width	Minimum Plate Thickness
10" (0.25 m)	1/2" (13 mm)
1'-11" (0.58 m)	3/4" (19 mm)
2'-7" (0.80 m)	7/8" (22 mm)
3'-5" (1.04 m)	1" (25 mm)
5'-3" (1.6 m)	1 1/4" (32 mm)

For spans greater than 5'-3" (1.6 m), a structural design shall be prepared by a California Registered Civil Engineer and approved by the Engineer.

- d) Plates shall have a skid-resistant surface with a nominal Coefficient Of Friction (COF) of 0.35 as determined by California Test Method 342.
- e) Plates shall extend a minimum of 12" (300 mm) beyond the edges of the trench.
- f) Plates shall provide complete coverage to prevent any person, bicycle, motorcycle or motor vehicle from being endangered due to plate movement causing separations or gaps.
- g) Plates shall be secured against movement or displacement by using adjustable cleats, shims, welding, or other devices, and shall be installed in a manner that will minimize noise as traffic drives over them. Plates shall be installed using either Method (1) or (2):
- i. Method 1 [For speeds greater than 45 mph (70 Km/hr)]: The pavement shall be cold planed to a depth equal to the thickness of the plate and to a width and length equal to the dimensions of the plate.
 - ii. Method 2 [For Speeds less than 45 mph (70 Km/hr)]: Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" (50 mm) into the pavement. Subsequent plates are butted to each other. Fine graded asphalt concrete shall be compacted to form ramps, maximum slope 8.5 % with a minimum 12" (305 mm) taper to cover all edges of the plates.

Alternative installation method may be submitted in accordance with 2-5.3, "Submittals" for the Engineer's approval.

- h) The Contractor shall be responsible for maintenance of the plates, shoring, and asphalt concrete ramps or any other approved device used to secure the plates. The Contractor shall immediately mobilize necessary personnel and equipment after being notified by the Engineer, the City's station 38, or a member of the public of a repair needed e.g., plate movement, noise, anchors, and asphalt ramps. Failure to respond to the emergency request within 2 hours will be grounds for the City to perform necessary repairs that will be invoiced at actual cost including overhead or \$500 per incident, whichever is greater. Failure by the Contractor to comply may result in automatic grounds suspension of permit, Contract, or both.
- i) When plates are removed, any damage to the pavement shall be repaired with fine graded asphalt concrete mix or slurry seal satisfactory to the Engineer.

Payment for traffic plate bridging shall be included in the various Bid items unless a Bid Item has been provided for steel plate bridging.

ADD: 7-16.2.2 Weekly Updates Recipients. The following recipients shall receive a weekly correspondence with updates, traffic control issues and locations, lane closures, and any other pertinent information (with additional contact names given during award process).

Name, Project Engineer, jsleiman@san Diego.gov
Resident Engineer, kshakelford@san Diego.gov

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.

ADD: 7-21 ELECTRONIC COMMUNICATION.

The Contractor shall post all communications addressed to the Engineer concerning construction including RFIs, submittals, and transmittals to the Virtual Project Manager (VPM) website established for the Project. The Contractor shall maintain a list of scheduled activities including planned and actual execution dates for all major construction activities and milestones defined in the approved Schedule. The Contractor shall review and act on all communications addressed to the Contractor in the VPM project website. A user's guide to the VPM system is available on the City's website and will be provided to the Contractor at the preconstruction meeting. The payment for electronic communications shall be included in the various Bid items.

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

207-17.1 General. ADD the following:

All House Connection Sewer Laterals shall use acceptable stainless steel shielded couplings manufactured by Mission, Fernco or approved equal.

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.

207-26.1.1 Polymer Concrete Water Meter Boxes. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

Boxes and covers to be installed in traffic areas shall have a reinforced polymer concrete frame and cover designed for AASHTO H-20 traffic loading. Boxes and covers to be installed in non-traffic areas shall have reinforced polymer concrete reader lids designed for A-10 traffic loading in accordance with ASTM-C857. Traffic areas are defined as any location in which vehicular traffic is evident or highly likely under normal conditions. Non-traffic areas are locations with no vehicular traffic. Covers shall have a logo reading "PUD WATER" as well as the manufacturer's name or logo cast in the polymer concrete surface. A cover and lid selected at random shall be tested. The cover and lid shall support without failure a total vertical load of at least 1,000 pounds, when supported in a horizontal position in the meter box. The load shall be applied to the center of the lid by a cylindrical pin, 1.952" in diameter, supported on a 2-thick rubber pad.

Unless provided for as a separate Bid item, payment for Polymer Concrete Box shall be included in the Bid item for water services.

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

SECTION 210 – PAINT AND PROTECTIVE COATINGS

ADD: 210-6 Anti-graffiti Coating. Anti-graffiti coating shall be as manufactured by Monopole, Inc. (or approved equal).

Materials shall be applied as specified below:

- a) 1st Coat: Aquaseal ME12 (Item 5200)
- b) 2nd Coat: Permashield Base (Item 6100)
- c) 3rd Coat: Permashield Premium (Item 5600 for matte finish or Item 5650 for gloss finish)
- d) 4th Coat: Permashield Premium (Item 5600 for matte finish or Item 5650 for gloss finish)

SECTION 216 – DETECTABLE WARNING TILES

216-1.2 Materials. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

Materials for DWT specified herein shall be per the City's Approved Materials List (AML). The tiles shall have the manufacturer's logo stamped permanently on the product with identifying information such as model number and type.

- a) The Stainless Steel Cast in Place DWT shall be of 16 gauge Type 304L with an integral micro-texture non-slip surface stamped into the stainless steel plate on the top of the domes and in the field surface between the domes. It shall have an ultra violet stabilized coating.
- b) Vitrified Polymer Composite (VPC) Cast in Place DWT shall be an epoxy polymer composition with an ultra violet stabilized coating employing aluminum oxide particles in the truncated domes. VPC Product shall be provided with a 5-year manufacturer written warranty form materials and installation.

- c) For others materials and a complete listing of material physical property requirements refer to the City's AML.

SECTION 801 – WATER POLLUTION CONTROL

801-2.9 Post-Construction Requirements. To the City Supplement second paragraph, ADD the following:

The decal-disc inlet markers shall be “das Duracast Curb Marker®” or approved equal.

The Contractor shall comply with the post-construction requirements.

801-9.3 BMP Requirements. To the City Supplement, ADD the following:

- c) WTAP shall be required when the Project exceeds the Maximum Disturbed Area Requirements unless the grading Work is performed in phases that do not exceed the limit shown on the Plans per phase.

SECTION 803 – ENCOUNTERING OR RELEASING HAZARDOUS SUBSTANCES

803-16 PAYMENT. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

Payment for waste management shall be included in the applicable Bid items as follows:

- a) Preparation of Hazardous Waste Management Plan and Reporting (LS).
- b) Monitoring, Testing, Sampling, Site Storage, and Handling of Soils Containing RCRA Hazardous Waste (TON).
- c) Loading, Transportation, and Disposal of soils containing RCRA Hazardous Waste (TON).
- d) Monitoring, Testing, Sampling, Site Storage and Handling of Petroleum Contaminated Soil (TON).
- e) Loading, Transportation, and Disposal of Petroleum Contaminated Soil (TON).
- f) Monitoring, Testing, Sampling Site Storage and Handling of Soils Containing Non-RCRA Hazardous Waste (TON).
- g) Loading, Transportation, and Disposal of Soils Containing Non-RCRA Hazardous Waste (TON).
- h) Testing, Sampling, Site Storage, Handling, Transportation, and Disposal of Containerized RCRA Hazardous Waste (55 Gal DRUMS).
- i) Testing, Sampling, Site Storage, Handling, Transportation, and Disposal of Containerized Non-RCRA Hazardous Waste (55 Gal DRUMS).

- j) Testing, Sampling, Site Storage, Handling, Transportation and Recycling/Disposal of Universal Waste (EACH).
- k) Testing, Sampling, Site Storage, Handling, Transportation and Recycling/Disposal of Regulated Waste (TON).
- l) Testing, Sampling, Site Storage, Handling, Transportation, and Disposal of RCRA Hazardous Waste contamination from the treatment of contaminated ground water (GAL).
- m) Testing, Sampling, Site Storage, Handling, Transportation, and Disposal of Non-RCRA Hazardous Waste contamination from the treatment of contaminated ground water (GAL).

SECTION 804 – SEWAGE SPILL PREVENTION

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

804-1 GENERAL.

The Contractor shall observe and comply with the City’s policy of zero spills. **The Contractor shall be liable for all damages and fines associated with sewage spills caused by improper support or damage to the existing sewer facilities.**

The Contractor shall designate a person responsible for the development and enforcement of the Sewage Spill Response Plan, and for ensuring sewer spills are minimized to the maximum extent possible. The Contractor shall provide a status of all bypass related work at biweekly progress meetings as requested by the City.

804-2 SEWAGE SPILL PREVENTION AND RESPONSE PLAN. Prior to the start of construction, the Contractor shall develop and submit to the Engineer, for review and approval, a written Sewage Spill Prevention and Response Plan. The plan shall include sewage spill response plan, spill containment and cleanup plan, staging area, and sewage bypass and pumping plan.

The Sewage Spill Prevention and Response Plan shall be developed to respond to any construction related sewage spill(s). The plan shall include:

- a) Identifying all nearby environmentally-sensitive areas such as waterways, channels, catch basins and entrances to existing underground storm drains.
- b) Making arrangements for an emergency response unit, stationed at or near the Site, comprised of emergency response equipment and trained personnel to be immediately dispatched in the event of a sewage spill(s). This includes field biologists, archaeologists, or both if in an environmentally-sensitive area such as a canyon.
- c) Developing an emergency notification procedure that includes an emergency response team with telephone numbers and arrangements for backup personnel and equipment. The emergency response unit shall be able to dispatch to the Site 24 hours a day 7 days a week including weekends and holidays. The Contractor shall designate primary and secondary representatives, their respective phone numbers, pager numbers, and mobile phone numbers. These Contractor’s representatives shall be accessible and available at all times to respond immediately to any sewer spill event.

- d) Identifying any property owners who may be affected e.g., the City Park and Recreation Department.

At the pre-construction meeting the Contractor will be provided with a list of the City representatives to contact in case of sewage spill(s). In case of a sewage spill(s), the Contractor shall immediately call the Sewage Spill Hotline number at (619) 527-5481 and shall act immediately without instructions from the City, to control the spill and take all appropriate steps to contain it in accordance with the Sewage Spill Prevention and Response Plan and 804-2.1, "Sewage Bypass and Pumping Plan." The Contractor shall immediately notify the City representatives of the spill and shall report Project name, location, Contractor name, Project Engineer, and Engineer names.

The Contractor shall, within 3 Working Days from the occurrence of the spill, submit to the Engineer a written report describing the following information related to the spill: the location; the nature and estimated volume; the date and time; the duration; the cause; the type of remedial and/or clean up measures taken (including erosion control measures) and the date and time of implementation; the corrective and/or preventive actions taken to avoid further spills; equipment used in spill response; and the environmentally-sensitive habitat such as a water body, if any, impacted and results of any necessary monitoring. The Contractor shall provide a list of who from the City was notified, date and time of notification, date and time the Contractor was notified of the spill, date and time the Contractor arrived on Site.

The Engineer may institute further corrective actions, as deemed necessary, to fully comply with existing laws, ordinances, codes, order or other pertinent regulations. In addition to any penalties provided by federal, state, and local laws, the Contractor shall be responsible for all costs incurred for the corrective actions including mitigation measures (habitat restoration, etc.) and obtaining after-the-fact permits if necessary, in environmentally sensitive areas. These permits include but are not limited to those from the City Planning Department Development Services, California Coastal Commission, U.S. Army Corps of Engineers and the California Department of Fish and Game.

It shall be the Contractor's responsibility to assure that all field forces, including Subcontractors, know and obey all safety and emergency procedures, including the Sewage Spill Prevention and Response Plan applicable to the work, to be maintained and followed at the Site. If in an environmentally sensitive area, such as canyon, stream, or lagoon, impacts shall be minimized. Crews shall be aware at the start of the job of any sensitive environmental habitats, breeding season restrictions, etc.

The Contractor shall prevent spills when working on sewer lines, such as when making temporary connection, when connecting new lines into the sewer system, ensuring no laterals are connected to mains being abandoned, ensuring diversions are appropriately installed, and diversions are completely removed when finished so there are no blockages. The Contractor shall not trap debris and discharge rock or debris downstream. Avoidance of streams is paramount unless authorized via permits.

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 any sewage spill caused or claimed to be caused by the Contractor's action or failure to take measures to prevent a spill. **The Contractor shall be responsible for payment of any fines assessed against the City for such sewage spills.** The Contractor's duty to indemnify and hold harmless shall not include any claims or liability arising from the established active or sole negligence or willful misconduct of the City, its agents, officers or employees.

The Contractor shall obtain and maintain an additional insurance coverage for Pollution Liability with its limits and requirements as set forth in 7-3.5.3, “Contractors Pollution Liability Insurance Endorsements.” The limits and requirements for Pollution Liability shall be in an amount sufficient to cover potential losses from sudden and accidental pollution. Unless otherwise provided for in the Bid Proposal, all costs associated with the requirements for Sewage Spill Prevention and Response Plan, including additional insurance, shall be included in the prices for other related Bid items.

804-2.1 Sewage Bypass and Pumping Plan. The Contractor shall submit to the Engineer for approval, a Sewage Bypass and Pumping Plan at least 15 Working Days prior to implementation of flow diversion in compliance with the City’s policy of “ZERO SPILLS.” The Sewage Bypass and Pumping Plan shall indicate the sequence of diversion operations, all other operations the Contractor will establish to maintain wastewater service during the construction period, and a quality assurance and quality control plan for the diversion Work. The Sewage Bypass and Pumping Plan shall include an emergency response plan indicating the procedures, equipment, and activities that will be implemented in the event of an emergency shutdown or failure of the flow diversion equipment used for construction. The Contractor shall be responsible for implementation of the emergency plan in accordance with 804-2 “Sewage Spill Prevention and Response Plan”.

The Contractor’s Sewage Bypass and Pumping Plan shall be reviewed and approved by the Wastewater Collection Division of the City before flow can be diverted. No deviation from the approved Sewage Bypass and Pumping Plan will be allowed without prior approval from the Engineer.

The Contractor shall observe and comply with all Federal, State, and local laws, ordinances, codes, orders, and regulations which in any manner affect the conduct of the work, specifically as it relates to sewage spills. The Contractor shall be fully responsible for preventing sewage spill(s), containing any sewage spill(s), recovery and legal disposal of any spilled sewage, any fines, penalties, claims and liability arising from negligently causing a sewage spill(s), and any violation of any law, ordinance, code, order, or regulation as a result of the spill(s).

The Contractor shall exercise care not to damage existing public and private improvements, interrupt existing services or facility operations which may cause a sewage spill(s). Any reasonably anticipated utility or improvement which is damaged by the Contractor shall be immediately repaired at the expense of the Contractor. In the event that the Contractor damages an existing utility or interrupts an existing service, which causes a sewage spill(s), the Contractor shall immediately call the emergency number at (619) 515-3525.

The Contractor shall exercise care not to damage any sensitive habitats or historic resources unless authorized via the discretionary permit and Mitigation, Monitoring and Reporting Program approved by the City.

The Contractor shall provide all facilities, labor, power, and appurtenances necessary to divert wastewater flows as necessary to allow proper installation of the pipeline and/or manhole linings.

The Contractor shall submit as part of their Sewage Bypass and Pumping Plan their monitoring procedure and frequency and shall continuously monitor the flow levels downstream and upstream of the flow diversion to detect any possible failure that may cause a sewage backup and spill(s). The Contractor shall maintain a log of the monitoring and provide daily copies to the Engineer in a manner acceptable to the Engineer.

The Contractor shall inspect and maintain the diversion system daily, including the back-up system. The Contractor shall submit with their Sewage Bypass and Pumping Plan their maintenance procedures and frequency. The Contractor shall maintain a log of all inspection, maintenance and repair records, and provide copies to the Engineer upon request in a manner acceptable to the Engineer.

The Contractor shall size the flow diversion system to handle the peak flow and shall include a 100% backup in the flow diversion system. The Contractor shall provide temporary means to maintain and handle the sewage flow in the existing system as required to complete the necessary construction. The Contractor shall utilize the flow diversion system to mitigate any additional wet weather flows, perform the necessary maintenance and repairs on the flow diversion system, and exercise and ensure the operation of the backup system. Each pump, including the backup pumps, shall be a complete unit with its own suction and discharge piping. The Contractor shall operate the backup flow diversion system for a minimum of 25% of the total diversion time on a weekly basis. The backup flow diversion system shall be fully installed, operational, and ready for immediate use. The diversion system shall be hydraulically tested with clean water prior to wastewater flow diversion. The Contractor shall demonstrate to the satisfaction of the Engineer that both the primary and backup flow diversion systems are fully functional and adequate, and shall certify the same, in writing, to the Engineer in a manner acceptable to the Engineer.

The Contractor shall provide one dedicated fuel tank for every single pump or generator, if fuel or generator driven pumps are used. The Contractor shall provide an emergency standby power generator, if electric power driven pumps are used. The Contractor shall provide a fuel level indicator outside each fuel tank. The Contractor shall continuously (while in use) monitor the fuel level in the tanks and ensure that the fuel level does not drop below a level equivalent of two hours of continuous flow diversion system operation. The Contractor shall take the necessary measures to ensure the fuel supply is protected against contamination. This includes but is not limited to fuel line water traps, fuel line filters, and protecting fuel stores from precipitation. The Contractor shall monitor all hoses and repair leaks immediately.

804-2.2 Payment Unless a Bid item has been provided, full compensation for the Sewage Bypass and Pumping Plan, its implementation e.g., labor, facilities, equipments, power, appurtenances and incidental, shall be included in the payment for sewer main.

SECTION 805 – WATER DISCHARGES

805-2.7 Payment. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

Payment for dewatering will be made as follows:

- a) The Allowance Bid item for Permit and Discharge Fees shall cover the payment for fees and the associated expenses e.g., water samples and lab testing for obtaining permits.
- b) The payment for dewatering contaminated water containing hazardous substances and to bring the discharged water to the level that is in compliance with the permitting agencies' requirements and water quality standards will be included in the Allowance Bid item for "Dewatering Hazardous Contaminated Water."

- c) The payment for dewatering contaminated water containing non-hazardous substances will be included in the Lump Sum Bid item for “Dewatering Non-Hazardous Contaminated Water.”
- d) For the payment for handling and disposal of the hazardous contamination, see 803-16 (l),(m), “Payment.”
- e) The payment for preparing health and safety plan shall be included in the various Bid items unless a Bid Item has been provided.

END OF SUPPLEMENTARY SPECIAL PROVISIONS (SSP)

TECHNICAL SPECIFICATIONS

SPECIFICATIONS

**ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION**

City of San Diego, California

22 September 2011

T E C T O N I C S

Architects ■ Planners ■ Engineers
San Diego, California

Alterations to Mission Beach Lifeguard Station
City of San Diego, CA

22 September 2011

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APPENDICES

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SECTION 01100

SUMMARY

PART 1 – GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. General Scope of Work: The project consists of the installation of two new disabled accessible parking spaces at the existing parking lot, renovation and expansion of the Locker Room area, construction of a 120 sf single –story addition at the northwest corner of the building and miscellaneous minor improvements.

1. The parking Stall addition includes the construction of accessibility ramp, installation of signage, striping, etc.
2. The Locker Room renovation work includes demolition of the existing locker rooms and adjacent storage room, including partitions, ceilings, floor slabs, water and sewer piping electrical conduits, etc. new construction will include new sewer piping, concrete floor slab, new gypsum drywall partitions and ceilings on wood framing, modification of the masonry at the Locker Room entrances, hollow metal doors and frames, ceramic tile at walls and floors, lockers, counters, plumbing fixtures, fluorescent lighting, toilet and bath accessories, etc.
3. The Addition at the northwest corner will consist of new concrete footing and floor slab, wood framing at walls and roof with stucco facing at the exterior walls and gypsum drywall finish as the interior face. A Modified Bitumen membrane will be provided at the roof. The Addition will include Aluminum-framed windows and a hollow metal door and frame.
4. Miscellaneous minor improvements will include replacement of doors and windows, installation of safety barriers, replacement of the existing non-compliant drinking fountain, etc.
5. The project includes additive bid items to provide replacement of deteriorated railings and flashing at the rooftop catwalk, and to replace the main entrance door at the Waterfront boardwalk side of the building.

1.2 WORK SEQUENCE

- A. The Work will be scheduled with the City Engineer designated for this project.

- B. Temporary facilities will be required to accommodate the locker room functions at the site. The City has a portable, modular building which the Contractor shall bring to the site and connect to power, water and sewer. The Contractor shall also construct a code-complaint ramp to provide access to the temporary facility by the disabled. Once these have been set up, the Contractor can begin work. Coordinate the scheduled phasing with the City Engineer.

1.3 USE OF PREMISES

- A. General: Contractor shall have coordinated use of premises for construction operations, including use of Project

1.4 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "master Format" numbering system.

- 1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.

- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. The conventions are as follows:

- 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents.

- 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

- a. The words “shall,” “shall be,” or “shall comply with,” depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01100

SECTION 01230

ALTERNATES

(Additive Bid Items)

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1A: Repair Work Required at the Third Floor Roof Catwalk:

1. The work of Alternate 1A includes all labor and material required to
 - a. Remove the existing railing and flashing system at the Third Floor Roof Catwalk where shown on the drawings and to replace it with new construction as detailed, and
 - b. Remove all existing rust and paint from the four steel-tube columns supporting the Third Floor Roof at the Catwalk and provide all required primer and paint to refurbish and recoat them.

B. Alternate No. 1B: Repair : Replace Door 102A at the west wall:

1. The work of Alternate 1B includes all labor and material required to remove and replace door 102A, including the door frame and hardware, at the west side of the building, as shown on the drawings and details. Work of Alternate 1B shall also include all repair of the CMU wall at the hinge side of the existing door as shown with CIP concrete.

END OF SECTION 01230

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
 - 3. Electric power service.
- C. Support facilities include, but are not limited to, the following:
 - 1. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Environmental protection.
 - 2. Stormwater control.
 - 3. Tree and plant protection.
 - 4. Site enclosure fence.
 - 5. Security enclosure and lockup.
 - 6. Barricades, warning signs, and lights.
 - 7. Temporary enclosures.
 - 8. Temporary partitions.
 - 9. Fire protection.
- E. Related Sections include the following:
 - 1. Division 1 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
 - 2. Division 1 Section "Execution Requirements" for progress cleaning requirements.

1.2 USE CHARGES

- A. General: The Contractor will be allowed to use the following services available at the project site (s) without charge during the project provided usages are not deemed excessive, unreasonable or abusive by the City Engineer
 - 1. Sanitary facilities.
 - 2. Water service.

3. Electrical power service.

1.3 QUALITY ASSURANCE

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
 2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Engineer. Provide materials suitable for use intended.
- B. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts.
- C. Lumber and Plywood: Standard Stud or No. 3 Grade; Plywood Exterior, C-C, Plugged.
- D. Water: Potable.

2.2 EQUIPMENT

- A. General: Provide equipment suitable for use intended.
- B. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Contractor shall locate facilities, such as fenced storage enclosures, with final location to be coordinated in the field with the City Engineer.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY LOCKER ROOM, SHOWER AND TOILET FACILITY

- A. The City owns a portable modular building that is to be used at the project site to temporarily accommodate the Lifeguard staff requirements for use of Locker Rooms, Toilet Rooms and Shower Rooms during the project duration.

As part of the work of this Contract, the Contractor shall provide the following:

- 1. Haul the City's portable building from its existing location to the project site;
 - 2. Provide all required setting devices and bracing necessary to maintain structural stability for the portable building during the time it is in use at the project site;
 - 3. Construct a code-compliant disabled access ramp at the building entrance;
 - 4. Provide a temporary electrical power connection of adequate size to the building;
 - 5. Provide a temporary water connection of adequate size to the building;
 - 6. Provide a temporary sewer connection of adequate size to the building;
 - 7. At the end of the project, disconnect the building from temporary power, water and sewer ties, disassemble the disabled-accessible ramp and haul the portable building back to the location where it was formerly parked.
- B. The Contractor shall verify the location of adequate power, sewer and water connections at the project site and assure that the connections will be maintained without interruption throughout the life of the project. Utility connections shall be provided in a way so that there is no possibility of injury to staff or to the public for the duration of the project due to the utility connections for the portable building.

3.3 TEMPORARY UTILITY INSTALLATION

- A. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.
 - 1. Filter out excessive soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
- B. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 - 1. Provide rubber hoses as necessary to serve Project site.

2. Water supply for fire protection shall be available at job site from the start of construction.
- C. Electric Power Service: Use of Owner's existing electric power service will be permitted, when available as long as equipment is maintained in a condition acceptable to Owner. Otherwise, provide portable generating equipment on site for use by all trades until permanent power is available from the owner.
 - D. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.
 1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
 - E. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions where adequate existing lighting is not available.
 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 2. Install exterior-yard site lighting that will provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed, but ensure that construction lighting does not affect Lifeguard operations.

3.4 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 1. Locate temporary construction and support facilities for easy access, and as directed by Owner.
 2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Dewatering Facilities and Drains: When required for protection of the work, provide temporary drainage and dewatering facilities as required. Maintain Project site, excavations, and construction free of water.
 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining property nor endanger permanent Work or temporary facilities.
- C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.
 1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.
- B. Stormwater Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.
- C. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from construction damage. Protect tree root systems from damage, flooding, and erosion.
- D. Site Enclosure Fence: Before construction operations begin, install chain-link fence with lockable entrance gates. Locate where determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering site except by entrance gates. Coordinate installation with the City Engineer to ensure access by Lifeguard personnel is maintained.
- E. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

Contractor shall provide temporary plywood (on 2x framing) security enclosure at project sites where new doors cannot be fully installed by the end of the day. Provide a certified security guard from 6:00 p.m. to 8:00 a.m. the next morning. If a security guard is not provided, and the Owner has to provide one, the Owner will backcharge Contractor for costs to provide security guard. Failure to provide a security guard may result in contract termination.

- F. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- G. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior, where required.
- H. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
 - 1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.

- a. Other Locations: Class ABC dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for exposures.
 - b. Locate fire extinguishers where convenient and effective for their intended purpose; provide not less than one extinguisher on each floor at or near each usable stairwell.
2. Store combustible materials in containers in fire-safe locations.
 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, and other access routes for firefighting. Prohibit smoking in hazardous fire-exposure areas.
 4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition. Provide all required fire-proof blankets and/or protective screening to insure sparks from welding operations do not ignite nearby flammable materials.
 5. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
 1. Maintain operation of temporary enclosures and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are the property of Contractor.
 2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section "Closeout Procedures."

END OF SECTION 01500

SECTION 01731
CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.

1.2 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.3 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Leave existing utilities and protect or relocate before continuing with work.
 - 5. Electrical Services: Cut off conduit in walls or partitions to be removed. Cap and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.

- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.

END OF SECTION 01731

SECTION 01732
SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Demolition and removal of selected portions of a building or structure.
2. Demolition and removal of selected site elements.
3. Repair procedures for selective demolition operations.

B. Related Sections include the following:

1. Division 1 Section "Summary" for use of the premises.
2. Division 1 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for selective demolition operations.
3. Division 1 Section "Cutting and Patching" for cutting and patching procedures for selective demolition operations.
4. Division 16 Sections for demolishing, cutting, patching, or relocating electrical items.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, salvage and prepare them for reuse, and reinstall them where indicated.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.4 SUBMITTALS

- A. Proposed Dust-Control and Noise-Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 - 2. Interruption of utility services.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Coordination of Owner's continuing occupancy of portions of existing building and adjacent buildings on site.

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.6 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted. Provide not less than 48 hours' notice to Owner of activities that will affect Owner's operations.
- B. Maintain access to existing walkways, lobby, toilet rooms and other adjacent occupied or used facilities.
 - 1. Do not close or obstruct walkways, or occupied or used facilities without written permission from Owner.
- C. Owner assumes no responsibility for condition of areas to be selectively demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work.
 - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site will not be permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
 - 1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Use materials whose installed performance equals or surpasses that of existing materials.
- B. Comply with material and installation requirements specified in individual Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.

3.2 UTILITY SERVICES

- A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner.
 - 1. Provide at least 48 hours' notice to Owner if shutdown of service is required during changeover.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner.
 2. Erect temporary protection, such as fences at area of demolition.
 3. Protect existing site improvements, appurtenances, and landscaping to remain.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
- C. Temporary Enclosures: Provide temporary enclosures for protection of existing building and construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

3.4 POLLUTION CONTROLS

- A. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.
1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as flooding and pollution.
 2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure.
- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- C. Cleaning: Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining

construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.
10. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.

B. Removed and Salvaged/Reinstalled Items: Comply with the following:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

D. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.

E. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

3.6 PATCHING AND REPAIRS

A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.

B. Patching: Comply with Division 1 Section "Cutting and Patching."

C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

1. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to manufacturer's written recommendations.
- D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

END OF SECTION 01732

SECTION 02511

HOT-MIX ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Hot-mix asphalt paving.
2. Asphalt surface treatments:
 - a. Fog seals.
 - b. Slurries.
3. Pavement-marking paint.
4. Wheel stops.

1.2 SYSTEM DESCRIPTION

A. Provide hot-mix asphalt pavement according to the materials, workmanship, and other applicable requirements of the standard specifications of the state or of authorities having jurisdiction.

1. Standard Specification: As indicated.
2. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.3 SUBMITTALS

- A. Product Data: For each product specified. Include technical data and tested physical and performance properties.
- B. Job-Mix Designs: For each job mix proposed for the Work.
- C. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Material Test Reports: Indicate and interpret test results for compliance of materials with requirements indicated.
- E. Material Certificates: Certificates signed by manufacturers certifying that each material complies with requirements.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who has completed hot-mix asphalt paving similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Manufacturer Qualifications: Engage a firm experienced in manufacturing hot-mix asphalt similar to that indicated for this Project and with a record of successful in-service performance.
 - 1. Firm shall be a registered and approved paving mix manufacturer with authorities having jurisdiction or with the DOT of the state in which Project is located.
- C. Testing Agency Qualifications: Demonstrate to Architect's satisfaction, based on Architect's evaluation of criteria conforming to ASTM D 3666, that the independent testing agency has the experience and capability to satisfactorily conduct the testing indicated without delaying the Work.
- D. Regulatory Requirements: Conform to applicable standards of authorities having jurisdiction for asphalt paving work on public property.
- E. Asphalt-Paving Publication: Comply with AI's "The Asphalt Handbook," except where more stringent requirements are indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.
- B. Store pavement-marking materials in a clean, dry, protected location and within temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not apply asphalt materials if substrate is wet or excessively damp or if the following conditions are not met:
 - 1. Prime and Tack Coats: Minimum surface temperature of 60 deg F.
 - 2. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
 - 3. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.
- B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for oil-based materials, 50 deg F for water-based materials, and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 AGGREGATES

- A. General: Use materials and gradations that have performed satisfactorily in previous installations.
- B. Coarse Aggregate: Sound; angular crushed stone; crushed gravel; or properly cured, crushed blast-furnace slag; complying with ASTM D 692.
- C. Fine Aggregate: Sharp-edged natural sand or sand prepared from stone; gravel, properly cured blast-furnace slag, or combinations thereof; complying with ASTM D 1073.
 - 1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.
- D. Mineral Filler: Rock or slag dust, hydraulic cement, or other inert material complying with ASTM D 242.

2.2 ASPHALT MATERIALS

- A. Asphalt Cement: ASTM D 3381 for viscosity-graded material; ASTM D 946 for penetration-graded material.
- B. Undersealing Asphalt: ASTM D 3141, pumping consistency.
- C. Prime Coat: Asphalt emulsion prime conforming to state DOT requirements.
- D. Tack Coat: ASTM D 977, emulsified asphalt or ASTM D 2397, cationic emulsified asphalt, slow setting, factory diluted in water, of suitable grade and consistency for application.
- E. Fog Seal: ASTM D 977, emulsified asphalt or ASTM D 2397, cationic emulsified asphalt, slow setting, factory diluted in water, of suitable grade and consistency for application.
- F. Water: Potable.

2.3 AUXILIARY MATERIALS

- A. Herbicide: Commercial chemical for weed control, registered by Environmental Protection Agency (EPA). Provide granular, liquid, or wettable powder form.
- B. Sand: ASTM D 1073, Grade Nos. 2 or 3.
- C. Pavement-Marking Paint: Latex, water-base emulsion, ready-mixed, complying with FS TT-P-1952.
 - 1. Color: As indicated.

- D. Wheel Stops: Precast, air-entrained concrete, 2500-psi minimum compressive strength, approximately 6 inches high, 9 inches wide, and 84 inches long. Provide chamfered corners and drainage slots on underside, and provide holes for anchoring to substrate.
 - 1. Dowels: Galvanized steel, diameter 3/4 inch, minimum length 10 inches.

2.4 MIXES

- A. Hot-Mix Asphalt: Provide dense, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction; designed according to procedures in AI's "Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types"; and complying with the following requirements:
 - 1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
 - 2. Base Course: As indicated.
 - 3. Surface Course: As indicated.
- B. Emulsified-Asphalt Slurry: ASTM D 3910, consisting of emulsified asphalt, fine aggregates, and mineral fillers and as follows:
 - 1. Composition: Type 1.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.
- B. Proof-roll subbase using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction.
- C. Notify Architect in writing of any unsatisfactory conditions. Do not begin paving installation until these conditions have been satisfactorily corrected.

3.2 PATCHING AND REPAIRS

- A. Patching: Saw cut perimeter of patch and excavate existing pavement section to sound base. Recompact new subgrade. Excavate rectangular or trapezoidal patches, extending 12 inches into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically.
 - 1. Tack coat faces of excavation and allow to cure before paving.
 - 2. Fill excavation with dense-graded, hot-mix asphalt base mix and, while still hot, compact flush with adjacent surface.

3. Partially fill excavation with dense-graded, hot-mix asphalt base mix and compact while still hot. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.
- B. Leveling Course: Install and compact leveling course consisting of dense-graded, hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.
1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.
- C. Tack Coat: Apply uniformly to existing surfaces of previously constructed asphalt or portland cement concrete paving and to surfaces abutting or projecting into new, hot-mix asphalt pavement. Apply at a uniform rate of 0.05 to 0.15 gal./sq. yd. of surface.
1. Allow tack coat to cure undisturbed before paving.
 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.3 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
1. Sweep loose granular particles from surface of unbound-aggregate base course. Do not dislodge or disturb aggregate embedded in compacted surface of base course.
- B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
1. Mix herbicide with prime coat when formulated by manufacturer for that purpose.
- C. Prime Coat: Apply uniformly over surface of compacted-aggregate base at a rate of 0.15 to 0.50 gal./sq. yd.. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure for 72 hours minimum.
1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use just enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
 2. Protect primed substrate from damage until ready to receive paving.

3.4 HOT-MIX ASPHALT PLACING

- A. Machine place hot-mix asphalt mix on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents

segregation of mix. Place each course to required grade, cross section, and thickness, when compacted.

1. Place hot-mix asphalt base course in lifts not to exceed 2 inches.
 2. Place hot-mix asphalt surface course in single lift.
 3. Spread mix at minimum temperature of 250 deg F.
 4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes, unless otherwise indicated.
 5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Place paving in consecutive strips not less than 10 feet wide, except where infill edge strips of a lesser width are required.
1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete asphalt base course for a section before placing asphalt surface course.
- C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.5 JOINTS

- A. Construct joints to ensure continuous bond between adjoining paving sections. Construct joints free of depressions with same texture and smoothness as other sections of hot-mix asphalt course.
1. Clean contact surfaces and apply tack coat.
 2. Offset longitudinal joints in successive courses a minimum of 6 inches.
 3. Offset transverse joints in successive courses a minimum of 24 inches.
 4. Construct transverse joints by bulkhead method or sawed vertical face method as described in AI's "The Asphalt Handbook."
 5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
 6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.6 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or vibratory-plate compactors in areas inaccessible to rollers.
1. Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Accomplish breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for

indicated crown, grade, and smoothness. Repair surfaces by loosening displaced material, filling with hot-mix asphalt, and re-rolling to required elevations.

- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling, while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
 - 1. Average Density: 96 percent of reference laboratory density according to ASTM D 1559, but not less than 94 percent nor greater than 100 percent.
 - 2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while still hot, with back of rake or smooth iron. Compact thoroughly using tamper or other satisfactory method.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials. Remove paving course over area affected and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.7 INSTALLATION TOLERANCES

- A. Thickness: Compact each course to produce the thickness indicated within the following tolerances:
 - 1. Base Course: Plus or minus 1/2 inch.
 - 2. Surface Course: Plus 1/4 inch, no minus.
- B. Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
 - 1. Base Course: 1/4 inch.
 - 2. Surface Course: 1/8 inch.
 - 3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

3.8 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Allow paving to cure for 30 days before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.
 - 1. Broadcast glass spheres uniformly into wet pavement markings at a rate of 6 lb/gal..

3.9 WHEEL STOPS

- A. Securely attach wheel stops into pavement with not less than 2 galvanized steel dowels embedded in precast concrete at one-third points. Firmly bond each dowel to wheel stop and to pavement.
 - 1. Extend upper portion of dowel 5 inches into wheel stop and lower portion a minimum of 5 inches into pavement.

3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports.
 - 1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from specified requirements.
- B. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
- C. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- D. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- E. In-Place Density: Samples of uncompacted paving mixtures and compacted pavement will be secured by testing agency according to ASTM D 979.
 - 1. Reference laboratory density will be determined by averaging results from 4 samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 1559, and compacted according to job-mix specifications.
 - 2. Reference maximum theoretical density will be determined by averaging results from 4 samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.

3. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.
 - a. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, but in no case will fewer than 3 cores be taken.
 - b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.
- F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

END OF SECTION 02511

SECTION 02751
CEMENT CONCRETE PAVEMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes exterior cement concrete pavement for the following:
 - 1. Curbs and gutters.
 - 2. Walkways.
- B. Related Sections include the following:
 - 1. Division 2 Section "Hot-Mix Asphalt Paving" for reflective traffic discs which may be installed at cement concrete pavement.
 - 2. Division 3 Section "Cast-in-Place Concrete" for general building applications of concrete.

1.2 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, expansive hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.3 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixes: For each concrete pavement mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.

1.5 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities or ongoing Owner use of adjacent facilities.

PART 2 - PRODUCTS

2.1 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
 - 1. Use flexible or curved forms for curves of a radius 100 feet or less.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
- B. Reinforcement Bars: ASTM A 615, Grade 60, deformed.
- C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement bars, welded wire fabric, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:
 - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

- A. General: Use the same brand and type of cementitious material from the same manufacturer throughout the Project.
- B. Portland Cement: ASTM C 150, Type I or II.
 - 1. Fly Ash: ASTM C 618, Class F or C.
 - 2. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- C. Aggregate: ASTM C 33, uniformly graded, from a single source, with coarse aggregate as follows:
 - 1. Maximum Aggregate Size: 3/4 inch nominal.
 - 2. Do not use fine or coarse aggregates containing substances that cause spalling.
- D. Water: ASTM C 94.

2.4 ADMIXTURES

- A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cement and to be compatible with other admixtures.
- B. Air-Entraining Admixture: ASTM C 260.
- C. Water-Reducing Admixture: ASTM C 494, Type A.

2.5 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

2.6 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Pavement-Marking Paint: Alkyd-resin type; ready mixed; complying with FS TT-P-115, Type I, or AASHTO M 248, Type N.
 - 1. Color: As indicated.
- C. Wheel Stops: Precast, air-entrained concrete; 2500-psi minimum compressive strength; approximately 6 inches high, 9 inches wide, and 84 inches long. Provide chamfered corners and drainage slots on underside, and provide holes for dowel-anchoring to substrate.
 - 1. Dowels: Galvanized steel, diameter of 3/4 inch, minimum length 10 inches.
- D. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

2.7 CONCRETE MIXES

- A. Prepare design mixes, proportioned according to ACI 211.1 and ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.
- B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the trial batch method.

- C. Proportion mixes to provide concrete with the following properties:
 - 1. Compressive Strength (28 Days): 3000 psi.
 - 2. Maximum Water-Cementitious Materials Ratio: 0.50.
 - 3. Slump Limit: 4 inches.
- D. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete, according to ACI 301 requirements.

2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. Proceed with pavement only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.
- B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating reinforcement and with recommendations in CRSI's "Placing Reinforcing Bars" for placing and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

- D. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.4 JOINTS

- A. General: Construct construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
 - 1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour, unless pavement terminates at isolation joints.
 - 1. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
 - 2. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, walks and where indicated.
 - 1. Locate expansion joints at intervals of 50 feet, unless otherwise indicated.
 - 2. Extend joint fillers full width and depth of joint.
 - 3. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
 - 4. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 - 5. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows, at Contractor's option.
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with groover tool to the following radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
 - a. Radius: 1/4 inch.
 - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

- E. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to the following radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

- 1. Radius: 1/4 inch.

3.5 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcement steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.

- B. Moisten subbase to provide a uniform dampened condition at the time concrete is placed.

- C. Comply with requirements and with recommendations in ACI 304R for measuring, mixing, transporting, and placing concrete.

- D. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

- E. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete according to recommendations in ACI 309R.

- 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.

- F. Screed pavement surfaces with a straightedge and strike off. Commence initial floating using bull floats or darbies to form an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading dry-shake surface treatments.

- G. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by freezing actions or low temperatures.

- 1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
- 2. Do not use frozen materials.
- 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

- H. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows when hot-weather conditions exist:

- 1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F. Chilled mixing water or chopped ice may be used to

control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Cover reinforcement steel with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, reinforcement steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.6 CONCRETE FINISHING

- A. General: Wetting of concrete surfaces during screeding, initial floating, or finishing operations is prohibited.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots, and fill low spots. Refloat surface immediately to uniform granular texture.
 1. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.
 2. Medium-to-Heavy-Textured Broom Finish: At pavement with slopes exceeding 5 percent, provide a heavy broom finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

3.7 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and follow recommendations in ACI 305R for hot-weather protection during curing.
- B. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.
- C. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.8 PAVEMENT TOLERANCES

- A. Comply with tolerances of ACI 117 and as follows:
 1. Elevation: 1/4 inch.
 2. Thickness: Plus 3/8 inch, minus 1/4 inch.
 3. Surface: Gap below 10-foot- long, unlevelled straightedge not to exceed 1/4 inch.
 4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch.
 5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch.
 6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 inch.
 7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches.
 8. Joint Spacing: 3 inches.
 9. Contraction Joint Depth: Plus 1/4 inch, no minus.
 10. Joint Width: Plus 1/8 inch, no minus.

3.9 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Allow concrete pavement to cure for 28 days and be dry before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

3.10 WHEEL STOPS

- A. Securely attach wheel stops into pavement with not less than two galvanized steel dowels embedded in holes cast into wheel stops. Firmly bond each dowel to wheel stop and to pavement. Extend upper portion of dowel 5 inches into wheel stop and lower portion a minimum of 5 inches into pavement.

END OF SECTION 02751

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies cast-in-place concrete, including reinforcement, concrete materials, mix design, placement procedures, and finishes, including concrete sealer.

1.2 SUBMITTALS

- A. General: In addition to the following, comply with submittal requirements in ACI 301.
- B. Product Data: For each type of manufactured material and product indicated, including concrete sealer.
- C. Design Mixes: For each concrete mix.
- D. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.
- E. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed concrete work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
- C. Source Limitations: Obtain each type of cement of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.
- D. Comply with ACI 301, "Specification for Structural Concrete," including the following, unless modified by the requirements of the Contract Documents.

1. General requirements, including submittals, quality assurance, acceptance of structure, and protection of in-place concrete.
2. Formwork and form accessories.
3. Steel reinforcement and supports.
4. Concrete mixtures.
5. Handling, placing, and constructing concrete.

PART 2 - PRODUCTS

2.1 FORMWORK

- A. Furnish formwork and form accessories according to ACI 301.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

2.3 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type II.
- B. Normal-Weight Aggregate: ASTM C 33, uniformly graded, not exceeding 1-1/2-inch nominal size. Use 3/4-inch nominal size for slabs.
- C. Water: Potable and complying with ASTM C 94.

2.4 ADMIXTURES

- A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cement and to be compatible with other admixtures. Do not use admixtures containing calcium chloride.
- B. Water-Reducing Admixture: ASTM C 494, Type A.
- C. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.

2.5 RELATED MATERIALS

- A. Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than 10 mils thick.
- B. Fine-Graded Granular Material: Clean mixture of crushed stone, crushed gravel, and manufactured or natural sand; ASTM D 448, Size 10, with 100 percent passing a No. 4

sieve and 10 to 30 percent passing a No. 100 sieve; complying with deleterious substance limits of ASTM C 33 for fine aggregates.

- C. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

2.6 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.
- F. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

2.7 CONCRETE MIXES

- A. Comply with ACI 301 requirements for concrete mixtures.
- B. Prepare design mixes, proportioned according to ACI 301, for normal-weight concrete determined by either laboratory trial mix or field test data bases, as follows:
 - 1. Compressive Strength (28 Days): 3000 psi.
 - 2. Slump: 4 inches.
 - a. Slump Limit for Concrete Containing High-Range Water-Reducing Admixture: Not more than 8 inches after adding admixture to plant- or site-verified, 2- to 3-inch slump.

2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with ASTM C 94.
 - 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

2.9 CONCRETE SEALER

- A. Silanes, penetrating water repellent; a monomeric compound containing alkyltrialkoxysilanes, with alcohol, mineral spirits, water or other proprietary solvent carrier.
- B. Subject to compliance with requirements, provide one of the following:
 - 1. Rainstopper SR 140, Textured Coatings of America.
 - 2. Hydrozo 40, Harris Specialty Chemicals, Inc.
 - 3. Klereseal 940-S, Pecora Corporation
 - 4. Or equal.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, construct, erect, shore, brace, and maintain formwork according to ACI 301.

3.2 VAPOR RETARDER

- A. Install, protect, and repair vapor-retarder sheets according to ASTM E 1643; place sheets in position with longest dimension parallel with direction of pour.
- B. Lap joints 6 inches and seal with manufacturer's recommended tape.
 - 1. Cover vapor retarder with fine-graded granular material, moisten, and compact with mechanical equipment to elevation tolerances of plus 0 inch or minus 3/4 inch.

3.3 STEEL REINFORCEMENT

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

3.4 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Locate and install so as not to impair strength or appearance of concrete, at locations indicated or as approved by Architect.
- C. Isolation Joints: Install joint-filler strips at junctions with slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint fillers full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
- D. Contraction (Control) Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, by one of the following methods:
1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with groover tool to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

3.5 CONCRETE PLACEMENT

- A. Comply with recommendations in ACI 304R for measuring, mixing, transporting, and placing concrete.
- B. Do not add water to concrete during delivery, at Project site, or during placement.
- C. Consolidate concrete with mechanical vibrating equipment.

3.6 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched, and fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.
 1. Apply to concrete surfaces not exposed to public view.
- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.7 FINISHING UNFORMED SURFACES

- A. General: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Screed surfaces with a straightedge and strike off. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane before excess moisture or bleedwater appears on the surface.
 1. Do not further disturb surfaces before starting finishing operations.

- C. Scratch Finish: Apply scratch finish to surfaces to receive mortar setting beds for ceramic and other bonded cementitious floor finish, unless otherwise indicated.
- D. Float Finish: Apply float finish to surfaces indicated and to surfaces to receive trowel finish.
- E. Trowel Finish: Apply a hard trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, paint, or another thin film-finish coating system.
- F. Trowel and Fine-Broom Finish: Apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by thin-set methods. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.
- G. Nonslip Broom Finish: Apply a nonslip broom finish to surfaces indicated and to exterior concrete platforms, steps, and ramps. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.

3.8 TOLERANCES

- A. Comply with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

3.9 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection, and follow recommendations in ACI 305R for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure formed and unformed concrete for at least seven days by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.

- c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.10 CONCRETE SEALER APPLICATION

- A. Where concrete sealer is indicated or scheduled on the Drawings, provide as follows:
 1. Clean substrate of substances that might interfere with penetration or performance of concrete sealer. Test for moisture content, according to sealer manufacturer's written instructions, to ensure surface is sufficiently dry.
 2. Apply a heavy-saturation spray coating of concrete sealer on surfaces indicated for treatment using low-pressure spray equipment. Comply with manufacturer's written instructions for using airless spraying procedure, unless otherwise indicated.
 3. Immediately clean concrete sealer from adjoining surfaces and surfaces soiled or damaged by application as work progresses. Repair damage caused by sealer application. Comply with manufacturer's written cleaning instructions.

3.11 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement according to requirements specified in this Article. Perform tests according to ACI 301.
- B. Testing Agency: The Contractor shall engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement. Tests will be performed according to ACI 301.
 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mix exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
 2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mix placed each day.

3.12 REPAIRS

- A. Remove and replace concrete that does not comply with requirements in this Section.

END OF SECTION 03300

SECTION 04810
UNIT MASONRY ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes unit masonry assemblies consisting of the following:
1. Concrete masonry units.
 2. Decorative concrete masonry units.
 3. Mortar and grout.
 4. Reinforcing steel.
 5. Masonry joint reinforcement.
 6. Ties and anchors.
 7. Embedded flashing.
 8. Miscellaneous masonry accessories.
- B. Products installed, but not furnished, under this Section include the following:
1. Hollow-metal frames in unit masonry openings, furnished under Division 8 Section "Steel Doors and Frames."

1.2 DEFINITIONS

- A. Reinforced Masonry: Masonry containing reinforcing steel in fully grouted cells.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide unit masonry that develops the following net-area compressive strengths (f'm) at 28 days. Determine compressive strength of masonry by testing masonry prisms according to IBC Section 2105.
1. For Concrete Unit Masonry: $f'm = 1900$ psi

1.4 SUBMITTALS

- A. Product Data:
1. For each different masonry unit, accessory, and other manufactured product specified.
 2. Documentation indicating distance between manufacturing facility and the project site. Indicate distance of raw material origin from project site. Indicate relative dollar value of local/regional material to total dollar value of products included in project.

- a. Environmental Data
 - b. Concrete masonry Units (CMU)
 - c. Cement
- B. Shop Drawings: Show fabrication and installation details for the following:
 1. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.
- C. Samples for Verification: For the following:
 1. Full-size units for each different exposed masonry unit required, showing the full range of exposed colors, textures, and dimensions to be expected in the completed construction, and to verify match with existing CMU.
- D. Qualification Data: For firms and persons specified in "Quality Assurance" Article.
- E. Material Test Reports: From a qualified testing agency indicating and interpreting test results of the following for compliance with requirements indicated:
 1. Each type of masonry unit required.
 - a. Include test results, measurements, and calculations establishing net-area compressive strength of masonry units.
 2. Mortar complying with property requirements of 2003 IBC Section 2103.7.
 3. Grout mixes complying with compressive strength requirements of 2003 IBC Section 2103.10. Include description of type and proportions of grout ingredients.
- F. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
 1. Each type of masonry unit required.
 - a. Include test data, measurements, and calculations establishing net-area compressive strength of masonry units.
 2. Each cement product required for mortar and grout, including name of manufacturer, brand, type, and weight slips at time of delivery.
 3. Each combination of masonry unit type and mortar type. Include statement of net-area compressive strength of masonry units, mortar type, and net-area compressive strength of masonry determined according to Table 2103.7 of the 2003 IBC.
 4. Each material and grade indicated for reinforcing bars.
 5. Each type and size of joint reinforcement.
 6. Each type and size of anchor, tie, and metal accessory.
- G. Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1093 to conduct the testing indicated, as documented according to ASTM E 548.
- B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.
- C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.
- D. Preconstruction Testing Service: Engage a qualified independent testing agency to perform the following preconstruction testing:
 - 1. Concrete Masonry Unit Test: For each concrete masonry unit indicated, per ASTM C 140.
 - 2. Prism Test: For each type of wall construction indicated, per 2003 IBC Section 2105.
 - 3. Mortar Test: For mortar properties per 2003 IBC Section 2103.
 - 4. Grout Test: For compressive strength per 2003 IBC Section 2105.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
 - 1. Protect Type I concrete masonry units from moisture absorption so that, at the time of installation, the moisture content is not more than the maximum allowed at the time of delivery.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.7 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
1. Protect base of walls from rain-splashed mud and from mortar splatter by coverings spread on ground and over wall surface.
 2. Protect sills, ledges, and projections from mortar droppings.
 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Hot-Weather Requirements: Protect unit masonry work when temperature and humidity conditions produce excessive evaporation of water from mortar and grout. Provide artificial shade and wind breaks and use cooled materials as required. Comply with hot-weather construction requirements contained in Section 2104.4 of the 2003 IBC Code
1. When ambient temperature exceeds 100 deg F, or 90 deg F with a wind velocity greater than 8 mph, do not spread mortar beds more than 48 inches ahead of masonry. Set masonry units within one minute of spreading mortar.

PART 2 - PRODUCTS

2.1 CONCRETE MASONRY UNITS

- A. General: Provide shapes indicated and as follows:
1. Provide special shapes for corners, jambs, sash, control joints, bonding, and other special conditions.
 2. Provide square-edged units for outside corners, unless indicated as bullnose.
 3. Concrete masonry units provided shall, in general, match the appearance of existing CMU adjacent to the new work.
- B. Concrete Masonry Units: ASTM C 90 and as follows:
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.
 2. Weight Classification: Normal weight.
 3. Provide Type I, moisture-controlled units.
 4. Size (Width): Manufactured to the following dimensions:
 - a. 8 inches nominal; 7-5/8 inches actual.

5. Exposed Faces: match color of existing adjacent masonry.
 - a. Where units are to be left exposed, provide color and texture matching the existing at the site.

C. Decorative Concrete Masonry Units: ASTM C 90 and as follows:

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.
2. Weight Classification: Normal weight, unless otherwise.
3. Provide Type I, moisture-controlled units.
4. Size: Manufactured to dimensions indicated for nondecorative units.
5. Finish: Exposed faces of the following general description matching color, pattern, and texture of Architect's selection.
 - a. Normal-weight aggregate, split-face finish.
 - b. Normal-weight aggregate, split-face finish, 3-score, where indicated.
 - c. Integral Color: As selected from manufacturer's standards, except custom color if required in order to match existing masonry.

2.2 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of Portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207.
- D. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
- E. Aggregate for Grout: ASTM C 404.
- F. Ready Mixed Grout: ASTM C 94.
- G. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494, Type C, and recommended by the manufacturer for use in masonry mortar of composition indicated.
- H. Water: Potable.
- I. Products: Subject to compliance with requirements, provide one of the following:
 1. Cold-Weather Admixture:
 - a. Accelguard 80; Euclid Chemical Co.

2.3 REINFORCING STEEL

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M; ASTM A 616/A 616M, including Supplement 1; or ASTM A 617/A 617M, Grade 60. Provide galvanized or epoxy coated reinforcing where reinforcing will be exposed to moisture.

2.4 TIES AND ANCHORS, GENERAL

- A. General: Provide wall ties and anchors, specified in subsequent articles, made from materials that comply with this Article, unless otherwise indicated.
- B. Anchors and Ties: Stainless steel, ASTM A 167, Type 304 or zinc-coated steel, galvanized after fabrication, ASTM A 153/A 153M. For completely embedded wire, ASTM A 641/A 641M, Class 1 or 3. Sheet metal ties completely embedded in mortar, ASTM A 653/A 653M, Class G60. Do not use corrugated wall ties.
- C. Horizontal Joint Reinforcement and Wire Reinforcement: Fabricate from cold drawn steel wire, ASTM A 82/A82M. Hot-dipped galvanize after fabrication, ASTM A 153/A 153M, B-2. Provide ACI 530-1 truss type reinforcement with two or more longitudinal wires welded to continuous diagonal cross wire, or ladder type with perpendicular cross wires not more than 400 mm (16 inches) O.C.
- D. Steel Plates, Shapes, and Bars: ASTM A 36.

2.5 RIGID ANCHORS

- A. General: Fabricate from steel bars as follows:
 - 1. 1-1/2 inches wide by 1/4 inch thick by 24 inches long, with ends turned up 2 inches or with cross pins.
 - 2. As indicated.
 - 3. Finish: Hot-dip galvanized to comply with ASTM A 153.

2.6 MOISTURE BARRIER

- A. Building Paper: FS UU-B-790, Type I, Grade D, 60 minutes.

2.7 MISCELLANEOUS ANCHORS

- A. Unit Type Inserts in Concrete: Cast-iron or malleable-iron inserts of type and size indicated.
- B. Anchor Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153, Class C; of diameter and length indicated and in the following configurations:
 - 1. Headed bolts.

2. Nonheaded bolts, bent in manner indicated.
- C. Postinstalled Anchors: Anchors as described below, with capability to sustain, without failure, load imposed within factors of safety indicated, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
1. Type: Expansion anchors.
 2. Corrosion Protection: Carbon-steel components zinc plated to comply with ASTM B 633, Class Fe/Zn 5 (5 microns) for Class SC 1 service condition (mild).
 3. For Postinstalled Anchors in Concrete: Capability to sustain, without failure, a load equal to four times the loads imposed.
 4. For Postinstalled Anchors in Grouted Masonry Units: Capability to sustain, without failure, a load equal to six times the loads imposed.

2.8 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Fabricate from the following metal complying with requirements specified in Division 7 Section "Sheet Metal Flashing and Trim" and below:
1. Stainless Steel: 0.0156 inch thick.
 2. Fabricate through-wall metal flashing embedded in masonry from sheet metal indicated above and with ribs at 3-inch intervals along length of flashing to provide an integral mortar bond.
- B. Solder and Sealants for Sheet Metal Flashings: As specified in Division 7 Section "Sheet Metal Flashing and Trim."
- C. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by the flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.9 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene or PVC.
- B. Preformed Control-Joint Gaskets: Material as indicated below, designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
1. Styrene-Butadiene-Rubber Compound: ASTM D 2000, Designation M2AA-805.
 2. PVC: ASTM D 2287, Type PVC-65406.
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

D. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells with loops for holding reinforcing bars in center of cells. Units are formed from 0.142-inch steel wire, hot-dip galvanized after fabrication.

1. Provide units with either two loops or four loops as needed for number of bars indicated.

2.10 MASONRY CLEANERS

A. Job-Mixed Detergent Solution: Solution of 1/2-cup dry measure tetrasodium polyphosphate and 1/2-cup dry measure laundry detergent dissolved in 1 gal. of water.

2.11 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Add cold-weather admixture (if used) at the same rate for all mortar, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in the form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C270, Proportion Specification.

1. Limit cementitious materials in mortar for exterior and reinforced masonry to Portland cement, mortar cement, and lime.
2. For masonry below grade, in contact with earth, and where indicated, use Type S.
3. For reinforced masonry and where indicated, use Type S.
4. For exterior, above-grade, load-bearing and non-load-bearing walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type S.

D. Grout for Unit Masonry: Comply with ASTM C 476 and ACI 530.1.

1. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143.
2. Provide minimum grout strength of 140 Kg/cm² (2000 psi) in 28 days, as tested in accordance with ASTM C 1019.

2.12 SOURCE QUALITY CONTROL

A. Engage a qualified independent testing agency to perform source quality-control testing indicated below:

- B. Concrete Masonry Unit Tests: For each type of concrete masonry unit indicated, units will be tested according to ASTM C 140.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions for compliance with requirements for installation tolerances and other conditions affecting performance.
 - 1. Verify that foundations are within tolerances specified.
 - 2. Verify that reinforcing dowels are properly placed.
 - 3. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Before installation, examine rough-in and built-in construction to verify actual locations of piping connections.

3.2 INSTALLATION, GENERAL

- A. Thickness: Build masonry construction to the full thickness shown. Build single-wythe walls to the actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this Section and in other Sections of the Specifications.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to the opening.
- D. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide a continuous pattern and to fit adjoining construction. Where possible, use full-size units without cutting. Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
 - 1. Mix units from several pallets or cubes as they are placed.

3.3 FLASHING

- A. Continuous flashing shall be provided at the bottom of the wall cavity as shown. Flashing shall also be provided above and below opening at sills as indicated.
- B. Flashing shall be lapped a minimum of 150mm (6 inches) at joints and shall be sealed with a mastic as recommended by the flashing manufacturer.

- C. Flashing shall extend through the exterior face of the masonry veneer and shall be turned down to form a drip.

3.4 CONSTRUCTION TOLERANCES

- A. Comply with tolerances in ACI 530.1/ASCE 6/TMS 602 and the following:
- B. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/4 inch in 20 feet, nor 1/2 inch maximum.
- C. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, nor 1/2 inch maximum.
- D. For conspicuous horizontal lines, such as exposed lintels, sills, parapets, and reveals, do not vary from level by more than 1/4 inch in 20 feet, nor 1/2 inch maximum.
- E. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.

3.5 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
 - 1. One-half running bond with vertical joint in each course centered on units in courses above and below.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: In each course, rack back one-half-unit length for one-half running bond or one-third-unit length for one-third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly if required, and remove loose masonry units and mortar before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.
- F. Fill space between hollow-metal frames and masonry solidly with mortar, unless otherwise indicated.

3.6 MORTAR BEDDING AND JOINTING

- A. Lay hollow masonry units as follows:
 - 1. With full mortar coverage on horizontal and vertical face shells.
 - 2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.
- B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than the joint thickness, unless otherwise indicated.

3.7 MASONRY JOINT REINFORCEMENT

- A. General: Provide continuous masonry joint reinforcement as indicated. Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
 - 1. Space reinforcement as detailed.
- B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.
- C. Provide continuity at corners and wall intersections by using prefabricated "L" and "T" sections. Cut and bend reinforcing units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.8 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joints in unit masonry where indicated. Build-in related items as masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement.
- B. Form control joints in concrete masonry as follows:
 - 1. Fit bond-breaker strips into hollow contour in ends of concrete masonry units on one side of control joint. Fill resultant core with grout and rake joints in exposed faces.
 - 2. Install preformed control-joint gaskets designed to fit standard sash block.
 - 3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake joint.
 - 4. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete.

3.9 FLASHING

- A. General: Install embedded flashing where indicated.

- B. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Unless otherwise indicated, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.

3.10 REINFORCED UNIT MASONRY INSTALLATION

- A. Placing Reinforcement: Comply with requirements of Section 2104.5 of the Uniform Building Code.
- B. Grouting: Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.
 - 1. Comply with requirements of Section 2104.6 of the Uniform Building Code for cleanouts and for grout placement, including minimum grout space and maximum pour height.

3.11 FIELD QUALITY CONTROL

- A. Engage a qualified independent testing agency to perform field quality-control testing indicated below.
- B. Testing Frequency: Tests and Evaluations listed in this Article will be performed during construction for each 5000 sq. ft. of wall area or portion thereof.
- C. Mortar properties will be tested per ASTM C 780.
- D. Grout will be sampled and tested for compressive strength per ASTM C 1019.
- E. Concrete Masonry Unit Tests: For each type of concrete masonry unit indicated, units will be tested according to ASTM C 140.
- F. Prism-Test Method: For each type of wall construction indicated, masonry prisms will be tested per ACI 530.1, and as follows:
 - 1. Prepare 1 set of prisms for testing at 7 days and 1 set for testing at 28 days.

3.12 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application.

- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Engineer's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Protect nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing the surfaces thoroughly with clear water.

3.13 MASONRY WASTE DISPOSAL

- A. Recycling: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

END OF SECTION 04810

SECTION 05500
METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Steel framing and supports for countertops.
 - 2. Steel framing and supports for applications where framing and supports are not specified in other Sections.

1.2 SUBMITTALS

- A. Product Data: For the following:
 - 1. Product information for all fasteners and pre-fabricated items.
- B. Show Drawings: For all steel fabrications

1.3 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1, "Structural Welding Code--Steel."
 - 2. AWS D1.2, "Structural Welding Code--Aluminum."
 - 3. AWS D1.3, "Structural Welding Code--Sheet Steel."
 - 4. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Where metal fabrications are indicated to fit walls and other construction, verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.5 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.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36.
- B. Steel Tubing: Cold-formed steel tubing complying with ASTM A 500.
- C. Steel Pipe: ASTM A 53, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.
- D. Malleable-Iron Castings: ASTM A 47, Grade 32510.
- E. Gray-Iron Castings: ASTM A 48, Class 30, unless another class is indicated or required by structural loads.
- F. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- G. Perforated Metal Panels: 22 gauge carbon steel, galvanized, and as follows:
 - 1. Perforations: Round, staggered standard, 1/4" diameter, 3/8" staggered centers, with 8.5 holes PSI, 42% O/A.
 - 2. Margins: None
 - 3. Flatness: 1/2-inch tolerance
 - 4. End Pattern: Finished end.

2.3 PAINT

- A. Shop Primers: Provide primers that comply with Division 9 Section "Painting."
- B. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with performance requirements in FS TT-P-664; selected for good resistance to normal atmospheric corrosion, compatibility with finish paint systems indicated, and capability to provide a sound foundation for field-applied topcoats despite prolonged exposure.

- C. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
- D. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC-Paint 12, except containing no asbestos fibers, or cold-applied asphalt emulsion complying with ASTM D 1187.

2.4 FASTENERS

- A. General: Provide Type 304 or 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, where built into exterior walls. Select fasteners for type, grade, and class required.
- B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A; with hex nuts, ASTM A 563; and, where indicated, flat washers.
- C. Anchor Bolts: ASTM F 1554, Grade 36.
- D. Machine Screws: ASME B18.6.3.
- E. Plain Washers: Round, carbon steel, ASME B18.22.1.
- F. Lock Washers: Helical, spring type, carbon steel, ASME B18.21.1.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
 - 1. Material: Carbon-steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
- H. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as needed.
- I. Miscellaneous Fasteners and Connectors: As indicated on Drawings, galvanized or stainless steel for exterior use.

2.5 GROUT

- A. 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.

2.6 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. 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. Shear and punch metals cleanly and accurately. Remove burrs.
- C. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. 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.
- E. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- F. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- G. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.
- H. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- I. Remove sharp or rough areas on exposed traffic surfaces.
- J. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

2.7 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports that are not a part of structural-steel framework provided by metal building manufacturer as necessary to complete the Work.
- B. Fabricate units from structural-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.
- C. Galvanize miscellaneous framing and supports where indicated.

2.8 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.

2.9 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
 - 1. ASTM A 123, for galvanizing steel and iron products.
- 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): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
- C. 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," for shop painting.
 - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include threaded fasteners for concrete inserts, toggle bolts, through-bolt, and other connectors.
- 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. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- D. 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.

- E. Field Welding: Comply with the following requirements:
 - 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. 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.

3.2 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, if any.

3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 9 Section "Painting."
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 05500

SECTION 06100
ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Framing with dimension lumber.
2. Framing with timber.
3. Wood blocking and nailers.
4. Sheathing.

1.2 DEFINITIONS

A. Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise indicated.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. WCLIB - West Coast Lumber Inspection Bureau.
2. WWPA - Western Wood Products Association.

1.3 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the American Lumber Standards Committee Board of Review.

- C. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
1. Preservative-treated wood.
 2. Power-driven fasteners.
 3. Powder-actuated fasteners.
 4. Expansion anchors.
 5. Metal framing anchors.

1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.
- B. Source Limitations for Engineered Wood Products: Obtain each type of engineered wood product through one source from a single manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 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. Laminated-Veneer Lumber:
 - a. Boise Cascade Corporation.
 - b. Georgia-Pacific Corporation.
 - c. Louisiana-Pacific Corporation.
 - d. Pacific Woodtech Corp.
 - e. Trus Joist MacMillan.
 - f. Union Camp Corp.; Building Products Division.
 - g. Willamette Industries, Inc.
 2. Gypsum Sheathing Board:
 - a. American Gypsum Co.
 - b. G-P Gypsum Corporation.

- c. National Gypsum Company.
 - d. United States Gypsum Co.
3. Metal Framing Anchors:
- a. Simpson Strong-Tie Company, Inc.

2.2 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
- 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece
 - 3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - 4. Provide dressed lumber, S4S, unless otherwise indicated.
 - 5. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.
 - 6. Provide dry lumber with 15 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

2.3 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWPA C2 (lumber) and AWPA C9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).
- 1. Preservative Chemicals: Acceptable to authorities having jurisdiction
 - 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
 - 3. Wood framing members less than 18 inches above grade.
 - 4. Wood floor plates that are installed over concrete slabs directly in contact with earth.

2.4 DIMENSION LUMBER

- A. General: Provide dimension lumber of grades indicated according to the American Lumber Standards Committee National Grading Rule provisions of the grading agency indicated.
- 1. Western woods; WCLIB or WWPA.
- B. Framing Other Than Non-Load-Bearing Partitions grade and any of the following species:
- 1. Douglas fir-larch; WCLIB or WWPA.

2.5 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Furring.
- B. For items of dimension lumber size, provide No. 2 or better grade lumber with 15 percent maximum moisture content and the following species:
 - 1. Hem-fir or Hem-fir (north); NLGA, WCLIB, or WWPA.

2.6 METAL FRAMING ANCHORS

- A. General: Provide framing anchors made from metal indicated, of structural capacity, type, and size indicated, and as follows:
 - 1. Research/Evaluation Reports: Provide products acceptable to authorities having jurisdiction and for which model code research/evaluation reports exist that show compliance of metal framing anchors, for application indicated, with building code in effect for Project.
 - 2. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- B. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.

- D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. CABO NER-272 for power-driven fasteners.
 - 2. Published requirements of metal framing anchor manufacturer.
 - 3. Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in the International Building Code.
- E. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.

3.2 WOOD, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.

3.3 ROOF JOIST FRAMING INSTALLATION

- A. General: Install roof joists with crown edge up and support ends of each member with not less than 1-1/2 inches of bearing on wood or metal. Attach joists as follows:
 - 1. Where supported on wood members, by using metal framing anchors.
 - 2. Where framed into wood supporting members, by using wood ledgers as indicated or, if not indicated, by using metal joist hangers.
- B. Frame openings with headers and trimmers supported by metal joist hangers; double headers and trimmers where span of header exceeds 48 inches
- C. Do not notch in middle third of joists; limit notches to one-sixth depth of joist, one-third at ends. Do not bore holes larger than 1/3 depth of joist; do not locate closer than 2 inches from top or bottom.
- D. Provide solid blocking of 2-inch nominal thickness by depth of joist at ends of joists unless nailed to header or band.
- E. Provide solid blocking between joists under jamb studs for openings.

END OF SECTION 06100

SECTION 06105
MISCELLANEOUS CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Treated nailers and blocking.
 - 2. Plywood decking.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 7 Sections "SBS-Modified Bituminous Membrane Roofing."
 - 2. Division 7 Section "Sheet Flashing and Trim" for all work related to roofing nailers.

1.2 SUBMITTALS

- A. Product Data: Provide product data for plywood sheathing and treated lumber.
- B. Wood treatment data as follows, including chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated materials:
 - 1. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
 - 2. For waterborne-treated products, include statement that moisture content of treated materials was reduced to levels indicated before shipment to Project site.
- C. Warranty of chemical treatment manufacturer for each type of treatment.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Keep materials under cover and dry. Protect from weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks and under temporary coverings.
 - 1. For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

- A. Lumber Standards: Comply with DOC PS 20, "American Softwood Lumber Standard," and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.
- B. Inspection Agencies: Inspection agencies, and the abbreviations used to reference them, include the following:
 - 1. WCLIB - West Coast Lumber Inspection Bureau.
 - 2. WWPA - Western Wood Products Association.
- C. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.
 - 1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece.
- D. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - 1. Provide dressed lumber, S4S, unless otherwise indicated.
 - 2. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. General: Where lumber or plywood is indicated as preservative treated or is specified to be treated, comply with applicable requirements of AWPA C2 (lumber) and AWPA C9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.
- B. Pressure treat aboveground items with waterborne preservatives to a minimum retention of 0.25 lb/cu. ft.. After treatment, kiln-dry lumber and plywood to a maximum moisture content of 19 and 15 percent, respectively. Treat indicated items and the following:
 - 1. Wood, nailers, blocking, stripping, and similar members in connection with roofing, flashing, and waterproofing.
 - 2. Wood sleepers, blocking, and similar concealed members in contact with masonry or concrete.
 - 3. Wood floor plates installed over concrete slabs directly in contact with earth.

2.3 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including nailers, blocking, grounds, and similar members.
- B. Fabricate miscellaneous lumber from dimension lumber of sizes indicated and into shapes shown.
- C. Moisture Content: 19 percent maximum for lumber items not specified to receive wood preservative treatment.
- D. Grade: For dimension lumber sizes, provide No. 3 or Standard grade lumber per ALSC's NGRs of any species. For board-size lumber, provide No. 3 Common grade per WWPA; or Standard grade per WCLIB or WWPA of any species.

2.4 WOOD-BASED STRUCTURAL-USE PANELS

- A. Structural-Use Panel Standards: Provide either all-veneer, mat-formed, or composite panels complying with DOC PS 2, "Performance Standard for Wood-Based Structural-Use Panels," unless otherwise indicated. Provide plywood panels complying with DOC PS 1, "U.S. Product Standard for Construction and Industrial Plywood," where plywood is indicated.
- B. Trademark: Factory mark structural-use panels with APA trademark evidencing compliance with grade requirements.
- C. Miscellaneous Concealed Plywood: C-C Plugged Exterior, thickness as indicated but not less than ½-inch.

2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where miscellaneous carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of Type 304 stainless steel.
- B. Nails, Wire, Brads, and Staples: FS FF-N-105.
- C. Power-Driven Fasteners: CABO NER-272.
- D. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement. Provide lumber in minimum lengths of 48" on long runs.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted.
- C. Fit carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of nailers, blocking, grounds, and similar supports to allow attachment of other construction.
- D. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.
- E. Use fasteners of appropriate type and length. Predrill members when necessary to avoid splitting wood.

3.2 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

- A. Install where shown and where required for screeding or attaching other work. Cut and shape to required size. Coordinate locations with other work involved.
- B. Attach to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

END OF SECTION 06105

SECTION 06402

INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Plastic-laminate cabinets.
 - 2. Solid-surfacing-material countertops.
- B. Related Sections include the following:
 - 1. Division 6 Section "Miscellaneous Carpentry" for interior concealed carpentry.

1.2 SUBMITTALS

- A. Product Data: For high-pressure decorative laminate, adhesive for bonding plastic laminate, solid-surfacing material, cabinet hardware and accessories, and finishing materials and processes.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 - 1. Show locations and sizes of cutouts and holes for plumbing fixtures, and other items installed in architectural woodwork.
 - 2. Apply WIC-certified compliance label to first page of Shop Drawings.
- C. Samples for Verification: For the following:
 - 1. Plastic-laminate-clad panel products, 200 by 250 mm, for each type, color, pattern, and surface finish.
 - 2. Solid-surfacing materials, 150 mm square.
 - 3. Exposed cabinet hardware and accessories, one unit for each type.
- D. Product Certificates: Signed by manufacturers of woodwork certifying that products furnished comply with requirements.

1.3 QUALITY ASSURANCE

- A. Quality Standard: Unless otherwise indicated, comply with WIC's "Manual of Millwork" for grades of interior architectural woodwork, construction, finishes, and other requirements.

1. Provide WIC-certified compliance certificate indicating that woodwork complies with requirements of grades specified.
2. Provide WIC-certified compliance certificate for installation.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
- B. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed and indicate measurements on Shop Drawings.

1.6 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide materials that comply with requirements of the WIC quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. Wood Products: Comply with the following:
 1. Hardboard: AHA A135.4.
 2. Medium-Density Fiberboard: ANSI A208.2, Grade MD.
 3. Particleboard: ANSI A208.1, Grade M-2.
 4. Softwood Plywood: DOC PS 1, Medium Density Overlay.

- C. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated, or if not indicated, as required by woodwork quality standard.
- D. Adhesive for Bonding Plastic Laminate: Urea-formaldehyde typical.
- E. Adhesive for Bonding Plastic Laminate: Resorcinol at conditions where fire-resistance is required.
- F. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with material and performance requirements in ANSI Z124.3, without a precoated finish.

2.2 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets.
- B. Hardware Standard: Comply with BHMA A156.9 for items indicated by referencing BHMA numbers or items referenced to this standard.
- C. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 135 degrees of opening, self-closing.
- D. Wire Pulls: Back mounted, 100 mm long, 8 mm in diameter.
- E. Catches: Roller catches, BHMA A156.9, B03071.
- F. Adjustable Shelf Standards and Supports (in cabinets): BHMA A156.9, B04071; with shelf rests, B04081.
- G. Drawer Slides: Side-mounted, full-extension, zinc-plated steel drawer slides with steel ball bearings, BHMA A156.9, B05091, and rated for the following loads:
 - 1. Box Drawer Slides: 440 N .
 - 2. File Drawer Slides: 670 N .
 - 3. Pencil Drawer Slides: 200 N .
- H. Locks and Latches: BHMA 601, Series 4000, Grade 2. Provide at locations required by RFP.
- I. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 - 1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
- J. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.3 INSTALLATION MATERIALS

- A. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

2.4 FABRICATION, GENERAL

- A. Interior Woodwork Grade: Provide Custom grade interior woodwork complying with the referenced quality standard.
- B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.
- C. Fabricate woodwork to dimensions, profiles, and details indicated.
- D. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible, before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
- E. Shop cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
 - 1. Seal edges of openings in countertops (fabricated with wood core) with a coat of varnish.

2.5 PLASTIC-LAMINATE CABINETS

- A. Quality Standard: Comply with WIC Section 15.
- B. Grade: Custom.
- C. WIC Construction Style: Style A.
- D. WIC Construction Type: Type I, multiple self-supporting units rigidly joined together.
- E. WIC Door and Drawer Front Style: Flush overlay.
- F. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:
 - 1. Horizontal Surfaces Other Than Tops: HGS.
 - 2. Postformed Surfaces: HGP.
 - 3. Vertical Surfaces: VGS.
 - 4. Edges: HGS minimum thickness, matching laminate in color, pattern, and finish.

- G. Materials for Semiexposed Surfaces: Provide surface materials indicated below:
 - 1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, Grade VGS.
 - 2. Drawer Sides and Backs: Thermoset decorative overlay.
 - 3. Drawer Bottoms: Thermoset decorative overlay.
- H. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements: Provide in colors indicated on Drawings.

2.6 SOLID-SURFACING-MATERIAL COUNTERTOPS

- A. Quality Standard: Comply with WIC Section 17D and/or 17E.
- B. Grade: Custom.
- C. Solid-Surfacing-Material Thickness: 13 mm.
- D. Colors, Patterns, and Finishes: Provide materials and products that result in colors of solid-surfacing material complying with the following requirements: As indicated on Drawings selected from Surell products by Formica.
- E. Fabricate tops in one piece with shop-applied backsplashes and edges, unless otherwise indicated. Comply with solid-surfacing-material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.
- F. Drill holes in countertops for plumbing fittings and soap dispensers in shop.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Condition woodwork to average prevailing humidity conditions in installation areas before installation.
- B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION

- A. Quality Standard: Install woodwork to comply with WIC Section 26 for the same grade specified in Part 2 of this Section for type of woodwork involved.
- B. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 3 mm in 2400 mm.

- C. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces and repair damaged finish at cuts.
- D. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.
- E. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
 - 1. Install cabinets with no more than 3 mm in 2400 mm sag, bow, or other variation from a straight line.
 - 2. Fasten wall cabinets through back, near top and bottom, at ends and not more than 400 mm o.c. with No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish.
- F. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
 - 1. Align adjacent solid-surfacing-material countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
 - 2. Install countertops with no more than 3 mm in 2400 mm sag, bow, or other variation from a straight line.
 - 3. Caulk space between backsplash and wall with sealant specified in Division 7 Section "Joint Sealants."
- G. Complete the finishing work specified in this Section to extent not completed at shop or before installation of woodwork. Fill nail holes with matching filler where exposed.

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean woodwork on exposed and semiexposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 06402

SECTION 07552

SBS-MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Protected, SBS-modified bituminous membrane roofing.
2. Roof insulation.

B. Related Sections include the following:

1. Division 6 Section "Miscellaneous Carpentry" for wood nailers, cants, curbs, and blocking and for wood-based, structural-use roof deck panels.
2. Division 7 Section "Building Insulation" for insulation beneath the roof deck.
3. Division 7 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counterflashings.

1.2 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

B. Hot Roofing Asphalt: Roofing asphalt heated to its equiviscous temperature, the temperature at which its viscosity is 125 centipoise for mop-applied roofing asphalt and 75 centipoise for mechanical spreader-applied roofing asphalt, within a range of plus or minus 25 deg F, measured at the mop cart or mechanical spreader immediately before application.

C. Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," before multiplication by a safety factor.

D. Factored Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," after multiplication by a safety factor.

1.3 PERFORMANCE REQUIREMENTS

A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.

- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. FMG Listing: Provide roofing membrane, base flashings, and component materials that comply with requirements in FMG 4450 and FMG 4470 as part of a roofing system and that are listed in FMG's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FMG markings.
 - 1. Fire/Windstorm Classification: Class 1A-75
 - 2. Hail Resistance: MH

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other Work.
 - 1. Base flashings, cants, and membrane terminations.
 - 2. Tapered insulation, including slopes.
 - 3. Crickets, saddles, and tapered edge strips, including slopes.
 - 4. Insulation fastening patterns.
- C. Samples for Verification: For the following products:
 - 1. 12 - by-12 inch square of base sheet, ply sheet, smooth-surface roofing membrane sheet and flashing backer sheet.
 - 2. 12 - by-12 inch square of roof insulation.
 - 3. 10 lb of aggregate ballast in color and gradation indicated.
 - 4. Six insulation fasteners of each type, length, and finish.
- D. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system.
- E. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
 - 1. Submit evidence of meeting performance requirements.
- F. Qualification Data: For Installer and manufacturer.
- G. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of roofing system.
- H. Research/Evaluation Reports: For components of roofing system.
- I. Maintenance Data: For roofing system to include in maintenance manuals.

- J. Warranties: Special warranties specified in this Section. Provide sample warranty with initial submittal for verification of compliance.
- K. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's warranty.
- B. Manufacturer Qualifications: A qualified manufacturer that has UL listing for roofing system identical to that used for this Project.
- C. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.
- D. Source Limitations: Obtain components for roofing system from or approved by roofing system manufacturer.
- E. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, FMG, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
 - 1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.
 - 2. Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof assemblies of which roofing system is a part.
- F. Pre-installation Conference: Conduct conference at Project site. Comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to roofing system including, but not limited to, the following:
 - 1. Meet with City Engineer, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 5. Review structural loading limitations of roof deck during and after roofing.

6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.7 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form (on manufacturer's letterhead), without monetary limitation, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks. Warranty for materials to be from roofing system manufacturer; warranty for workmanship to be from roofing system installer.
 1. Special warranty includes roofing membrane, base flashings, roofing membrane accessories, roof insulation, fasteners, substrate board, vapor retarder, roof pavers, walkway products and other components of roofing system.

2. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 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:

1. SBS-Modified Bituminous Membrane Roofing System:

- a. M.B. Technology (System I3HSF160CSA plus gravel)
- b. Johns Manville International, Inc. (System No. 3CIG)
- c. Or approved equal.

Roofing and flashing specifications are based upon the Johns Manville and MB Technology specifications as listed above, except as modified or otherwise specified herein. Submittals for comparable systems may be accepted for review and consideration.

- B. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:

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 manufacturers specified.

2.2 SBS-MODIFIED ASPHALT-SHEET MATERIALS

- A. Roofing Base Sheet:

1. ASTM D 6163, Grade S, Type I, glass-fiber-reinforced SBS-modified asphalt sheet; smooth surfaced; suitable for application method specified;

- B. Roofing Intermediate Sheets:

1. ASTM D 6163, Grade S, Type I, glass-fiber-reinforced SBS-modified asphalt sheet; smooth surfaced; suitable for application method specified;

- C. Roofing Membrane Cap Sheet: ASTM D 6162, Type II, Grade S, composite polyester, glass-fiber reinforced, SBS-modified asphalt sheet; smooth surface; suitable for application method specified.

2.3 BASE FLASHING SHEET MATERIALS

- A. Backer Sheet: ASTM D 6163, Grade S, Type I, glass-fiber-reinforced, SBS-modified asphalt sheet; smooth surfaced; suitable for application method specified.
- B. Flashing Sheet: ASTM D 6298, glass-fiber-reinforced, SBS-modified asphalt sheet; metal-foil surfaced; suitable for application method specified, and as follows:
 - 1. Foil Surfacing: Aluminum.

2.4 AUXILIARY ROOFING MEMBRANE MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.
- B. Asphalt Primer: ASTM D 41.
- C. Roofing Asphalt: ASTM D 312, Type III or IV as recommended by roofing system manufacturer.
- D. Roofing Asphalt: ASTM D 6152, SEBS modified.
- E. Cold-Applied Adhesive: Roofing system manufacturer's standard asphalt-based, one- or two-part, asbestos-free, cold-applied adhesive specially formulated for compatibility and use with roofing membrane and base flashing.
- F. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.
- G. Mastic Sealant: Polyisobutylene, plain or modified bitumen, nonhardening, nonmigrating, nonskinning, and nondrying.
- H. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roofing membrane components to substrate, tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.
- I. Metal Flashing Sheet: Metal flashing sheet is specified in Division 7 Section "Sheet Metal Flashing and Trim."
- J. Separator Sheet: Polyethylene sheet, 4 mils thick, minimum.
- K. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

2.5 ROOF INSULATION

- A. General: Provide preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated.

- B. Composite Polyisocyanurate Board Insulation: ASTM C 1289, faced with insulation board on one major surface, as indicated below by type, and felt or glass-fiber mat facer on the other.
1. Available Manufacturers:
 - a. Apache Products Company.
 - b. Atlas Roofing Corporation.
 - c. Celotex Corporation.
 - d. Firestone Building Products Company.
 - e. GAF Materials Corporation.
 - f. Johns Manville International, Inc.
 - g. RMAX.
 2. Type III (perlite-insulation-board facer), 1/2 inch (13 mm) thick.
- C. Perlite Board Insulation: ASTM C 728; composed of expanded perlite, cellulosic fibers, binders, and waterproofing agents with top surface seal-coated.
1. Available Manufacturers:
 - a. Celotex Corporation.
 - b. GAF Materials Corporation.
 - c. Johns Manville International, Inc.
- D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.6 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.
- C. Insulation Adhesive: Manufacturer's approved standard insulation adhesive (non-solvent-based) formulated to adhere roof insulation to substrate.
- D. Insulation Cant Strips: ASTM C 728, perlite insulation board.
- E. Wood Nailer Strips: Comply with requirements in Division 6 Section "Miscellaneous Carpentry."
- F. Tapered Edge Strips: ASTM C 728, perlite insulation board.
- G. Cover Board: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board, 1/2 inch thick.

- H. Substrate Joint Tape: 6- or 8-inch- wide, coated, glass-fiber joint tape.

2.7 PROTECTED MEMBRANE ROOFING AGGREGATE BALLAST

- A. Aggregate Ballast: Provide aggregate ballast that will withstand weather exposure without significant deterioration and will not contribute to membrane degradation, of the following type and size:
 - 1. Aggregate Type: Smooth, washed, riverbed gravel or other acceptable smooth-faced stone.
 - 2. Size: ASTM D 448, Size 4, ranging from 3/4 to 1-1/2 inches.

2.8 SBS-MODIFIED ASPHALT-SHEET ROOFING SYSTEM COMPONENTS (by manufacturer)

- A. Johns Manville, System No.3CIG:
 - 1. Insulation (as indicated on plans)
 - 2. Perlite Insulation Board, 1/2" thick
 - 3. DynaBase - base sheet
 - 4. DynaBase - intermediate sheet
 - 5. DynaPly - cap sheet
 - 6. Flood coat
 - 7. Gravel ballast
- B. M.B. Technology (System I3HSF160CSA plus gravel)
 - 1. Insulation (as indicated on plans)
 - 2. Perlite Insulation Board, 1/2" thick
 - 3. LF60 – base sheet
 - 4. LF60 – intermediate sheet
 - 5. SF160CSA – cap sheet
 - 6. Flood coat
 - 7. Gravel Ballast

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and set and braced and that roof drains are securely clamped in place.
 - 2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.

3. Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.
4. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
 - a. Test for moisture by pouring 1 pint of hot roofing asphalt on deck at start of each day's work and at start of each roof area or plane. Do not proceed with roofing work if test sample foams or can be easily and cleanly stripped after cooling.
5. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch out of plane relative to adjoining deck.
6. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Prime surface of concrete deck with asphalt primer at a rate of 3/4 gal./100 sq. ft. and allow primer to dry.
- D. Prime surface of metals to accept asphalt.

3.3 SUBSTRATE BOARD INSTALLATION

- A. Install substrate board with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.
 1. Fasten substrate board to top of roof deck according to recommendations in FMG's "Approval Guide" for specified Windstorm Resistance Classification.
 2. Fasten substrate board to roof deck to resist uplift pressure at corners, perimeter, and field of roof according to roofing system manufacturer's written instructions. Do not mechanically fasten to (E) decking – Provide mastic/adhesive to meet 10 year warranty requirements.

3.4 INSULATION INSTALLATION

- A. Comply with roofing system manufacturer's written instructions for installing roof insulation.

- B. Insulation Cant Strips: Install and secure preformed 45-degree insulation cant strips at junctures of roofing membrane system with vertical surfaces or angle changes greater than 45 degrees.
- C. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
 - 1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- D. Install one or more layers of insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 1-1/2 inches or greater, install 2 or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
- E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- F. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.
- G. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1. At existing concrete decks, set each layer of insulation in a solid mopping of hot roofing asphalt.
 - 2. At existing metal decks, install each layer of insulation in urethane insulation adhesive.
- H. Mechanically Fastened Insulation: Mechanically fasten insulation at existing wood roof deck. Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
 - 1. Fasten insulation according to requirements in FMG's "Approval Guide" for specified Windstorm Resistance Classification.
 - 2. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.

3.5 ROOFING MEMBRANE INSTALLATION, GENERAL

- A. Install roofing membrane system according to roofing system manufacturer's written instructions and applicable recommendations of ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing."
 - 1. Install roofing system MBS similar to Johns Manville system 3CIG, according to specification-plate classifications in NRCA's "The NRCA Roofing and Waterproofing Manual" and requirements in this Section.
- B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.

- C. Where roof slope exceeds ½ inch per 12 inches, install roofing membrane sheets parallel with slope.
 - 1. Backnail roofing membrane sheets to substrate according to roofing system manufacturer's written instructions.
- D. Cooperate with testing and inspecting agencies engaged or required to perform services for installing roofing system.
- E. Coordinate installing roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - 1. Provide tie-offs at end of each day's work to cover exposed roofing membrane sheets and insulation with a course of coated felt set in roofing cement or hot roofing asphalt with joints and edges sealed.
 - 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
 - 3. Remove and discard temporary seals before beginning work on adjoining roofing.
- F. Asphalt Heating: Do not raise roofing asphalt temperature above equiviscous temperature range more than one hour before time of application. Do not exceed roofing asphalt manufacturer's recommended temperature limits during roofing asphalt heating. Do not heat roofing asphalt within 25 deg F of flash point. Discard roofing asphalt maintained at a temperature exceeding finished blowing temperature for more than 4 hours.
- G. Asphalt Heating: Heat and apply SBS-modified roofing asphalt according to roofing system manufacturer's written instructions.
- H. Substrate-Joint Penetrations: Prevent roofing asphalt from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.
 - 1. Adhere to substrate in a solid mopping of hot roofing asphalt.

3.6 SBS BASE-PLY SHEET INSTALLATION

- A. Install two glass-fiber base-ply sheets according to roofing system manufacturer's written instructions starting at low point of roofing system. Align glass-fiber base-ply sheets without stretching. Shingle side laps of glass-fiber base-ply sheets uniformly to ensure required number of glass-fiber base-ply sheets covers substrate at any point. Shingle in direction to shed water. Extend glass-fiber base-ply sheets over and terminate beyond cants.
 - 1. Embed each glass-fiber base-ply sheet in a continuous mopping of hot roofing asphalt, to form a uniform membrane without glass-fiber base-ply sheets touching.

3.7 SBS-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

- A. Install modified bituminous roofing membrane cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:
 - 1. Adhere to substrate in a solid mopping of hot roofing asphalt applied at not less than 425 deg F.
 - 2. Unroll roofing membrane sheets and allow them to relax for minimum time period required by manufacturer.
- B. Laps: Accurately align roofing membrane sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Completely bond and seal laps, leaving no voids.
 - 1. Repair tears and voids in laps and lapped seams not completely sealed.
- C. Install roofing membrane sheets so side and end laps shed water.
- D. Aggregate Surfacing: Promptly after installing and testing roofing membrane, base flashing, and stripping, flood-coat roof surface with 60 lb/100 sq. ft. of hot roofing asphalt. While flood coat is hot and fluid, cast the following average weight of aggregate in a uniform course:
 - 1. Aggregate Weight: 400 lb/100 sq. ft.

3.8 FLASHING AND STRIPPING INSTALLATION

- A. Install base flashing over cant strips and other sloping and vertical surfaces, at roof edges, and at penetrations through roof, and secure to substrates according to roofing system manufacturer's written instructions and as follows:
 - 1. Prime substrates with asphalt primer if required by roofing system manufacturer.
 - 2. Backer Sheet Application: Mechanically fasten backer sheet to walls or parapets. Adhere backer sheet over roofing membrane at cants in a solid mopping of hot roofing asphalt.
 - 3. Backer Sheet Application: Install backer sheet and adhere to substrate in cold-applied adhesive at rate required by roofing system manufacturer.
 - 4. Flashing Sheet Application: Adhere flashing sheet to substrate in asphalt roofing cement; apply cement at rate required by roofing system manufacturer. See drawings.
- B. Extend base flashing up walls or parapets a minimum of 8 inches above roofing membrane and 4 inches onto field of roofing membrane.
- C. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
 - 1. Seal top termination of base flashing with a strip of glass-fiber fabric set in asphalt roofing cement.
- D. Install roofing membrane cap-sheet stripping where metal flanges and edgings are set on membrane roofing according to roofing system manufacturer's written instructions.

- E. Roof Drains: Set 30-by-30-inch lead flashing in bed of asphalt roofing cement on completed roofing membrane. Cover metal flashing with roofing membrane cap-sheet stripping and extend a minimum of 6 inches beyond edge of metal flashing onto field of roofing membrane. Clamp roofing membrane, metal flashing, and stripping into roof-drain clamping ring.
 - 1. Install stripping according to roofing system manufacturer's written instructions.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.
- B. Test Cuts: Test specimens will be removed to evaluate problems observed during quality-assurance inspections of roofing membrane as follows:
 - 1. Approximate quantities of components within roofing membrane will be determined according to ASTM D 3617.
 - 2. Test specimens will be examined for interply voids according to ASTM D 3617 and to comply with criteria established in Appendix 3 of ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing."
- C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect.
 - 1. Notify Architect or Owner 48 hours in advance of date and time of inspection.
- D. Repair or remove and replace components of roofing system where test results or inspections indicate that they do 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.

3.10 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.
- D. Cover any exposed asphalt overflow with aggregate/ballast.

3.11 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS <Insert name> of <Insert address>, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
1. Owner: <Insert name of Owner.>
 2. Address: <Insert address.>
 3. Building Name/Type: <Insert information.>
 4. Address: <Insert address.>
 5. Area of Work: <Insert information.>
 6. Acceptance Date: <Insert date.>
 7. Warranty Period: <Insert time.>
 8. Expiration Date: <Insert date.>
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding <Insert wind speed> mph;
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
 2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this

Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this **< Insert day >** day of **< Insert month >**, **< Insert year >**.

1. Authorized Signature: **< Insert signature. >**
2. Name: **< Insert name. >**
3. Title: **< Insert title. >**

END OF SECTION 07552

SECTION 07620

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following sheet metal flashing and trim:
 - 1. Manufactured reglets.
 - 2. Formed wall flashing and trim.
 - 3. Metal fascia and coping
- B. Related Sections include the following:
 - 1. Division 6 Section "Rough Carpentry" for wood nailers, curbs, and blocking.
 - 2. Division 7 Section " SBS-Modified Bituminous membrane Roofing" for installing sheet metal flashing and trim integral with roofing membrane.
 - 3. Division 7 Section "Joint Sealants" for field-applied sheet metal flashing and trim sealants.

1.2 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. Fabricate and install roof edge flashing copings capable of resisting the following forces according to recommendations in FMG Loss Prevention Data Sheet 1-49:
 - 1. Wind Zone 2: For velocity pressures of 31 to 45 lbf/sq. ft.: 90-lbf/sq. ft. perimeter uplift force, 120-lbf/sq. ft. corner uplift force, and 45-lbf/sq. ft. outward force.
- C. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
- D. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations and any special transitions or terminations. Distinguish between shop- and field-assembled work. Include the following:
 - 1. Identify 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 fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.
- C. Samples for Initial Selection: For each type of sheet metal flashing and trim indicated with factory-applied color finishes.

1.4 QUALITY ASSURANCE

- A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
- B. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
 - 1. Meet with Fire Department Facility Maintenance Officer (FDFMO), Architect, 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. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.
- B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.6 COORDINATION

- A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation; structural quality, mill phosphatized for field painting.
- B. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40; structural quality with manufacturer's standard clear acrylic coating both sides.
- C. Prepainted, Metallic-Coated Steel Sheet: 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. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40; structural quality.
 - 3. Exposed Finishes: Apply the following coil coating:
 - a. Siliconized-Polyester Coating: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil for primer and 0.8 mil for topcoat.
 - 1) Color: As selected by Architect from manufacturer's full range.
 - b. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 1) Fluoropolymer 2-Coat System: Manufacturer's standard 2-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with physical properties and coating performance requirements of AAMA 2604 except as modified below:
 - a) Humidity Resistance: 2000 hours.
 - b) Salt-Spray Resistance: 2000 hours.
 - 2) Color: As selected by Architect from manufacturer's full range.
- D. Lead Sheet: ASTM B 749, Type L51121, copper-bearing lead sheet.

2.2 UNDERLAYMENT MATERIALS

- A. Felts: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.

2.3 MISCELLANEOUS MATERIALS

- 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.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.
 - 1. Exposed Fasteners: Heads matching color of sheet metal by means of plastic caps or factory-applied coating.
 - 2. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.
 - 3. Blind Fasteners: High-strength aluminum or stainless-steel rivets.
 - 4. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
- C. Solder for Zinc-Tin Alloy-Coated Stainless Steel: ASTM B 32, 100 percent tin.
- D. Solder for Lead: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.
- E. Burning Rod for Lead: Same composition as lead sheet.
- F. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.
- G. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- H. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement.
- I. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- J. 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.
- K. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.4 MANUFACTURED SHEET METAL FLASHING AND TRIM

- A. Reglets: Units of type, material, and profile indicated, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junctions.
 - 1. Available Manufacturers:
 - a. Cheney Flashing Company, Inc.
 - b. Fry Reglet Corporation.
 - c. Heckmann Building Products Inc.
 - d. Hickman, W. P. Company.
 - e. Keystone Flashing Company, Inc.
 - f. Sandell Manufacturing Company, Inc.
 - 2. Material: Galvanized steel, 0.0217 inch thick.
 - 3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
 - 4. Flexible Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.

2.5 FABRICATION, GENERAL

- 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, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.
- B. 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.
- C. Fabricate 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.
 - 1. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- D. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.
- E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.
- F. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.

- G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
 - 1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" for application but not less than thickness of metal being secured.

2.6 ROOF DRAINAGE SHEET METAL FABRICATIONS

- A. Downspouts: Fabricate rectangular downspouts complete with mitered elbows. Furnish with metal hangers, from same material as downspouts, and anchors.
 - 1. Manufactured Hanger Style: As shown on drawings.
 - 2. Fabricate downspouts from the following material:
 - a. Galvanized Steel: 0.0217 inch thick.
 - b. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick, or Aluminum-Zinc Alloy-Coated Steel: 0.0217 inch thick, where painted finish has been specified. Refer to the Sheet Metal/Trim Schedule, Sheet A0.1.
- B. Parapet Scuppers: Fabricate scuppers of dimensions required with closure flange trim to exterior, 4-inch- wide wall flanges to interior, and base extending 4 inches beyond cant or tapered strip into field of roof. Fasten gravel guard angles to base of scupper.
 - 1. Fabricate parapet scuppers from the following material:
 - a. Galvanized Steel: 0.0276 inch thick.
 - b. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick, or Aluminum-Zinc Alloy-Coated Steel: 0.0217 inch thick, where painted finish has been specified. Refer to the Sheet Metal/Trim Schedule, Sheet A0.1.

2.7 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing (Gravel Stop) and Fascia Caps: Fabricate in minimum 96-inch- long, but not exceeding 10-foot- long, sections. Furnish with 6-inch- wide joint cover plates.
 - 1. Joint Style: Lap, 4 inches wide.
 - 2. Fabricate with scuppers spaced 10 feet apart, of dimensions required with 4-inch- wide flanges and base extending 4 inches beyond cant or tapered strip into field of roof. Fasten gravel guard angles to base of scupper.
- B. 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. Joint Style: Butt, with 12-inch- wide concealed backup plate.
 - 2. Fabricate copings from the following material:
 - a. Galvanized Steel: 0.0217 inch thick.

- b. Aluminum-Zinc Alloy-Coated Steel: 0.0396 inch thick, where painted finish has been specified. Refer to the Sheet Metal/Trim Schedule, Sheet A0.1.
- C. Base Flashing: Fabricate from the following material:
 - 1. Galvanized Steel: 0.0276 inch thick.
- D. Counterflashing: Fabricate from the following material:
 - 1. Galvanized Steel: 0.0217 inch thick.
- E. Flashing Receivers: Fabricate from the following material:
 - 1. Galvanized Steel: 0.0217 inch thick.
- F. Roof-Penetration Flashing: Fabricate from the following material as noted on the drawings:
 - 1. Lead: 4.0 lb/sq. ft. hard tempered.
 - 2. Galvanized Steel: 0.0276 inch thick.
- G. Roof-Drain Flashing: Fabricate from the following material:
 - 1. Lead: 4.0 lb/sq. ft., hard tempered.

2.8 MISCELLANEOUS SHEET METAL FABRICATIONS

- A. Equipment Support Flashing: Fabricate from the following material:
 - 1. Galvanized Steel: 0.0276 inch thick.

2.9 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work.
 - 1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 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. Torch cutting of sheet metal flashing and trim is not permitted.
- 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 fabricator or manufacturers of dissimilar metals.
 - 1. Coat side of lead 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 underlayment.
 - 3. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance.
- C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
- D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.
- E. 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.
 - 1. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
- F. 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 or bayonet-type 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 elastomeric sealant concealed within joints.

- G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
 - 1. Galvanized or Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.
 - 2. Aluminum: Use aluminum or stainless-steel fasteners.
- H. Seal joints with elastomeric sealant 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 either 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 Division 7 Section "Joint Sealants."
- I. 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 where pre-tinned surface would show in finished Work.
 - 1. Do not solder prepainted, metallic-coated steel sheet.
 - 2. Pre-tinning is not required for lead.
 - 3. Where surfaces to be soldered are lead coated, do not tin edges, but wire brush lead coating before soldering.
 - 4. Do not use open-flame torches for soldering. Heat surfaces to receive solder and flow solder into joints. Fill joints completely. Completely remove flux and spatter from exposed surfaces.

3.3 ROOF DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.
- B. Downspouts: Join sections with 1-1/2-inch telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c. in between.
 - 1. Provide elbows at base of downspout to direct water away from building.
 - 2. Connect downspouts to underground drainage system indicated.
- C. Parapet Scuppers: Install scuppers where indicated through parapet. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.

1. Anchor scupper closure trim flange to exterior wall and seal or solder to scupper.
 2. Loosely lock front edge of scupper with conductor head.
 3. Seal or solder exterior wall scupper flanges into back of conductor head.
- D. Conductor Heads: Anchor securely to wall with elevation of conductor head rim 1 inch below scupper discharge.
- E. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints a minimum of 4 inches in direction of water flow.
- F. Splash Pans: Install where downspouts discharge on low-sloped roofs. Set in asphalt roofing cement compatible with roofing membrane.

3.4 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal roof flashing and trim to comply with performance requirements 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.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in FMG Loss Prevention Data Sheet 1-49 for specified wind zone and as indicated.
1. Interlock bottom edge of roof edge flashing with continuous cleats anchored to substrate at 24-inch centers.
- C. Copings: Anchor to resist uplift and outward forces according to recommendations in FMG Loss Prevention Data Sheet 1-49 for specified wind zone and as indicated.
1. Interlock exterior bottom edge of coping with continuous cleats anchored to substrate at 24-inch centers.
 2. Anchor interior leg of coping with screw fasteners and washers at 18-inch centers.
- D. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for butyl sealant, extending a minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.
- E. 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 butyl sealant.
1. Secure in a waterproof manner by means of interlocking folded seam or blind rivets and sealant.
- F. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Install flashing as follows:

1. Turn lead flashing down inside vent piping, being careful not to block vent piping with flashing.
2. Seal with butyl sealant and clamp flashing to pipes penetrating roof except for lead flashing on vent piping.

3.5 WALL FLASHING INSTALLATION

- A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

3.6 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 and sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- D. 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 07620

SECTION 07920
JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes sealants for the following applications, including those specified by reference to this Section:
1. Exterior joints in the following vertical surfaces and nontraffic horizontal surfaces:
 - a. Perimeter joints between materials listed above and frames of doors and windows.
 - b. Other joints as indicated.
 2. Exterior joints in the following horizontal traffic surfaces:
 - a. Control, expansion, and isolation joints in cast-in-place concrete slabs.
 - b. Joints between different materials listed above.
 - c. Other joints as indicated.
 3. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:
 - a. Perimeter joints of exterior openings where indicated.
 - b. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.
 - c. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - d. Other joints as indicated.
 4. Interior joints in the following horizontal traffic surfaces:
 - a. Joints as indicated.
- B. Related Sections include the following:
1. Division 9 Section "Gypsum Board Assemblies" for sealing perimeter joints of gypsum board partitions to reduce sound transmission.

1.2 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Product Certificates: Signed by manufacturers of joint sealants certifying that products furnished comply with requirements and are suitable for the use indicated.
- D. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- E. Product Test Reports: From a qualified testing agency indicating sealants comply with requirements, based on comprehensive testing of current product formulations.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
 - 2. Test elastomeric joint sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.
 - 3. Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
 - 2. When joint substrates are wet.
- B. Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- C. Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products indicated for each type in the sealant schedules at the end of Part 3.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range for this characteristic.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant in the Elastomeric Joint-Sealant Schedule at the end of Part 3, including those referencing ASTM C 920 classifications for type, grade, class, and uses.

2.4 SOLVENT-RELEASE JOINT SEALANTS

- A. Butyl-Rubber-Based Solvent-Release Joint-Sealant Standard: Comply with ASTM C 1085 for each product of this description indicated in the Solvent-Release Joint-Sealant Schedule at the end of Part 3.

2.5 LATEX JOINT SEALANTS

- A. Latex Sealant Standard: Comply with ASTM C 834 for each product of this description indicated in the Latex Joint-Sealant Schedule at the end of Part 3.

2.6 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, of type indicated below and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
 - 1. Type C: Closed-cell material with a surface skin.
 - 2. Type O: Open-cell material. (Not allowed at horizontal joints).
 - 3. Type: Any material indicated above.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.7 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants with joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Porous joint surfaces include the following:
 - a. Concrete.
 - b. Unglazed surfaces of ceramic tile.
 - 3. Remove laitance and form-release agents from concrete.
 - 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
 - a. Metal.
 - b. Glass.
 - c. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates where recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and back of joints.
- E. Install sealants by proven techniques to comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses provided for each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealants from surfaces adjacent to joint.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
 - a. Use masking tape to protect adjacent surfaces of recessed tooled joints.

3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from the original work.

3.6 ELASTOMERIC JOINT-SEALANT SCHEDULE

A. Single-Component Nonsag Urethane Sealant: Where joint sealants of this type are required, provide products complying with the following:

1. Products: Provide one of the following:
 - a. Chem-Calk 900; Bostik Inc.
 - b. Chem-Calk 915; Bostik Inc.
 - c. Chem-Calk 945; Bostik Inc.
 - d. Vulkem 921; Mameco International.
 - e. Dynatrol I; Pecora Corporation.
 - f. Flexiprene 1000; Polymeric Systems, Inc.
 - g. PSI-901; Polymeric Systems, Inc.
 - h. DyMonic; Tremco.
 - i. Or equal.
2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

B. Single-Component Pourable Urethane Sealant: Where joint sealants of this type are required, provide products complying with the following:

1. Products: Provide one of the following:
 - a. Chem-Calk 950; Bostik Inc.
 - b. Vulkem 45; Mameco International.
 - c. Vulkem Nova 300 SSL; Mameco International.
 - d. NR-201; Pecora Corporation.
 - e. Flexiprene PSI-951; Polymeric Systems, Inc.
 - f. SL 1; Sonneborn Building Products Div., ChemRex Inc..
 - g. Or equal.
2. Type and Grade: S (single component) and P (pourable).
3. Class: 25.
4. Use Related to Exposure: T (traffic).
5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

3.7 SOLVENT-RELEASE JOINT-SEALANT SCHEDULE

A. Butyl-Rubber-Based Solvent-Release Sealant: Where joint sealants of this type are required, provide products complying with the following:

1. Products: Provide one of the following:
 - a. Bostik 300; Bostik Inc.

- b. BC-158; Pecora Corporation.
- c. PSI-301; Polymeric Systems, Inc.
- d. Sonneborn Multi-Purpose Sealant; Sonneborn Building Products Div., ChemRex, Inc.
- e. Tremco Butyl Sealant; Tremco.
- f. Or equal.

2. Applications: At thresholds.

3.8 LATEX JOINT-SEALANT SCHEDULE

A. Latex Sealant: Where joint sealants of this type are required, provide products complying with the following:

1. Products: Provide one of the following:

- a. Chem-Calk 600; Bostik Inc.
- b. AC-20; Pecora Corporation.
- c. PSI-701; Polymeric Systems, Inc.
- d. Sonolac; Sonneborn Building Products Div., ChemRex, Inc.
- e. Tremflex 834; Tremco.
- f. Or equal.

2. Applications: Interior conditions.

END OF SECTION 07920

SECTION 08110
STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Steel doors.
2. Steel door frames.
3. Sidelight frames
4. Fire-rated door and frame assemblies.
5. Louvers in doors.

B. Related Sections include the following:

1. Division 8 Section "Door Hardware (Scheduled by Naming Products)" for door hardware and weather stripping.
2. Division 8 Section "Glazing" for glass in glazed openings in doors and frames.
3. Division 9 Section "Gypsum Board Assemblies" for spot-grouting frames installed in steel-framed gypsum board partitions.
4. Division 9 Section "Painting" for field painting factory-primed doors and frames.

1.2 DEFINITIONS

A. Steel Sheet Thicknesses: Thickness dimensions, including those referenced in ANSI A250.8, are minimums as defined in referenced ASTM standards for both uncoated steel sheet and the uncoated base metal of metallic-coated steel sheets.

1.3 SUBMITTALS

A. Product Data: For each type of door and frame indicated, include door designation, type, level and model, material description, core description, construction details, label compliance, sound and fire-resistance ratings, and finishes.

B. Shop Drawings: Show the following:

1. Elevations of each door design.
2. Details of doors including vertical and horizontal edge details.
3. Frame details for each frame type including dimensioned profiles.
4. Details and locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of anchorages, accessories, joints, and connections.
7. Coordination of glazing frames and stops with glass and glazing requirements.

- C. Door Schedule: Use same reference designations indicated on Drawings in preparing schedule for doors and frames.

1.4 QUALITY ASSURANCE

- A. Steel Door and Frame Standard: Comply with ANSI A 250.8, unless more stringent requirements are indicated.
- B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 252.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished doors and frames.
- B. Inspect doors and frames on delivery for damage, and notify shipper and supplier if damage is found. Minor damages may be repaired provided refinished items match new work and are acceptable to Architect. Remove and replace damaged items that cannot be repaired as directed.
- C. Store doors and frames at building site under cover. Place units on minimum 4-inch- high wood blocking. Avoid using nonvented plastic or canvas shelters that could create a humidity chamber. If door packaging becomes wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Steel Doors and Frames:
 - a. Amweld Building Products, Inc.
 - b. Ceco Door Products; a United Dominion Company.
 - c. Copco Door Co.
 - d. Curries Company.
 - e. Kewanee Corporation (The).
 - f. Mesker Door, Inc.
 - g. Pioneer Industries Inc.
 - h. Republic Builders Products.
 - i. Steelcraft; a division of Ingersoll-Rand.
 - j. Or equal.

2.2 MATERIALS

- A. Hot-Rolled Steel Sheets: ASTM A 569/A 569M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- B. Cold-Rolled Steel Sheets: ASTM A 366/A 366M, Commercial Steel (CS), or ASTM A 620/A 620M, Drawing Steel (DS), Type B; stretcher-leveled standard of flatness.

2.3 DOORS

- A. General: Provide doors of sizes, thicknesses, and designs indicated.
- B. Interior Doors: Provide doors complying with requirements indicated below by referencing ANSI 250.8 for level and model and ANSI A250.4 for physical-endurance level:
 - 1. Level 2 and Physical Performance Level B (Heavy Duty), Model 1 (Full Flush).
- C. Door Louvers: Provide louvers for interior doors, where indicated, that comply with SDI 111C, with blades or baffles formed of 0.020-inch- thick, cold-rolled steel sheet set into 0.032-inch- thick steel frame.
 - 1. Sightproof Louvers: Stationary louvers constructed with inverted V-shaped or Y-shaped blades.
- D. Vision Lite Systems: Manufacturer's standard kits consisting of glass lite moldings to accommodate glass thickness and size of vision lite indicated.

2.4 FRAMES

- A. General: Provide steel frames for doors, sidelights, borrowed lights, and other openings that comply with ANSI A250.8 and with details indicated for type and profile. Conceal fastenings, unless otherwise indicated.
- B. Frames of 0.053-inch- thick steel sheet for:
 - 1. Level 2 steel doors.
 - 2. Wood doors.
- C. Door Silencers: Except on weather-stripped frames, fabricate stops to receive three silencers on strike jambs of single-door frames and two silencers on heads of double-door frames.
- D. Plaster Guards: Provide 0.016-inch- thick, steel sheet plaster guards or mortar boxes to close off interior of openings; place at back of hardware cutouts where mortar or other materials might obstruct hardware operation.
- E. Supports and Anchors: Fabricated from not less than 0.042-inch- thick, electrolytic zinc-coated or metallic-coated steel sheet.

- F. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where zinc-coated items are to be built into exterior walls, comply with ASTM A 153, Class C or D as applicable.

2.5 FABRICATION

- A. General: Fabricate steel door and frame units to comply with ANSI A250.8 and to be rigid, neat in appearance, and free from defects including warp and buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site.
- B. Interior Door Faces: Fabricate exposed faces of doors from the following material:
 - 1. Cold-rolled steel sheet.
- C. Core Construction: Manufacturer's standard core construction that produces a door complying with SDI standards.
- D. Clearances for Non-Fire-Rated Doors: Not more than 1/8 inch at jambs and heads, except not more than 1/4 inch between pairs of doors. Not more than 3/4 inch at bottom.
- E. Clearances for Fire-Rated Doors: As required by NFPA 80.
- F. Single-Acting, Door-Edge Profile: Square edge.
- G. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."
- H. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.
- I. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.
- J. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements in ANSI A250.6 and ANSI A115 Series specifications for door and frame preparation for hardware.
- K. Frame Construction: Fabricate frames to shape shown.
 - 1. For interior applications, fabricate knock-down frames with mitered or coped corners, for field assembly.
- L. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.
- M. Locate hardware as indicated on Shop Drawings or, if not indicated, according to ANSI A250.8.

- N. Glazing Stops: Manufacturer's standard, formed from 0.032-inch- thick steel sheet.
 - 1. Provide nonremovable stops on secure side of interior doors for glass in doors and frames.

2.6 FINISHES

- A. Prime Finish: Manufacturer's standard, factory-applied coat of rust-inhibiting primer complying with ANSI A250.10 for acceptance criteria.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.
- B. Placing Frames: Comply with provisions in SDI 105, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.
 - 1. Place frames before construction of enclosing walls and ceilings.
 - 2. In metal-stud partitions, provide at least three wall anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Attach wall anchors to studs with screws.
- C. Door Installation: Comply with ANSI A250.8. Fit hollow-metal doors accurately in frames, within clearances specified in ANSI A250.8. Shim as necessary to comply with SDI 122 and ANSI/DHI A115.1G.
 - 1. Fire-Rated Doors: Install within clearances specified in NFPA 80.

3.2 ADJUSTING AND CLEANING

- A. Prime-Coat Touchup: Immediately after installation, sand smooth any rusted or damaged areas of prime coat and apply touch up of compatible air-drying primer.
- B. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

END OF SECTION 08110

SECTION 08311
ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Ceiling access doors and frames.
- B. Related Sections include the following:
 - 1. Division 9 Section "Gypsum Board Assemblies" for access doors installed in suspended gypsumboard ceiling systems.
 - 2. Division 15 Section "Ductwork and Accessories" for heating and air-conditioning duct access doors.

1.2 SUBMITTALS

- A. Product Data: For each type of door and frame indicated. Include construction details relative to materials, individual components and profiles, finishes, and fire ratings (if required) for access doors and frames.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain doors and frames through one source from a single manufacturer.
- B. Size Variations: Obtain Architect's acceptance of manufacturer's standard-size units, which may vary slightly from sizes indicated.

1.4 COORDINATION

- A. Verification: Determine specific locations and sizes for access doors needed to gain access to concealed equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Access Doors:
 - a. Bar-Co, Inc. Div.; Alfab, Inc.
 - b. Cesco Products.
 - c. Jensen Industries.
 - d. J. L. Industries, Inc.
 - e. Karp Associates, Inc.
 - f. Larsen's Manufacturing Company.
 - g. Milcor Limited Partnership.
 - h. Or equal.

2.2 MATERIALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36.
- B. Cold-Rolled Steel Sheets: ASTM A 366, Commercial Steel (CS), or ASTM A 620, Drawing Steel (DS), Type B; stretcher-leveled standard of flatness; with minimum thickness indicated representing specified nominal thickness according to ASTM A 568. Electrolytic zinc-coated steel sheet, complying with ASTM A 591, Class C coating, may be substituted at fabricator's option.
- C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.
- D. Drywall Beads: Edge trim formed from 0.0299-inch zinc-coated steel sheet formed to receive joint compound and in size to suit thickness of gypsum board.

2.3 PAINT

- A. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with performance requirements in FS TT-P-664; selected for good resistance to normal atmospheric corrosion, compatibility with finish paint systems indicated, and capability to provide a sound foundation for field-applied topcoats despite prolonged exposure.
- B. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.

2.4 ACCESS DOORS AND FRAMES

- A. Flush Access Doors and Trimless Frames: Fabricated from steel sheet.
 1. Locations: Gypsum board wall and ceiling surfaces.
 2. Door: Minimum 0.060-inch- thick sheet metal, set flush with surrounding finish surfaces.
 3. Frame: Minimum 0.060-inch- thick sheet metal with drywall bead.
 4. Hinges: Spring-loaded concealed pin type.
 5. Latch: Screwdriver-operated cam latch.
 6. Lock: Key-operated cylinder lock.

2.5 FABRICATION

- A. General: Provide access door assemblies manufactured as integral units ready for installation.
- B. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- C. Steel Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access panels to types of supports indicated.
 - 1. For trimless frames with drywall bead for installation in gypsum board assembly, provide edge trim for gypsum board securely attached to perimeter of frames.
 - 2. Provide mounting holes in frames to attach frames to metal framing in drywall construction.
- D. Latching Mechanisms: Furnish number required to hold doors in flush, smooth plane when closed.
 - 1. For cylinder lock, furnish two keys per lock and key all locks alike.

2.6 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.

2.7 STEEL FINISHES

- A. Surface Preparation: 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. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
- B. Apply shop primer to uncoated surfaces of metal fabrications. Comply with SSPC-PA 1, "Paint Application Specification No. 1," for shop painting.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Advise installers of other work about specific requirements relating to access door and floor door installation, including sizes of openings to receive access door and frame, as well as locations of supports, inserts, and anchoring devices.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing access doors and frames.
- B. Set frames accurately in position and attach securely to supports with plane of face panels aligned with adjacent finish surfaces.
- C. Install access doors with trimless frames flush with adjacent finish surfaces.

3.3 ADJUSTING AND CLEANING

- A. Adjust doors and hardware after installation for proper operation.
- B. Remove and replace doors and frames that are warped, bowed, or otherwise damaged.

END OF SECTION 08311

SECTION 08345

FRP DOORS AND FRAMES

1.1 Section Includes

- A. Fiberglass Reinforced Polyester (FRP) Flush Doors.
- B. FRP Panels.
- C. Aluminum Door Frames.

1.2 Related Sections

- A. Section 06100 – Rough Carpentry (hardware installation).
- B. Section 07900 – Joint Sealers.
- D. Section 08710 – Door Hardware.
- F. Section 09900 – Field Painting.

1.3 References

- A. Aluminum Association, Inc. (AA).
 - 1. AA 5005-H14 – Sheet Architectural.
 - 2. AA 6061-T6 – Heavy Duty Structures.
 - 3. AA 6063-T5 – Extrusions, Pipe, Architectural.
 - 4. AA DAF-45 – Designation System for Aluminum Finishes.
- B. American Architectural Manufacturers Association (AAMA).
 - 1. AAMA 2603-98 – Pigmented Organic Coatings (Polycron).
 - 2. AAMA 2605-98 – Superior Performing Organic Coatings (Kynar).
 - 3. AAMA 609 – Anodized Architectural Finishes Cleaning and Maintenance.
 - 4. AAMA 610-02 – Painted Architectural Products Cleaning and Maintenance.
 - 5. AAMA 611-98 – Anodized Architectural Standards.
 - 6. AAMA 701 – Pile Weather Strip.
- C. American Society for Testing Materials (ASTM).
 - 1. A 123 – Zinc (Hot-Dip Galvanized) Coatings.
 - 2. C 591-01 – Unfaced Preformed Rigid Cellular Polyisocyanurate.
 - 3. C 728-97 – Insulation Board, Mineral Aggregate.
 - 4. E 330-97 – Structural Load Test.
 - 5. E 1996 – Wind Load Test.
 - 6. E 1886 – Impact Test Procedures (Inclusive of Large Missile Impact).
 - 7. E 1300 – Load Resistance of Glass in Building.

1.4 Testing and Performance Requirements

- A. Structural Test Unit: Minimum size of 3-feet (91.44 cm) by 7-feet (213.36 cm) with 24-inch (60.96 cm) by 34-inch (86.36 cm) vision light shall be evaluated compliant with ASTM E 330 testing method.

B. Test Procedures and Performances:

1. With door closed and locked, test unit in accordance with ASTM E 330 at static air pressure difference of 70.0 pounds per square foot (3.35 kPa) positive pressure and 70.0 pounds per square foot negative pressure with 165.4 miles (264.9 km) per hour wind load.
2. At conclusion of test there shall be no glass breakage, permanent damage to fasteners, hardware parts, support arms or actuating mechanism, nor any other damage that would cause the door to be inoperable.

1.5 Submittals

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's descriptive literature for each type door and frame: include the following information:

1. Fabrication methods.
2. Finishing.
3. Hardware preparation.
4. Accessories.

C. Shop Drawings: Indicate the following:

1. Elevations and details of each door and frame type.
2. Schedule of doors and frames.
3. Conditions at openings with various wall thicknesses and materials.
4. Location and installation requirements for hardware.
5. Thicknesses of materials, joints.
6. Connections and trim.

D. Samples: Two sets of color chips representing specified colors and finishes.

E. Verification Samples:

1. Submit samples of each type, consisting of FRP door corner construction, minimum 6-inch by 6-inch (150 mm) legs.
2. Where color or texture variations are anticipated, such as anodized finishes, include two or more units in each set of samples indicating extreme limits of variations.

F. Hardware Templates: Provide finish hardware mounting details.

G. Manufacturer's Installation Instructions: Printed installation instructions for each product, including product storage requirements.

H. Operations and Maintenance Data: Printed instructions for each product.

1.6 Quality Assurance

- A. Manufacturer Qualifications: Company specializing in manufacturing FRP door and frame systems of the type required for this project, with minimum ten continuous years documented experience.
- B. Product Qualifications: Wind-load test certification conforming to ASTM E 330 on samples of previous products shall be provided for the type of door to be used.
- C. Installer's Qualifications: Workmen skilled in handling FRP door and frame systems of the type required for this project.
- D. Instruction: The manufacturer or his representative will be available for consultation to all parties engaged in the project, including instruction to installation personnel.

1.7 Delivery, Storage and Handling

- A. Deliver doors and frames palleted, wrapped or individually crated. Doors shall be side protected with surrounding grooved 2-inch (50.8 mm) by 4-inch (101.6 mm) wood frame and covered with 275-pound (124.74 kg) test corrugated cardboard.
- B. Inspect delivered doors and frames for damage; unload and store with minimum handling. Repair minor damage if refinished items are equal in all respects to new work; otherwise, remove damaged items and replace with new.
- C. Store products of this section under cover in manufacturer's unopened packaging until installation.
 - 1. Place units on minimum 4-inch (101.6 mm) wood blocking.
 - 2. Avoid non-vented plastic or canvas covers.
 - 3. Remove packaging immediately if packaging becomes wet.
 - 4. Provide 0.25-inch (6.35 mm) air spaces between stacked doors.

1.8 Project Conditions

- A. Field Measurements: Take field measurements of areas to receive aluminum frames; note discrepancies on submitted shop drawings.

1.9 Scheduling

- A. Ensure that all approvals and/or shop drawings are supplied or returned to the manufacturer in time for fabrication without affecting construction progress schedule.
- B. Ensure that templates and/or actual hardware requested by manufacturer are available in time for fabrication without affecting construction progress schedule.

1.10 Warranty

- A. Manufacturer: Ten year warranty against defects in workmanship and materials, including warping, rotting, decaying or bowing.

- B. Installer: Warrant installation procedures and performance for five years against defects due to workmanship and materials handling.

PART 2 – PRODUCTS

2.1 Manufacturers

- A. Acceptable Manufacturer: *Model: Series 200BE* Cline Aluminum Doors, Inc.
112 – 32nd Avenue West, Bradenton, Florida 34205-8907
Telephone: (800) 648-6736, (941) 746-4104; Fax: (941) 746-5153
Website: www.clinedoors.com, Email: inquire@clinedoors.com
- B. Requests for substitution will be considered in accordance with provisions of Section 01600.

2.2 Components

- A. Aluminum Members: Alloy and temper recommended by manufacturer for strength, corrosion resistance, and application of required finish.
- B. FRP Door Composite Components: Minimum 3-ply composite laminated construction to include:
 - 1. Facing: 0.120-inch composite FRP panel (3.18mm) exterior grade, UV-protected fiber reinforced polyester panel on interior and exterior faces. Ultraviolet inhibitors shall be maximum amount formulated within the resin. Exterior and interior FRP panels shall be a Class C Flame Spread: Maximum of 120, and Smoke Developed Rating of 290 or less (ASTM E 84)
 - 2. Surface texture will be pebble embossed with a non-directional pattern.
 - 3. All mylar transporter fabrication film must be removed from FRP face sheets prior to door fabrication.
 - 4. FRP face panels shall be USDA accepted with minimal porosity.
 - 5. Face sheet shall be bonded to core and backup tube from edge to edge of door.
 - 6. FRP face sheets shall be a Class C Flame Spread: Maximum of 120 and Smoke Developed rating of 290 or less (ASTM E 84), for both interior and exterior faces of interior and exterior doors.
 - 7. Core: Organic materials shall be used to form a marine grade honeycomb core with high compression strength of 94.8 psi (ASTM C365), and internal aluminum hardware backup tube.
 - 8. Hardware Backup: The hardware backup tube shall be a minimum 4.25-inches (107.95 mm) in width, 1.375-inches (34.93 mm) in depth with a wall thickness of 0.125-inches (3.18 mm). Contiguous for the full perimeter of the door to allow for all specified and non-specified hardware reinforcement.
 - 9. Hardware Prep: Basic to include mortise lock edge prep or cylindrical lock prep; and pairs prepped for flush bolts, if required.
 - 10. Bonding Agent: Environmentally friendly adhesive with strength buildup of 350 pounds per square inch (24.6 kg/cm²).

11. Perimeter Door Trim: Wall thickness of 0.050-inch (1.25 mm) minimum in 6063-T5 extruded aluminum alloy with special beveled edge cap design and integral weather stripping on lock stile.
12. Replaceable Door Trim: Mechanically fastened to the hardware backup tube, allowing for replacement in the field, if damaged.
13. Trim Finish: To have minimum of a Class I anodized finish.
14. Weather stripping: Replaceable wool pile with nylon fabric, polypropylene backing meeting AAMA 701 standards. Applied weather stripping not acceptable
15. Materials: Only nonferrous, non-rusting members shall be acceptable, including tie rods, screws and reinforcement plates.
16. Regulations: All components and agents to meet EPA standards.

D. Door Louvers:

1. Blades and Frames: 6063-T5 extruded aluminum alloy, 0.062-inch (1.57 mm) minimum thickness. Louver blades shall be inverted “Y” type.
2. Insect Screens: 18-16 mesh, 0.011-inch (0.28 mm) diameter aluminum, set in 6063-T5 extruded aluminum alloy frame, 0.050-inch (1.25 mm) minimum thickness.
3. Louver shall have a minimum of 50-percent free airflow.

E. Aluminum Frames:

1. Frame Components: Extruded channel (tubular) 6063-T5 aluminum alloy, minimum wall thickness 0.125-inch (3.18 mm); cut corners square and joinery shall be mechanical with no exposed fasteners.
2. Profile: Open Back with Applied Stop (OBS),
3. Hinge and Strike Mounting Plates: Extruded aluminum alloy bar stock, 0.1875-inch (4.75 mm) thick mounted in a concealed integral channel with no exposed fasteners.
4. Replaceable Weather stripping: AAMA 701, wool pile with nylon fabric, polypropylene backing, at head and jambs.
5. Door Stop: No screw-on stops acceptable.
6. Frame Finish: Shall be anodized with Class II mechanical finish to match door finish.

2.3 Finish

- A. Finish: High Performance Organic Coating: Kynar/Polyvinylidene Fluoride (PVDF) (AAMA 605.2).
1. Color: Custom color matching Architect’s sample.

2.4 Fabrication

- A. General: Receive hardware if required by manufacturer.

B. FRP Door Construction: Of type, size and design indicated:

1. Minimum Thickness: 1.75-inches (44 mm), 3-ply composite laminate system.
2. Door Size: Sizes shown are nominal; provide standard clearances as follows:
 - a. Hinge and Lock Stiles: 0.125-inch (3.18 mm).
 - b. Between Meeting Stiles: 0.25-inch (6.35 mm).
 - c. At Top Rails: 0.125-inch (3.18 mm).
 - d. Between Door Bottom and Threshold: 0.125-inch (3.18 mm).

C. Aluminum Frames: Of shapes and contours indicated.

1. Corners shall be cut square.
2. Reinforce and secure mechanically.
3. No exposed fasteners.

2.5 Accessories

A. Fasteners: Aluminum, nonmagnetic stainless steel, or other material warranted by manufacturer as non-corrosive and compatible with aluminum components.

1. Do not use exposed fasteners.

B. Brackets and Reinforcements: Manufacturer's high-strength aluminum units where feasible, otherwise, nonferrous stainless steel.

C. Bituminous Coating: Cold-applied asphaltic mastic, compounded for 30-mil (0.76 mm) thickness per coat.

PART 3 – EXECUTION

3.1 Examination

A. Verify that wall surfaces and openings are ready to receive frames and are within tolerances specified in manufacturer's instructions.

B. Verify that frames installed by other trades for installation of doors of this section are in strict accordance with recommendations and approved shop drawings and within tolerances specified in manufacturer's instructions.

3.2 Preparation

A. Perform cutting, fitting, forming, drilling, and grinding of frames as required for project conditions; do not damage sight-exposed finishes.

B. Separate dissimilar metals to prevent electrolytic action between metals.

3.3 Installation

- A. Install doors and frames in accordance with manufacturer's instructions and approved shop drawings; set frames plumb, square, level, and aligned to receive doors.
- B. Anchor frames to adjacent construction in strict accordance with recommendations and approved shop drawings and within tolerances specified in manufacturer's instructions.
 - 1. Seal metal-to-metal joints between framing members using good quality elastomeric sealant.
- C. Where aluminum surfaces contact with metals other than stainless steel, zinc or small areas of white bronze, protect from direct contact by one or more of the following methods.
 - 1. Paint dissimilar metal with one coat of heavy-bodied bituminous paint.
 - 2. Apply good quality elastomeric sealant between aluminum and dissimilar metal.
 - 3. Paint dissimilar metal with one coat of primer and one coat of paint recommended for aluminum surface applications.
 - 4. Use non-absorptive tape or gasket in permanently dry locations.
- D. Hang doors with required clearances as follows:
 - 1. Hinge and Lock Stiles: 0.125 inch (3.18 mm).
 - 2. Between Meeting Stiles: 0.250 inch (6.35 mm).
 - 3. At Top Rails: 0.125 inch (3.18 mm).
 - 4. Between Door Bottom and Threshold: 0.125 inch (3.18 mm).
- E. Adjust doors and hardware to operate properly.
- F. Install glazing in glazing frames.

Note: Delete any of the following paragraphs that do not apply to project; coordinate with RELATED SECTIONS article of PART 1 of this section.
- G. Install hardware for doors of this section.
- H. Installation of door hardware is specified in Section 08710.
- I. Installation of glass is specified in Section 08800.

3.4 Cleaning

- A. Upon completion of installation, thoroughly clean door and frame surfaces in accordance with AAMA 609.
- B. Do not use abrasive, caustic or acid cleaning agents.

3.5 Protection

- A. Protect products of this section from damage caused by subsequent construction until substantial completion.
- B. Repair damaged or defective products to original specified condition in accordance with manufacturer's recommendations.
- C. Replace damaged or defective products that cannot be repaired to Architect's acceptance.

END OF SECTION

SECTION 08520

ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes Commercial Grade aluminum windows of the performance class indicated. Window types required include the following:
 - 1. Horizontal-sliding windows.

1.2 DEFINITIONS

- A. Performance class number, included as part of the window designation system, is the actual design pressure in pounds force per square foot (pascals) used to determine structural test pressure and water test pressure.
 - 1. Structural test pressure, wind load test, is equivalent to 150 percent of the design pressure.
 - 2. Water-leakage-resistance test pressure is equivalent to 15 percent of the design pressure with 2.86 lbf/sq. ft. as a minimum for Commercial Grade windows.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide aluminum windows engineered, fabricated, and installed to withstand normal thermal movement, wind loading, and impact loading without failure, as demonstrated by testing manufacturer's standard window assemblies representing types, grades, classes, and sizes required for Project according to test methods indicated.
- B. Test Criteria: Testing shall be performed by a qualified independent testing agency based on the following criteria:
 - 1. Design wind velocity at Project site is 75 mi./h.
 - 2. Heights of window units above grade have a projected force of 23 psf at 24 feet above grade, for the determination of required loading and test pressures.
 - 3. Test Procedures: Test window units according to ASTM E 283 for air infiltration, ASTM E 547 for water penetration, and ASTM E 330 for structural performance.
- C. Performance Requirements: Testing shall demonstrate compliance with requirements indicated in AAMA 101 for air infiltration, water penetration, and structural performance for type, grade, and performance class of window units required. Where required design pressure exceeds the minimum for the specified window grade, comply with requirements of AAMA 101, Section 3, "Optional Performance Classes," for higher than minimum performance class.

1. Air-Infiltration Rate for Operating Units: Not more than 0.37 cfm/ft. of operable sash joint for an inward test pressure of 1.57 lbf/sq. ft.
2. Air-Infiltration Rate for Fixed Windows: Not more than 0.15 cfm/ft. of area for an inward test pressure of 1.57 lbf/sq. ft.
3. Water Penetration: No water penetration as defined in the test method at an inward test pressure of 15 percent of the design pressure.
4. Structural Performance: No failure or permanent deflection in excess of 0.4 percent of any member's span after removing the imposed load, for a positive (inward) and negative (outward) test pressure of 30 lbf/sq. ft.
5. Forced-Entry Resistance: Comply with Performance Level 10 requirements when tested according to ASTM F 588 and conforming to the requirements of AAMA 1302.
6. Thermal Movements: Provide window units that allow thermal movement resulting from the following maximum change (range) in ambient temperature when engineering, fabricating, and installing aluminum windows to prevent buckling, opening of joints, and overstressing of components, connections, and other detrimental effects. Base engineering calculation on actual surface temperatures of materials due to solar heat gain and nighttime sky heat loss.
 - a. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
7. Energy Compliance: Window assemblies shall comply with State of California Title 24 energy requirements.

1.4 SUBMITTALS

- A. Product Data for each type of window required, including the following:
 1. Construction details and fabrication methods.
 2. Profiles and dimensions of individual components.
 3. Data on hardware, accessories, and finishes.
 4. Information regarding the high-performance organic coating finish being provided.
- B. Samples for Verification: Of specified type of exposed finish required in manufacturer's standard sizes.
- C. Test reports from a qualified independent testing agency indicating that each type, grade, and size of window unit complies with performance requirements indicated.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Check window openings by field measurements before fabrication and show recorded measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Aluminum Windows:
 - a. Alenco Commercial Division.
 - b. Capitol Products Corp.
 - c. Custom Window Company.
 - d. DeSCo Windows.
 - e. EFCO Corporation.
 - f. Graham Architectural Products Corporation.
 - g. Kawneer Windows
 - h. Peerless Products, Inc.
 - i. U.S. Aluminum
 - j. Window Master.
 - k. Or equal.

2.2 MATERIALS

- A. Aluminum Extrusions: Provide frame and sash members from aluminum extrusions of 6063-T5 alloy and temper.
- B. Fasteners: Provide aluminum, nonmagnetic stainless steel, epoxy adhesive, or other materials warranted by manufacturer to be noncorrosive and compatible with aluminum window members, trim, hardware, anchors, and other components of window units.
 - 1. Reinforcement: Where fasteners screw anchor into aluminum less than 0.125-inch-thick, reinforce interior with aluminum or nonmagnetic stainless steel to receive screw threads or provide standard, noncorrosive, pressed-in, splined grommet nuts.
 - 2. Exposed Fasteners: Except where unavoidable for application of hardware, do not use exposed fasteners. For application of hardware, use fasteners that match finish of member or hardware being fastened, as appropriate.
- C. Anchors, Clips, and Window Accessories: Fabricate anchors, clips, and window accessories of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel or iron complying with requirements of ASTM B 633; provide sufficient strength to withstand design pressure indicated.
- D. Compression-Type Glazing Strips and Weatherstripping: Unless otherwise indicated, and at manufacturer's option, provide compressible stripping for glazing and weatherstripping such as molded EPDM or neoprene gaskets complying with ASTM D 2000 Designation 2BC415 to 3BC620, or molded PVC gaskets complying with ASTM D 2287, or molded expanded EPDM or neoprene gaskets complying with ASTM C 509, Grade 4.
- E. Sliding-Type Weatherstripping: Provide woven-pile weatherstripping of friction-resistant, silicone treated wool pile with center fin membrane barrier inserted around the perimeter of the vent to form continuous single plane barrier between panel and frame. Provide on operable sash.

- F. Sealant: For sealants required within fabricated window units, provide type recommended by manufacturer for joint size and movement. Sealant shall remain permanently elastic, nonshrinking, and nonmigrating.

2.3 HARDWARE

- A. General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, or other corrosion-resistant material compatible with aluminum and of sufficient strength to perform the function for which it is intended.
- B. Sliding panels shall be equipped with a positive latching cam-type lever action lock that engages the center mullion. Panels shall not be removable from the outside when in a locked position. Sliding panels shall be provided with rollers that can be adjustable after installation for realignment and ease of operation.

2.4 ACCESSORIES

- A. General: Provide manufacturer's standard accessories that comply with indicated standards and as required for complete and finished installation.

2.5 HORIZONTAL-SLIDING WINDOWS

- A. Window Grade and Class: Comply with requirements of AAMA Grade and Performance Class HS-DW-C20. Window units shall successfully pass operating force and deglazing test performance requirements specified in AAMA 101.
 - 1. Provide window units with sash that can be removed from inside for cleaning.
- B. Hardware: Provide the following operating hardware:
 - 1. Sash Rollers: Nylon rollers.
 - 2. Lock: Cam-action sweep sash lock and keeper at meeting rails.

2.6 FIXED WINDOWS

- A. Window Grade and Class: Comply with requirements of AAMA Grade and Performance Class F-DW-C20.

2.7 FABRICATION

- A. General: Fabricate aluminum window units to comply with indicated standards. Include a complete system for assembly of components and anchorage of window units.
 - 1. Weep Holes: Provide weep holes and internal passages to conduct infiltrating water to exterior.

2. Mullions: Provide mullions and cover plates as shown, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated.
 3. Glazing Stops: Provide screw-applied or snap-on glazing stops, coordinated with glass selection and glazing system indicated. Finish to match window units.
- B. Preglazed Fabrication: Preglaze window units at the factory where possible and practical for applications indicated. Comply with glass and glazing requirements of Division 8 Section "Glazing" of these Specifications and AAMA 101.

2.8 FINISHES

- A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designating finishes.
- B. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.
- C. High-Performance Organic Coating Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's instructions.
1. Fluoropolymer 2-Coat Coating System: Manufacturer's standard 2-coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 605.2.
 2. Color and Gloss: White, semi-gloss, unless indicated otherwise on the Drawings.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect openings before installation. Verify that rough opening is correct and sill plate is level.
1. Metal surfaces shall be dry; clean; free of grease, oil, dirt, rust and corrosion, and welding slag; without sharp edges or offsets at joints.

3.2 INSTALLATION

- A. Comply with manufacturer's specifications and recommendations for installing window units, hardware, operators, and other components of the Work.
- B. Set window units plumb, level, and true to line, without warp or rack of frames or sash. Provide proper support and anchor securely in place.

1. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials by complying with requirements specified under "Dissimilar Materials" Paragraph in appendix to AAMA 101.

C. Set sill members and other members in a bed of sealant to provide weathertight construction. Refer to Division 7 Section "Joint Sealants" for to be installed with window units. Coordinate installation with wall flashings and other components of the Work.

3.3 ADJUSTING

A. Adjust operating sash and hardware to provide a tight fit at contact points and at weatherstripping for smooth operation and a weathertight closure.

3.4 CLEANING

A. Clean aluminum surfaces promptly after installing windows. Exercise care to avoid damage to protective coatings and finishes. Remove excess glazing and sealant compounds, dirt, and other substances. Lubricate hardware and other moving parts.

B. Clean glass of preglazed units promptly after installing windows. Comply with requirements of Division 8 Section "Glazing" for cleaning and maintenance.

3.5 PROTECTION

A. Provide final protection and maintain conditions, in a manner acceptable to Contracting Officer, that ensure window units are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 08520

SECTION 08711
DOOR HARDWARE
(SCHEDULED BY NAMING PRODUCTS)

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Commercial door hardware for the following:
 - a. Swinging doors.
 - b. Other doors to the extent indicated.

B. Related Sections include the following:

1. Division 8 Section "Steel Doors and Frames" for astragals provided as part of a fire-rated labeled assembly and for door silencers provided as part of the frame.
2. Division 8 Section "Access Doors" for access door hardware, including cylinders.

1.2 SUBMITTALS

A. Product Data: Include installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening.
 - a. Description of each electrified door hardware function, including location, sequence of operation, and interface with other building control systems.
 - 1) Sequence of Operation: Include description of component functions that occur in the following situations: authorized person wants to enter; authorized person wants to exit; unauthorized person wants to enter; unauthorized person wants to exit.
3. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede

fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

- C. Keying Schedule: Prepared by or under the supervision of supplier, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.
- D. Product Certificates: Signed by manufacturers of electrified door hardware certifying that products furnished comply with requirements.
 - 1. Certify that door hardware approved for use on types and sizes of labeled fire doors complies with listed fire door assemblies.
- E. Qualification Data: For firms and persons specified in "Quality Assurance" Article.
 - 1. Include lists of completed projects with project names and addresses of architects and owners, and other information specified.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Supplier Qualifications: Door hardware supplier with warehousing facilities in Project's vicinity and who is or employs a qualified Architectural Hardware Consultant, available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
 - 1. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- C. Architectural Hardware Consultant Qualifications: A person who is currently certified by the Door and Hardware Institute as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.
 - 1. Electrified Door Hardware Qualifications: Experienced in providing consulting services for electrified door hardware installations.
- D. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.
- E. Regulatory Requirements: Comply with provisions of the following:
 - 1. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," as follows:

- a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
 - b. Door Closers: Comply with the following maximum opening-force requirements indicated:
 - 1) Interior Hinged Doors: 5 lbf applied perpendicular to door.
 - 2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 - c. Thresholds: Not more than 1/2 inch high. Bevel raised thresholds with a slope of not more than 1:2.
2. NFPA 101: Comply with the following for means of egress doors:
- a. Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
 - b. Door Closers: Not more than 30 lbf to set door in motion and not more than 15 lbf to open door to minimum required width.
 - c. Thresholds: Not more than 1/2 inch high.
- F. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.
1. Test Pressure: Test at atmospheric pressure.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver keys to manufacturer of key control system.
- D. Deliver keys to Owner by registered mail or overnight package service.

1.5 COORDINATION

- A. Coordinate layout and installation of recessed pivots and closers with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 3 Section "Cast-in-Place Concrete."
- B. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop

Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

1.6 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in this Section, door hardware sets indicated in door and frame schedule, and the Door Hardware Schedule at the end of Part 3.
 - 1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturer's products.
 - 2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
- B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Schedule at the end of Part 3. Products are identified by using door hardware designations, as follows:
 - 1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

2.2 HINGES AND PIVOTS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Hinges:
 - a. Hager Companies (HAG).
 - b. Or equal.
 - 2. Pivots and Pivot Hinges:
 - a. Hager Companies (HAG).
 - b. LCN Closers; an Ingersoll-Rand Company (LCN).
 - c. NT Dor-O-Matic Hardware Div.; an Ingersoll-Rand Company (NTD).

d. Or equal.

B. Standards: Comply with the following:

1. Butts and Hinges: BHMA A156.1.
2. Template Hinge Dimensions: BHMA A156.7.
3. Self-Closing Hinges and Pivots: BHMA A156.17.
4. Pivots: BHMA A156.4.

C. Quantity: Provide the following, unless otherwise indicated:

1. Three Hinges: For doors with heights 61 to 90 inches.
2. Four Hinges: For doors with heights 91 to 120 inches.

D. Template Requirements: Provide only template-produced units.

E. Hinge Weight: Unless otherwise indicated, provide the following:

1. Entrance Doors: Heavy-weight hinges.
2. Doors with Closers: Antifriction-bearing hinges.
3. Interior Doors: Standard-weight hinges.

F. Hinge Base Metal: Unless otherwise indicated, provide the following:

1. Exterior Hinges: Stainless steel, with stainless-steel pin.
2. Interior Hinges: Stainless steel, with stainless-steel pin.
3. Hinges for Fire-Rated Assemblies: Stainless steel, with stainless-steel pin.

G. Hinge Options: Comply with the following where indicated in the Door Hardware Schedule or on Drawings:

1. Nonremovable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the following applications:
 - a. Outswinging exterior doors.
 - b. Outswinging corridor doors with locks.

H. Fasteners: Comply with the following:

1. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
2. Screws: Phillips flat-head screws; machine screws (drilled and tapped holes) for metal doors. Finish screw heads to match surface of hinges.

2.3 LOCKS AND LATCHES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Mechanical Locks and Latches:

- a. Adams Rite Manufacturing Co. (ARM).
- b. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
- c. Schlage Lock Company; an Ingersoll-Rand Company (SCH).
- d. Triangle Brass Manufacturing Company, Inc. (TBM).
- e. Or equal.

B. Standards: Comply with the following:

- 1. Mortise Locks and Latches: BHMA A156.13.
- 2. Auxiliary Locks: BHMA A156.5.

C. Mortise Locks: Stamped steel case with steel or brass parts; BHMA Grade 1; Series 1000.

D. Auxiliary Locks: BHMA Grade 1.

E. Certified Products: Provide door hardware listed in the following BHMA directories:

- 1. Mechanical Locks and Latches: BHMA's "Directory of Certified Locks & Latches."

F. Lock Trim: Comply with the following:

- 1. Lever: Forged.

G. Lock Functions: Function numbers and descriptions indicated in the Door Hardware Schedule comply with the following:

- 1. Mortise Locks: BHMA A156.13.

H. Lock Throw: Comply with testing requirements for length of bolts to comply with labeled fire door requirements, and as follows:

- 1. Mortise Locks: Minimum 3/4-inch latchbolt throw.
- 2. Deadbolts: Minimum 1-inch bolt throw.

I. Backset: 2-3/4 inches, unless otherwise indicated.

2.4 DOOR BOLTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Surface Bolts:

- a. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
- b. Triangle Brass Manufacturing Company, Inc. (TBM).
- c. Or equal.

2. Flush Bolts:

- a. Glynn-Johnson; an Ingersoll-Rand Company (GJ).

- b. Triangle Brass Manufacturing Company, Inc. (TBM).
- c. Or equal.

B. Standards: Comply with the following:

- 1. Surface Bolts: BHMA A156.16.
- 2. Automatic and Self-Latching Flush Bolts: BHMA A156.3.
- 3. Manual Flush Bolts: BHMA A156.16.

C. Surface Bolts: BHMA Grade 1.

- 1. Flush Bolt Heads: Minimum of 1/2-inch- diameter rods of brass, bronze, or stainless steel with minimum 12-inch- long rod for doors up to 84 inches in height. Provide longer rods as necessary for doors exceeding 84 inches.

D. Flush Bolts: BHMA Grade 1, designed for mortising into door edge.

E. Bolt Throw: Comply with testing requirements for length of bolts to comply with labeled fire door requirements, and as follows:

- 1. Half-Round Surface Bolts: Minimum 7/8-inch throw.
- 2. Interlocking Surface Bolts: Minimum 15/16-inch throw.
- 3. Fire-Rated Surface Bolts: Minimum 1-inch throw; listed and labeled for fire-rated doors.
- 4. Mortise Flush Bolts: Minimum 3/4-inch throw.

2.5 EXIT DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- 1. Von Duprin; an Ingersoll-Rand Company (VD).
- 2. Or equal.

B. Standard: BHMA A156.3.

- 1. BHMA Grade: Grade 1.

C. Certified Products: Provide exit devices listed in BHMA's "Directory of Certified Exit Devices."

D. Panic Exit Devices: Listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.

E. Fire Exit Devices: Complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252.

F. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.

1. Match design for locksets and latchsets, unless otherwise indicated.

G. Through Bolts: For exit devices and trim on metal doors.

2.6 CYLINDERS AND KEYING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cylinders:

- a. Schlage Lock Company; an Ingersoll-Rand Company (SCH).
- b. No approved equal.

2. Key Control Systems:

- a. Key Control Systems, Inc. (KCS).
- b. Or equal.

B. Standards: Comply with the following:

1. Cylinders: BHMA A156.5.
2. Key Control System: BHMA A156.5.

C. Cylinder Grade: BHMA Grade 1.

D. Cylinders: Manufacturer's standard tumbler type, constructed from brass or bronze, stainless steel, or nickel silver, and complying with the following:

1. Number of Pins: Six.
2. Mortise Type: Threaded cylinders with rings and straight- or clover-type cam.

E. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:

1. Interchangeable Cores: Core insert, removable by use of a special key, and usable with other manufacturers' cylinders.

F. Construction Keying: Comply with the following:

1. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.
2. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.
 - a. Replace construction cores with permanent cores, as directed by Owner.

G. Keying System: Unless otherwise indicated, provide a factory-registered keying system complying with the following requirements:

1. Grand Master Key System: Cylinders are operated by a change key, a master key, and a grand master key.
- H. Keys: Provide nickel-silver keys complying with the following:
1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
 - a. Notation: Information to be furnished by Owner.
 2. Quantity: In addition to one extra blank key for each lock, provide the following:
 - a. Cylinder Change Keys: Three.
 - b. Grand Master Keys: Five.
- I. Key Control System: BHMA Grade 1 system, including key-holding hooks, labels, two sets of key tags with self-locking key holders, key-gathering envelopes, and temporary and permanent markers. Contain system in metal cabinet with baked-enamel finish.
1. Portable Cabinet: Tray for mounting in file cabinet, equipped with key-holding panels, envelopes, and cross-index system.
 2. Capacity: Able to hold keys for 150 percent of the number of locks.

2.7 STRIKES

- A. Standards: Comply with the following:
1. Strikes for Mortise Locks and Latches: BHMA A156.13.
- B. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
- C. Dustproof Strikes: BHMA Grade 1.

2.8 OPERATING TRIM

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Triangle Brass Manufacturing Company, Inc. (TBM).
 2. Or equal.
- B. Standard: Comply with BHMA A156.6.
- C. Materials: Fabricate from stainless steel, unless otherwise indicated.
- D. Push-Pull Design: As specified.

2.9 ACCESSORIES FOR PAIRS OF DOORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Coordinators:
 - a. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
 - b. Or equal.
 - 2. Astragals:
 - a. Zero International, Inc. (ZRO).
 - b. Or equal.
- B. Standards: Comply with the following:
 - 1. Coordinators: BHMA A156.3.
- C. Carry-Open Bars: Provide carry-open bars for inactive leaves of pairs of doors, unless automatic or self-latching bolts are used.

2.10 CLOSERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Surface-Mounted Closers:
 - a. LCN Closers; an Ingersoll-Rand Company (LCN).
 - b. Or equal.
 - 2. Concealed Closers:
 - a. LCN Closers; an Ingersoll-Rand Company (LCN).
 - b. NT Dor-O-Matic Hardware Div.; an Ingersoll-Rand Company (NTD).
 - c. Or equal.
- B. Standards: Comply with the following:
 - 1. Closers: BHMA A156.4.
- C. Surface Closers: BHMA Grade 1.
- D. Concealed Closers: BHMA Grade 1.
- E. Certified Products: Provide door closers listed in BHMA's "Directory of Certified Door Closers."

- F. Flush Floor Plates: Provide finish cover plates for floor closers unless thresholds are indicated. Match door hardware finish, unless otherwise indicated.
- G. Recessed Floor Plates: Provide recessed floor plates with insert of floor finish material for floor closers, unless thresholds are indicated. Provide extended closer spindle to accommodate thickness of floor finish.

2.11 PROTECTIVE TRIM UNITS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Metal Protective Trim Units:
 - a. Triangle Brass Manufacturing Company, Inc. (TBM).
 - b. Or equal.
- B. Standard: Comply with BHMA A156.6.
- C. Materials: Fabricate protection plates from the following:
 - 1. Stainless Steel: 0.050 inch thick; beveled top and 2 sides.
- D. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units consisting of either machine or self-tapping screws.
- E. Furnish protection plates sized 1-1/2 inches less than door width on push side and 1/2 inch less than door width on pull side, by height specified in Door Hardware Schedule.

2.12 STOPS AND HOLDERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
 - 2. LCN Closers; an Ingersoll-Rand Company (LCN).
 - 3. NT Dor-O-Matic Hardware Div.; an Ingersoll-Rand Company (NTD).
 - 4. Triangle Brass Manufacturing Company, Inc. (TBM).
 - 5. Or equal
- B. Standards: Comply with the following:
 - 1. Stops and Bumpers: BHMA A156.16.
 - 2. Mechanical Door Holders: BHMA A156.16.
 - 3. Combination Overhead Holders and Stops: BHMA A156.8.
 - 4. Door Silencers: BHMA A156.16.
- C. Stops and Bumpers: BHMA Grade 1.

- D. Mechanical Door Holders: BHMA Grade 1.
- E. Combination Floor and Wall Stops and Holders: BHMA Grade 1.
- F. Combination Overhead Stops and Holders: BHMA Grade 1.
- G. Floor Stops: For doors, unless wall or other type stops are scheduled or indicated. Do not mount floor stops where they will impede traffic; floor stops must be mounted within 4-inches of the wall.
 - 1. Where floor or wall stops are not appropriate, provide overhead holders.
- H. Silencers for Metal Door Frames: BHMA Grade 1; neoprene or rubber, minimum diameter 1/2 inch; fabricated for drilled-in application to frame.

2.13 DOOR GASKETING

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Door Gasketing:
 - a. Zero International, Inc. (ZRO).
 - b. Or equal.
 - 2. Door Bottoms:
 - a. Zero International, Inc. (ZRO).
 - b. Or equal.
- B. Standard: Comply with BHMA A156.22.
- C. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
 - 1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
 - 2. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
 - 3. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
- D. Air Leakage: Not to exceed 0.50 cfm per foot of crack length for gasketing other than for smoke control, as tested according to ASTM E 283.
- E. Smoke-Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke-control ratings indicated, based on testing according to UL 1784.

1. Provide smoke-labeled gasketing on 20-minute-rated doors and on smoke-labeled doors.
- F. Fire-Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL 10B or NFPA 252.
- G. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- H. Gasketing Materials: Comply with ASTM D 2000 and AAMA 701/702.

2.14 THRESHOLDS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Zero International, Inc. (ZRO).
 2. Or equal.
- B. Standard: Comply with BHMA A156.21.

2.15 MISCELLANEOUS DOOR HARDWARE

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Triangle Brass Manufacturing Company, Inc. (TBM).
 2. Or equal.
- B. Standard: Comply with the following:
1. Auxiliary Hardware: BHMA A156.16.
- C. Auxiliary Hardware: BHMA Grade 1, unless otherwise indicated.

2.16 FABRICATION

- A. Manufacturer's Nameplate: Do not provide manufacturers' products that have manufacturer's name or trade name displayed in a visible location (omit removable nameplates) except in conjunction with required fire-rated labels and as otherwise approved by Architect.
1. Manufacturer's identification will be permitted on rim of lock cylinders only.
- B. Base Metals: Produce door hardware units of base metal, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units

and BHMA A156.18 for finishes. Do not furnish manufacturer's standard materials or forming methods if different from specified standard.

- C. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to commercially recognized industry standards for application intended. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
 - 1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
 - 2. Steel Machine or Wood Screws: For the following fire-rated applications:
 - a. Mortise hinges to doors.
 - b. Strike plates to frames.
 - c. Closers to doors and frames.
 - 3. Steel Through Bolts: For the following fire-rated applications, unless door blocking is provided:
 - a. Surface hinges to doors.
 - b. Closers to doors and frames.
 - c. Surface-mounted exit devices.
 - 4. Spacers or Sex Bolts: For through bolting of hollow metal doors.
 - 5. Fasteners for Wood Doors: Comply with requirements of DHI WDHS.2, "Recommended Fasteners for Wood Doors."

2.17 FINISHES

- A. Standard: Comply with BHMA A156.18.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. BHMA Designations: Comply with base material and finish requirements indicated by the following:
 - 1. BHMA 600: Primed for painting, over steel base metal.
 - 2. BHMA 606: Satin brass, clear coated, over brass base metal.

3. BHMA 626: Satin chromium plated over nickel, over brass or bronze base metal.
4. BHMA 628: Satin aluminum, clear anodized, over aluminum base metal.
5. BHMA 630: Satin stainless steel, over stainless-steel base metal.
6. BHMA 652: Satin chromium plated over nickel, over steel base metal.
7. BHMA 689: Aluminum painted, over any base metal.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Steel Doors and Frames: Comply with DHI A115 series.
 1. Surface-Applied Door Hardware: Drill and tap doors and frames according to SDI 107.

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations; heights shall be in compliance with accessibility requirements of California Building Code, Title 24, Part 2.
 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.

2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Key Control System: Place keys on markers and hooks in key control system cabinet, as determined by final keying schedule.
 - D. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.
 1. Configuration: Provide the least number of power supplies required to adequately serve doors with electrified door hardware.
 - E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 1. Door Closers: Adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.6 DOOR HARDWARE SCHEDULE

- A. Manufacturer's Reference Code:
 1. Hager
 2. Schlage
 3. L.C.N.
 4. Trimco
 5. Zero
 6. Von Duprin
 7. Adams-Rite
 8. Glynn-Johnson

9. Dor-O-Matic

B. Hardware Groups:

HW-1 (Uni-sex Toilet Room Doors)

3 Each	Hinges	BB1279 - 4.5 x 4.5	652	1
1	Privacy Set	L9040-17C	626	2
1	Closer	4041	689	3
1	Kick Plate	K0050 - 10 x 2" LDW	630	4
1	Stop	W1276CCS	630	4
3	Silencers	1229A	Grey	4

HW-2 (Locker Room Doors)

3 Each	Hinges	BB1279 - 4.5 x 4.5	652	1
1	Privacy Set	L9040-17C	626	2
1	Closer	4041	689	3
1	Kick Plate	K0050 - 10 x 2" LDW	630	4
1	Stop	W1276CCS	630	4
3	Silencers	1229A	Grey	4

HW-3 (Exterior Entrance to Addition)

1 Each	Continuous Piano Hinge		630	1
1	Cylinder - Rim	20-022	626	2
1	Lockset	L9080P-17N (see note below)	626	2
1	Closer	P4041EDA	689	3
1	Kick Plate	K0050 - 10 x 2" LDW	630	4
1	Stop	1209	626	4
1	Threshold	Type 3 x 103A - 36" MS&A		5
1	Door Bottom	39A - 36"		5
1 Set	Seal	188WH - H&J		5

Contractor shall provide electric strike and components integral with door installation as required to accommodate installation of electronic door hardware and keypad / lock system to be similar to existing at door 102A. Verify in the field.

HW-4 (LG Store Room from Garage)

3 Each	Hinges	BB1279 - 4.5 x 4.5	652	1
1	Lockset	L9485P-17C - Less indicator	626	2
1	Closer	4041	689	3
1	Kick Plate	K0050 - 10 x 2" LDW	630	4
1	Stop	W1276CCS	630	4
3	Silencers	1229A	Grey	5

HW-5 (Upgrade of Existing Exterior Entrance)

3 Each	Wide-throw hinges	AB7501	630	1
1	Cylinder - Rim	20-022	626	2
1	Lockset	L9080P-17N (see note below)	626	2
1	Closer	P4041EDA	689	3
1	Kick Plate	K0050 - 10 x 2" LDW	630	4
1	Stop	1209	626	4
1	Threshold	Type 3 x 103A - 36" MS&A		5
1	Door Bottom	39A - 36"		5
1 Set	Seal	188WH - H&J		5

Contractor to provide electric strike, similar to existing, as required to work with existing electronic lock system. Reconnect electric keypad / lock system to match existing. Verify in the field.

END OF SECTION 08711

SECTION 08800

GLAZING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
 - 1. Windows.
 - 2. Doors.

1.2 DEFINITIONS

- A. Manufacturer: A firm that produces primary glass or fabricated glass as defined in referenced glazing publications.
- B. Interspace: Space between lites of an insulating-glass unit that contains dehydrated air or a specified gas.
- C. Deterioration of Coated Glass: Defects developed from normal use that are attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in metallic coating.
- D. Deterioration of Insulating Glass: Failure of the hermetic seal under normal use that is attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Glass Design: Glass thicknesses indicated are for detailing only. Determine glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites for

various size openings in nominal thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:

1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:
 - a. Specified Design Wind Loads: Determine design wind loads applicable to Project from basic wind speed indicated in miles per hour at 33 feet above grade, according to ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 6.4.2, "Analytic Procedure," based on mean roof heights above grade indicated on Drawings.
 - b. Probability of Breakage for Vertical Glazing: 8 lites per 1000 for lites set vertically or not more than 15 degrees off vertical and under wind action.
 - 1) Load Duration: 60 seconds or less.
 - c. Maximum Lateral Deflection: For the following types of glass supported on all four edges, provide thickness required that limits center deflection at design wind pressure to 1/50 times the short side length or 1 inch, whichever is less.
 - 1) For insulating glass.
- C. Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
- D. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:
 1. For monolithic-glass lites, properties are based on units with lites 6 mm thick.
 2. For insulating-glass units, properties are based on units with lites 6 mm thick and a nominal 1/2-inch- wide interspace.
 3. Center-of-Glass U-Values: NFRC 100 methodology using LBL-35298 WINDOW 4.1 computer program, expressed as Btu/ sq. ft. x h x deg F.
 4. Center-of-Glass Solar Heat Gain Coefficient: NFRC 200 methodology using LBL-35298 WINDOW 4.1 computer program.
 5. Solar Optical Properties: NFRC 300.

1.4 SUBMITTALS

- A. Product Data: For each glass product and glazing material indicated.
- B. Samples: For the following products, in the form of 12-inch- square Samples for glass.
 1. Each color of tinted float glass.

2. Coated vision glass.
 3. Insulating glass for each designation indicated.
- C. Glazing Schedule: Use same designations indicated on Drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.
- D. Product Certificates: Signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.
- E. Product Test Reports: From a qualified testing agency indicating the following products comply with requirements, based on comprehensive testing of current products:
1. Tinted float glass.
 2. Coated float glass.
 3. Insulating glass.
 4. Glazing gaskets.
- F. SWRI Validation Certificate: For each elastomeric glazing sealant specified to be validated by SWRI's Sealant Validation Program.
- G. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Source Limitations for Clear Glass: Obtain clear float glass from one primary-glass manufacturer.
- C. Source Limitations for Tinted Glass: Obtain tinted, heat-absorbing, and light-reducing float glass from one primary-glass manufacturer for each tint color indicated.
- D. Source Limitations for Coated Glass: Obtain coated glass from one manufacturer for each type of coating and each type and class of float glass indicated.
- E. Source Limitations for Insulating Glass: Obtain insulating-glass units from one manufacturer using the same type of glass and other components for each type of unit indicated.
- F. Source Limitations for Glazing Accessories: Obtain glazing accessories from one source for each product and installation method indicated.
- G. Glass Product Testing: Obtain glass test results for product test reports in "Submittals" Article from a qualified testing agency based on testing glass products.

1. Glass Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.
- H. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.
- I. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201 and ANSI Z97.1.
 1. Subject to compliance with requirements, permanently mark safety glass with certification label of Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.
- J. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
 1. GANA Publications: GANA'S "Glazing Manual".
 2. SIGMA Publications: SIGMA TM-3000, "Vertical Glazing Guidelines."
- K. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the following inspecting and testing agency:
 1. Insulating Glass Certification Council.
 2. Associated Laboratories, Inc.
 3. National Accreditation and Management Institute.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.
- B. For insulating-glass units that will be exposed to substantial altitude changes, comply with insulating-glass manufacturer's written recommendations for venting and sealing to avoid hermetic seal ruptures.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1. Do not install liquid glazing sealants when ambient and substrate temperature conditions are outside limits permitted by glazing sealant manufacturer or below 40 deg F.

1.8 WARRANTY

- A. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Manufacturer's Special Warranty on Coated-Glass Products: Written warranty, made out to Owner and signed by coated-glass manufacturer agreeing to furnish replacements for those coated-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.
 1. Warranty Period: 10 years from date of Substantial Completion.
- C. Manufacturer's Special Warranty on Insulating Glass: Written warranty, made out to Owner and signed by insulating-glass manufacturer agreeing to furnish replacements for insulating-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.
 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PRODUCTS

- A. Products: Subject to compliance with requirements, provide one of the products indicated in schedules at the end of Part 3.

2.2 PRIMARY FLOAT GLASS

- A. Float Glass: ASTM C 1036, Type I (transparent glass, flat), Quality q3 (glazing select); class as indicated in schedules at the end of Part 3.

2.3 HEAT-TREATED FLOAT GLASS

- A. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.
- B. Heat-Treated Float Glass: ASTM C 1048; Type I (transparent glass, flat); Quality q3 (glazing select); class, kind, and condition as indicated in schedules at the end of Part 3.

2.4 COATED FLOAT GLASS

- A. General: Provide coated glass complying with requirements indicated in this Article and in schedules at the end of Part 3.
 - 1. Provide Kind HS (heat-strengthened) coated float glass, except provide Kind FT (fully tempered) products where coated safety glass is indicated.

2.5 WIRED GLASS

- A. Wired Glass: ASTM C 1036, Type II (patterned and wired glass, flat), Class 1 (clear), Quality q8 (glazing); 6.4 mm thick; of form and mesh pattern indicated below:
 - 1. Polished Wired Glass: Form 1 (wired, polished both sides), and as follows:
 - a. Mesh m1 (diamond).

2.6 INSULATING GLASS

- A. Insulating-Glass Units: Preassembled units consisting of sealed lites of glass separated by a dehydrated interspace, and complying with ASTM E 774 for Class CBA units and with requirements specified in this Article and in the Insulating-Glass Schedule at the end of Part 3.
 - 1. Provide Kind HS (heat-strengthened) float glass in place of annealed glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in "Performance Requirements" Article. Provide Kind FT (fully tempered) where safety glass is indicated.
- B. Overall Unit Thickness and Thickness of Each Lite: Dimensions indicated in the Insulating-Glass Schedule at the end of Part 3 are nominal and the overall thicknesses of units are measured perpendicularly from outer surfaces of glass lites at unit's edge.
- C. Sealing System: Dual seal, with primary and secondary sealants as follows:
 - 1. Manufacturer's standard sealants.
- D. Spacer Specifications: Manufacturer's standard spacer material and construction.
- E. Spacer Specifications: Manufacturer's standard spacer material and construction complying with the following requirements; at Contractor's option:
 - 1. Aluminum with black color-anodized finish.
 - 2. Aluminum with powdered metal paint finish in color to match aluminum framing.
 - 3. Stainless steel.
 - 4. Desiccant: Molecular sieve or silica gel, or blend of both.
 - 5. Corner Construction: Manufacturer's standard corner construction.

2.7 ELASTOMERIC GLAZING SEALANTS

- A. General: Provide products of type indicated, complying with the following requirements:
 - 1. Compatibility: Select glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
 - 2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
 - 3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range for this characteristic.
- B. Elastomeric Glazing Sealant Standard: Comply with ASTM C 920 and other requirements appropriate for conditions shown.

2.8 GLAZING TAPES AND GASKETS

- A. Provide as recommended by glazing manufacturer for field or factory glazing of doors, storefront, and windows of types specified, for manufacturer's standard practice.

2.9 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85, plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

2.10 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

- A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.

- B. Grind smooth and polish exposed glass edges.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine framing glazing for compliance with the following:
 - 1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
 - 2. Presence and functioning of weep system.
 - 3. Minimum required face or edge clearances.
 - 4. Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications, and with standard method for storefront, doors and windows of types specified and which are to be factory glazed.
- B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- C. Set glass lites into storefront, door or window frame members with setting blocks, spacers and edge block as recommended by glazing manufacturer and complete glazing installation with gaskets or sealants as standard with storefront, door or window manufacturer.

3.4 PROTECTION AND CLEANING

- A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances

do come into contact with glass, remove them immediately as recommended by glass manufacturer.

- C. Examine glass surfaces adjacent to exterior concrete at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended by glass manufacturer.
- D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents, and vandalism, during construction period.
- E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

3.5 MONOLITHIC FLOAT-GLASS SCHEDULE

- A. Uncoated Clear Float Glass: Where glass as designated is **GT-1**, provide Type I (transparent glass, flat), Class 1 (clear) glass lites complying with the following:
 - 1. Uncoated Clear Fully Tempered Float Glass: Kind FT (fully tempered).
- B. Uncoated Tinted Float Glass: Where glass as designated as **GT-2**, provide Class 2 (tinted, heat-absorbing, and light-reducing) glass lites complying with the following; in tint color to be selected from Manufacturer's Standards:
 - 1. Uncoated Tinted Fully Tempered Float Glass: Condition A (uncoated surfaces), Kind FT (fully tempered).

3.6 INSULATING-GLASS SCHEDULE

- A. Low-E Insulating glass **GT-3**: Where glass of this designation is indicated, provide low-emissivity insulating-glass units complying with the following:
 - 1. Overall Unit Thickness and Thickness of Each Lite: Minimum 1-inch overall thickness, with 1/4-inch thickness of each lite.
 - 2. Interspace Content: Air or argon.
 - 3. Indoor Lite: Type I (transparent glass, flat), Class 1 (clear) float glass.
 - a. Kind HS (heat strengthened, condition C (other coated glass).
 - b. Low-Emissivity Coating: Pyrolitic on third surface.
 - 4. Outdoor Lite: Type I (transparent glass, flat) float glass.
 - a. Class 2 (tinted, heat absorbing, and light reducing).
 - 1) Tint Color: As indicated on Drawings.
 - b. Kind HS (heat strengthened), Condition A (uncoated surfaces).

5. U-Value: Meet or exceed 0.31 winter nighttime, 0.33 summer daytime.
 6. Solar Heat Gain: Meet or exceed 0.32.
 7. Shading Coefficient: Meet or exceed 0.38.
- B. Low-E Insulating Glass **GT-4**: Where glass of this designation is indicated, provide low-emissivity insulating-glass units complying with the following:
1. Overall Unit Thickness and Thickness of Each Lite: Minimum 1-inch overall thickness with 1/4-inch thickness of each lite.
 2. Interspace Content: Air or argon.
 3. Indoor Lite: Type I (transparent glass, flat), Class 1 (clear) float glass.
 - a. Kind FT (fully tempered), Condition C (other coated surfaces).
 - b. Low-Emissivity Coating: Pyrolytic on third surface.
 4. Outdoor Lite: Type I (transparent glass, flat) float glass.
 - a. Class 2 (tinted, heat absorbing, and light reducing).
 - 1) Tint color: As indicated on drawings.
 - b. Kind FT (fully tempered), Condition A (uncoated surfaces).
 5. U-Value: Meet or exceed 0.31 winter nighttime, 0.33 summer daytime.
 6. Solar heat gain: Meet or exceed: 0.32.
 7. Shading coefficient: Meet or exceed 0.38.

END OF SECTION 08800

SECTION 09220
PORTLAND CEMENT PLASTER

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Metal lath and accessories.
 - 2. Plastic accessories.
 - 3. Portland cement plaster.
 - 4. Stucco finishes.

- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 5 Section "Cold-Formed Metal Framing" for load-bearing steel studs and joists.
 - 2. Division 9 Section "Gypsum Sheathing" for gypsum sheathing installed behind metal lath.

1.2 SUBMITTALS

- A. Product Data for each product specified, including installation and cleanup instructions.

- B. Samples for verification in units at least 12 inches square of each type of finish indicated; in sets for each color, texture, and pattern specified, showing the full range of variations expected in these characteristics.

- C. Material Certificates: Submit certificate signed by manufacturer for each kind of plaster aggregate certifying that materials comply with requirements.

1.3 QUALITY ASSURANCE

- A. Mockup: Prior to installing plaster work, construct panels for each type of finish and application required to verify selections made under Sample submittals and to demonstrate aesthetic effects as well as qualities of materials and execution. Build mockup to comply with the following requirements, using materials indicated for final unit of Work.
 - 1. Locate mockup on-site in the location and of the size indicated or, if not indicated, as directed by Engineer.
 - 2. Erect mockup 48 by 48 inches by full thickness using materials, including lath, support system, and control joints, indicated for final Work.

3. Notify Engineer 7 days in advance of the dates and times when mockup will be constructed.
4. Demonstrate the proposed range of aesthetic effects and workmanship.
5. Obtain Engineer's approval of mockup before start of plaster Work.
6. Retain and maintain mockup during construction in an undisturbed condition as a standard for judging the completed portland cement plaster Work.
 - a. When directed, remove mockups from Project site.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver cementitious materials to Project site in original packages, containers, or bundles, labeled with manufacturer's name, product brand name, and lot number.
- B. Store materials inside, under cover, and dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes.

1.5 PROJECT CONDITIONS

- A. Environmental Requirements, General: Comply with requirements of referenced plaster application standards and recommendations of plaster manufacturer for environmental conditions before, during, and after plaster application.
- B. Cold-Weather Requirements: Provide heat and protection, temporary or permanent, as required to protect each coat of plaster from freezing for at least 24 hours after application. Distribute heat uniformly to prevent concentration of heat on plaster near heat sources; provide deflection or protective screens.
- C. Warm-Weather Requirements: Protect plaster against uneven and excessive evaporation and from strong flows of dry air, both natural and artificial. Apply and cure plaster as required by climatic and job conditions to prevent dry out during cure period. Provide suitable coverings, moist curing, barriers to deflect sunlight and wind, or combinations of these, as required.
- D. Exterior Plaster Work: Do not apply plaster when ambient temperature is below 40 deg F.
- E. Interior Plaster Work: Maintain at least 50 deg F temperature in areas to be plastered for at least 48 hours before, during, and after application.
- F. Ventilation: Provide natural or mechanical means of ventilation to properly dry interior spaces after portland cement plaster has cured.
- G. Protect contiguous work from soiling and moisture deterioration caused by plastering. Provide temporary covering and other provisions necessary to minimize harmful spattering of plaster on other work.

PART 2 - PRODUCTS

2.1 LATH

- A. Expanded-Metal Lath: Comply with ASTM C 847 for material, type, configuration, and other characteristics indicated below.
 - 1. Material: Fabricate expanded-metal lath from sheet metal conforming to the following:
 - a. Galvanized Steel: Structural-quality, zinc-coated (galvanized) steel sheet complying with ASTM A 653, G60 minimum coating designation, unless otherwise indicated.
 - 2. Diamond-Mesh Lath: Comply with the following requirements:
 - a. Configuration: Self-furring.
 - 1) Weight: 3.4 lb/sq. yd..
 - 3. Rib Lath: Comply with the following requirements:
 - a. Configuration: Rib depth of 3/8-inch.
 - 1) Weight: 3.4 lb/sq. yd..

2.2 ACCESSORIES

- A. General: Comply with material provisions of ASTM C 1063 and the requirements indicated below; coordinate depth of accessories with thicknesses and number of plaster coats required.
 - 1. Aluminum Components: Alloy, temper, and finish recommended by manufacturer with not less than the strength and durability properties of aluminum extrusions complying with ASTM B 221 for alloy and temper 6063-T5.
 - 2. Galvanized Steel Components: Fabricated from zinc-coated (galvanized) steel sheet complying with ASTM A 653, G40 minimum coating designation.
 - 3. Zinc-Alloy Components: ASTM B 69, 99 percent pure zinc.
 - 4. Plastic Components: ASTM D 4216, high-impact polyvinyl chloride (PVC) for building products.
- B. Metal Corner Reinforcement: Expanded, large-mesh, diamond-metal lath fabricated from zinc-alloy or welded-wire mesh fabricated from 0.0475-inch-diameter, zinc-coated (galvanized) wire and specially formed to reinforce external corners of portland cement plaster on exterior exposures while allowing full plaster encasement.
- C. Cornerbeads: Small nose cornerbeads fabricated from the following metal, with expanded flanges of large-mesh diamond-metal lath allowing full plaster encasement.

1. Zinc Alloy: Minimum 0.0207-inch thick.
2. PVC Plastic: Minimum 0.035-inch thick.
3. Galvanized Steel: Minimum 0.0172-inch thick.
4. Aluminum: Minimum 0.050-inch thick.
5. Material: Any material above.

D. Casing Beads: Square-edged style, with expanded flanges of the following material:

1. Zinc Alloy: Minimum 0.0207-inch thick.
2. PVC Plastic: Minimum 0.035-inch thick.
3. Galvanized Steel: Minimum 0.0172-inch thick.
4. Aluminum: Minimum 0.050-inch thick.
5. Material: Any material above.

E. Curved Casing Beads: Square-edged style, fabricated from aluminum coated with clear plastic, preformed into curve of radius indicated.

F. Control Joints: Prefabricated, of material and type indicated below:

1. Zinc Alloy: Minimum 0.0207-inch thick.
2. PVC Plastic: Minimum 0.035-inch thick.
3. Galvanized Steel: Minimum 0.0172-inch thick.
4. Material: Any material above.
5. One-Piece: Folded pair of nonperforated screeds in M-shaped configuration, with expanded or perforated flanges.

a. Provide removable protective tape on plaster face of control joints.

G. Foundation Sill (Weep) Screed: Manufacturer's standard profile designed for use at sill plate line to form plaster stop and prevent plaster from contacting damp earth, fabricated from zinc-coated (galvanized) steel sheet.

H. Lath Attachment Devices: Material and type required by ASTM C 1063 for installations indicated.

I. Channel Screeds and Vented Channel Screed: Aluminum, minimum 0.050-inch thick.

2.3 PLASTER MATERIALS

A. Base-Coat Cements: Type as indicated below:

1. Portland cement, ASTM C 150, Type I.

B. Stucco Finish Coat: Manufacturer's standard factory-packaged stucco, including portland cement, aggregate, coloring agent, and other proprietary ingredients.

C. Factory-Prepared Plaster Finish Coat: Manufacturer's standard factory-packaged blend of portland cement, ASTM C 150, Type I or III; hydrated lime, Type S, ASTM C 206 or ASTM C 207; aggregate, ASTM C 897; and compatible with base coat and finish texture indicated; in color indicated below:

1. White.
- D. Lime: Special hydrated lime for finishing purposes, ASTM C 206, Type S; or special hydrated lime for masonry purposes, ASTM C 207, Type S.
- E. Sand Aggregate for Base Coats: ASTM C 897.

2.4 MISCELLANEOUS MATERIALS

- A. Water for Mixing and Finishing Plaster: Potable.
- B. Asphalt-Saturated Felt: ASTM D 226, Type I (No. 15), nonperforated.
- C. Steel drill screws complying with ASTM C 954 for fastening metal lath to steel members 0.033 to 0.112-inch thick.
- D. Exterior Styrofoam Moldings: Provide shapes indicated on drawings at exterior face of stucco as manufactured by Pacific Coast Foam.

2.5 PLASTER MIXES AND COMPOSITIONS

- A. General: Comply with ASTM C 926 for base- and finish-coat mixes as applicable to plaster bases, materials, and other requirements indicated.
- B. Base-Coat Mixes and Compositions: Proportion materials for respective base coats in parts by volume per sum of cementitious materials for aggregates to comply with the following requirements for each method of application and plaster base indicated. Adjust mix proportions below within limits specified to attain workability.
- C. Three-Coat Work over Metal Lath: Base-coat proportions as indicated below:
 1. Scratch Coat: 1 part portland cement, 0 to 3/4 parts lime, 2-1/2 to 4 parts aggregate.
 2. Brown Coat: 1 part portland cement, 0 to 3/4 parts lime, 3 to 5 parts aggregate.
- D. Factory-Prepared Plaster Finish Coats: Add water only; comply with finish coat manufacturer's written instructions.
- E. Stucco Finish Coat: Add water only; comply with stucco manufacturer's written instructions.

2.6 MIXING

- A. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standard and with recommendations of plaster manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION OF LATH, GENERAL

- A. Standards: Comply with ML/SFA 920, "Guide Specifications for Metal Lathing and Furring," and with requirements of ASTM C 1063.
- B. Install supplementary framing, blocking, and bracing at terminations in work and for support of fixtures, equipment services, heavy trim, handrails, and similar work to comply with details indicated or, if not otherwise indicated, to comply with applicable written instructions of lath manufacturer.
- C. Isolation: Where lathing and metal support system abuts building structure horizontally and where partition or wall abuts overhead structure, sufficiently isolate from structural movement to prevent transfer of loading from building structure. Install slip- or cushion-type joints to absorb deflections but maintain lateral support.
 - 1. Frame both sides of control joints independently and do not bridge joints with furring and lathing or accessories.
- D. Install additional framing, furring, runners, lath, and beads, as required to form openings and frames for other work as indicated. Coordinate support system for proper support of framed work that is not indicated to be supported independently of metal furring and lathing system.

3.2 LATHING

- A. Install metal lath for the following applications where plaster base coats are required. Provide appropriate type, configuration, and weight of metal lath selected from materials indicated that comply with referenced ML/SFA specifications and ASTM lathing installation standards.
 - 1. Suspended and furred ceilings using 3.4-lb/sq. yd. minimum weight, diamond-mesh lath.
 - 2. Vertical metal framing and furring using 3.4-lb/sq. yd. minimum weight, diamond-mesh lath and cold-rolled channel stud framing.
 - 3. Exterior sheathed wall surfaces using 3.4-lb/sq. yd. minimum weight, self-furring, diamond-mesh lath.

3.3 PREPARATIONS FOR PLASTERING

- A. Clean plaster bases and substrates for direct application of plaster, removing loose material and substances that may impair the Work.
- B. Install temporary grounds and screeds to ensure accurate rodding of plaster to true surfaces; coordinate with scratch-coat work.
- C. Flashing: Refer to Division 7 Sections for installing flashing as indicated.

3.4 INSTALLATION OF PLASTERING ACCESSORIES

- A. General: Comply with referenced lathing and furring installation standards for provision and location of plaster accessories of type indicated. Miter or cope accessories at corners; install with tight joints and in alignment. Attach accessories securely to plaster bases to hold accessories in place and in alignment during plastering. Install accessories of type indicated at following locations:
1. External Corners: Install corner reinforcement at external corners.
 2. Terminations of Plaster: Install casing beads, unless otherwise indicated.
 3. Control Joints: Install at locations indicated or, if not indicated, at locations complying with the following criteria and approved by Contracting Officer:
 - a. Where an expansion or contraction joint occurs in surface of construction directly behind plaster membrane.
 - b. Distance between Control Joints: Not to exceed 18 feet in either direction or a length-to-width ratio of 2-1/2 to 1.
 - c. Wall Areas: Not more than 144 sq. ft..
 - d. Horizontal Surfaces: Not more than 100 sq. ft. in area.
 - e. Where plaster panel sizes or dimensions change, extend joints full width or height of plaster membrane.
 4. Foam Moldings: Install over brown coat with fastenings and methods approved by molding.

3.5 PLASTER APPLICATION

- A. Plaster Application Standard: Apply plaster materials, composition, and mixes to comply with ASTM C 926.
- B. Do not use materials that are frozen, caked, lumpy, dirty, or contaminated by foreign materials.
- C. Do not use excessive water in mixing and applying plaster materials.
- D. Flat Surface Tolerances: Do not deviate more than plus or minus 1/8-inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed at any location on surface.
- E. Grout hollow-metal frames, bases, and similar work occurring in plastered areas, with base-coat plaster material, and before lathing where necessary. Except where full grouting is indicated or required for fire-resistance rating, grout at least 6 inches at each jamb anchor.
- F. Sequence plaster application with installation and protection of other work so that neither will be damaged by installation of other.
- G. Corners: Make internal corners and angles square; finish external corners flush with cornerbeads on interior work, square and true with plaster faces on exterior work.
- H. Number of Coats: Apply plaster of composition indicated, to comply with the following requirements:

1. Three Coats: Over the following plaster base:

a. Metal lath.

I. Finish Coats: Apply finish coats to comply with the following requirements:

1. Float Finish: At interior areas, apply finish coat to a minimum thickness of 1/8-inch to completely cover base coat, uniformly floated to a true even plane with fine-textured finish.
2. Prepared Finish: Apply stucco finish coats, according to manufacturer's written instructions. Stucco finish shall be trowel-applied sand pebble texture.

J. Moist-cure plaster base and finish coats to comply with ASTM C 926, including written instructions for time between coats and curing in "Annex A2 Design Considerations."

3.6 CUTTING AND PATCHING

A. Cut, patch, replace, repair, and point up plaster as necessary to accommodate other work. Repair cracks and indented surfaces. Point-up finish plaster surfaces around items that are built into or penetrate plaster surfaces. Repair or replace work to eliminate blisters, buckles, check cracking, dry outs, efflorescence, excessive pinholes, and similar defects. Repair or replace work as necessary to comply with required visual effects.

3.7 CLEANING AND PROTECTING

- A. Remove temporary covering and other provisions made to minimize spattering of plaster on other work. Promptly remove plaster from door frames, windows, and other surfaces not to be plastered. Repair surfaces stained, marred or otherwise damaged during plastering work. When plastering work is completed, remove unused materials, containers, equipment, and plaster debris.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Engineer, that ensure plaster work is without damage or deterioration at the time of Substantial Completion.

END OF SECTION 09220

SECTION 09260
GYPSON BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Interior gypsum wallboard.
 - 2. Tile backing panels.

1.2 DEFINITIONS

- A. Gypsum Board Terminology: Refer to ASTM C 11 for definitions of terms for gypsum board assemblies not defined in this Section or in other referenced standards.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.
- B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Gypsum Board and Related Products:
 - a. American Gypsum Co.
 - b. National Gypsum Company.
 - c. United States Gypsum Co.
 - d. Or equal.

2.2 INTERIOR GYPSUM WALLBOARD

- A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.
- B. Gypsum Wallboard: ASTM C 36.
 - 1. Type X:
 - a. Thickness: 5/8 inch unless otherwise noted.
 - b. Long Edges: Tapered.
 - c. Location: Use for all locations.

2.3 TILE BACKING PANELS

- A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.
- B. Water-Resistant Gypsum Backing Board: ASTM C 630.
 - 1. Core: 5/8 inch, Type X.
- C. Cementitious Backer Units: ANSI A118.9.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Custom Building Products; Wonderboard.
 - b. FinPan, Inc.; Util-A-Crete Concrete Backer Board.
 - c. United States Gypsum Co.; DUROCK Cement Board.
 - d. Or equal.
 - 2. Thickness: 1/2 inch.

2.4 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: Use at outside corners.
 - b. LC-Bead (J-Bead): Use at exposed panel edges.
 - c. L-Bead: Use where required.
 - d. U-Bead: Use where required.

B. Aluminum Trim: Extruded accessories and column covers of profiles and dimensions indicated.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Fry Reglet Corp.
 - b. Gordon, Inc.
 - c. MM Systems Corporation.
 - d. Pittcon Industries.
 - e. Or equal.
2. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221, alloy 6063-T5.
3. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.

2.5 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475.

B. Joint Tape:

1. Interior Gypsum Wallboard: Paper.
2. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Wallboard: 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 drying-type, all-purpose compound.
3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

D. Joint Compound for Tile Backing Panels:

1. Water-Resistant Gypsum Backing Board: Use setting-type taping and setting-type, sandable topping compounds.
2. Cementitious Backer Units: As recommended by manufacturer.

2.6 ACOUSTICAL SEALANT

- A. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining, latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

2.7 AUXILIARY MATERIALS

- 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. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- C. Isolation Strip at Exterior Walls:
1. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.
 2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.
- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Gypsum Board Application and Finishing Standards: ASTM C 840 and GA-216.
- B. Install sound attenuation blankets before installing gypsum panels, unless blankets are readily installed after panels have been installed on one side.
- C. Install ceiling board panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- D. Install gypsum 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.
- E. 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.
- F. Attach gypsum panels to steel studs so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- G. Attach gypsum panels to framing provided at openings and cutouts.
- H. Cover both faces of steel stud partition 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 or fire 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.
- I. Sound Assemblies: Where shown on drawings, seal construction at perimeters and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through gypsum board assemblies, including sealing partitions above acoustical ceilings.
- J. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's written recommendations.
- K. Space fasteners in panels that are tile substrates a maximum of 8 inches o.c.

3.3 PANEL APPLICATION METHODS

- A. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.

2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of board.
 - b. At high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
- B. Single-Layer Fastening Methods: Apply gypsum panels to supports with steel drill screws.
- C. Tile Backing Panels:
 1. Water-Resistant Gypsum Backing Board: Install where indicated. Install with 1/4-inch gap where panels abut other construction or penetrations.
 2. Cementitious Backer Units: ANSI A108.11, where indicated.

3.4 INSTALLING 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.

3.5 FINISHING GYPSUM BOARD ASSEMBLIES

- 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. Prefill open joints and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below, according to ASTM C 840, for locations indicated:
 1. Level 1: Embed tape at joints in ceiling plenum areas and concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies.
 2. Level 2: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges where panels are substrate for tile.
 3. Level 4: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges at panel surfaces that will be exposed to view, unless otherwise indicated.
 4. Level 5: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges, and apply skim coat of joint compound over entire surface at areas indicated to receive semi-gloss paint finish.

- E. Cementitious Backer Units: Finish according to manufacturer's written instructions.

END OF SECTION 09260

SECTION 09310

CERAMIC TILE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Ceramic mosaic tile.

B. Related Sections include the following:

1. Division 3 Section "Cast-in-Place Concrete" for monolithic slab finishes specified for tile substrates.
2. Division 7 Section "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.
3. Division 9 Section "Gypsum Board Assemblies" for cementitious backer units installed in gypsum wallboard assemblies.

1.2 PERFORMANCE REQUIREMENTS

A. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ASTM C 1028:

1. Level Surfaces: Minimum 0.6 when dry, minimum 0.8 when wet.

1.3 SUBMITTALS

A. Product Data: For each type of tile, mortar, grout, and other products specified.

B. Samples for Verification: Of each item listed below, prepared on Samples of size and construction indicated. Where products involve normal color and texture variations, include Sample sets showing the full range of variations expected.

1. Each type and composition of tile and for each color and texture required, at least 12 inches square, mounted on braced cementitious backer units, and with grouted joints using product complying with specified requirements and approved for completed work in color or colors selected by Architect.

C. Product Certificates: Signed by manufacturers certifying that the products furnished comply with requirements.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who has completed tile installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Source Limitations for Tile: Obtain each color, grade, finish, type, composition, and variety of tile from one source with resources to provide products from the same production run for each contiguous area of consistent quality in appearance and physical properties without delaying the Work.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement of ANSI A137.1 for labeling sealed tile packages.
- B. Prevent damage or contamination to materials by water, foreign matter, and other causes.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is completed and ambient temperature and humidity conditions are being maintained to comply with referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 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:
 - 1. Tile Products:
 - a. American Olean Tile Company.
 - b. Dal-Tile Corporation.
 - c. Or equal
 - 2. Tile-Setting and -Grouting Materials:
 - a. American Olean Tile Company.
 - b. Bonsal: W.R. Bonsal Company.
 - c. Bostik.
 - d. Custom Building Products.
 - e. Dal-Tile Corporation.
 - f. Laticrete International, Inc.
 - g. Mapei Corporation.
 - h. Or equal.

2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
 - 1. Provide tile complying with Standard Grade requirements, unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting Materials" and "Grouting Materials" articles.
- C. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:
 - 1. Match colors, textures, and patterns indicated on Drawings.
 - 2. Provide tile trim and accessories that match color and finish of adjoining flat tile.
- D. Factory Blending: For tile exhibiting color variations within the ranges selected during Sample submittals, blend tile in the factory and package so tile units taken from one package show the same range in colors as those taken from other packages and match approved Samples.
- E. Mounting: Where factory-mounted tile is required, provide back- or edge-mounted tile assemblies as standard with manufacturer, unless another mounting method is indicated.

2.3 TILE PRODUCTS

- A. Unglazed Ceramic Mosaic Tile: Provide factory-mounted flat tile complying with the following requirements:
 - 1. Composition: Porcelain with abrasive admixture.
 - 2. Module Size: 2 by 2 inches.
 - 3. Nominal Thickness: 1/4 inch.
 - 4. Face: Plain with cushion edges.
- B. Glazed Ceramic Mosaic Tile: Provide factory-mounted flat tile complying with the following requirements:
 - 1. Composition: Porcelain.
 - 2. Module Size: 2 by 2 inches.
 - 3. Thickness: 1/4 inch.
 - 4. Face: Plain with cushion edges.
- C. Trim Units: Provide tile trim units to match characteristics of adjoining flat tile and to comply with the following requirements:

1. Size: As indicated, coordinated with sizes and coursing of adjoining flat tile where applicable.
2. Shapes: As follows, selected from manufacturer's standard shapes:
 - a. Base for Thin-Set Mortar Installations: Straight.
 - b. Wainscot Cap for Thin-Set Mortar Installations: Surface bullnose.
 - c. External Corners for Thin-Set Mortar Installations: Surface bullnose.
 - d. Internal Corners: Field-buttet square corners, except with coved base and cap angle pieces designed to member with stretcher shapes.

D. Accessories for Glazed Wall Tile: Provide vitreous china accessories of type and size indicated and in color and finish to match adjoining glazed wall tile.

1. One soap holder for each shower.

2.4 SETTING MATERIALS

A. Portland Cement Mortar Installation Materials: Provide materials complying with ANSI A108.1A and as specified below:

1. Reinforcing Wire Fabric: Galvanized, welded wire fabric, 2 by 2 inches by 0.062-inch diameter; comply with ASTM A 185 and ASTM A 82, except for minimum wire size.

B. Dry-Set Portland Cement Mortar: ANSI A118.1.

2.5 GROUTING MATERIALS

A. Dry-Set Grout: ANSI A118.6, color as indicated.

2.6 ELASTOMERIC SEALANTS

A. General: Provide manufacturer's standard chemically curing, elastomeric sealants of base polymer and characteristics indicated that comply with applicable requirements of Division 7 Section "Joint Sealants."

B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints, unless otherwise indicated.

2.7 MISCELLANEOUS MATERIALS

A. Shower Pan Materials: Latex-rubber waterproofing, manufacturer's standard factory-packaged, job-mixed, 2-part formulation consisting of liquid latex rubber and powder for trowel application and glass-fiber fabric reinforcing.

- B. Trowelable Underlayments and Patching Compounds. Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- C. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

2.8 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
 - 1. Verify that substrates for setting tile are firm; dry; clean; free from oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 series of tile installation standards for installations indicated.
 - 2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.
 - 3. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust latter in consultation with Architect.
- B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove coatings, including curing compounds, and other substances that contain soap, wax, oil, or silicone and are incompatible with tile-setting materials by using a terrazzo or concrete grinder, a drum sander, or a polishing machine equipped with a heavy-duty wire brush.

- B. Provide concrete substrates for tile floors installed with dry-set or latex-portland cement mortars that comply with flatness tolerances specified in referenced ANSI A108 series of tile installation standards for installations indicated.
 - 1. Use trowelable leveling and patching compounds per tile-setting material manufacturer's written instructions to fill cracks, holes, and depressions.
 - 2. Remove protrusions, bumps, and ridges by sanding or grinding.
- C. Blending: For tile exhibiting color variations within the ranges selected during Sample submittals, verify that tile has been blended in the factory and packaged so tile units taken from one package show the same range in colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 INSTALLATION, GENERAL

- A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 series of tile installation standards in "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.
- B. TCA Installation Guidelines: TCA's "Handbook for Ceramic Tile Installation." Comply with TCA installation methods indicated in ceramic tile installation schedules.
- C. Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions, unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- E. Jointing Pattern: Lay tile in grid pattern, unless otherwise indicated. Align joints when adjoining tiles on floor, base, walls, and trim are the same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets the same width as joints within tile sheets so joints between sheets are not apparent in finished work.
- F. Lay out tile wainscots to next full tile beyond dimensions indicated.
- G. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where required during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Locate joints in tile surfaces directly above joints in concrete substrates.
 - 2. Prepare joints and apply sealants to comply with requirements of Division 7 Section "Joint Sealants."

- H. Grout tile to comply with the requirements of the following tile installation standards:
 - 1. For ceramic tile grouts (dry-set, commercial portland cement), comply with ANSI A108.10.

3.4 SHOWER PAN INSTALLATION

- A. Install shower pan membrane to comply with manufacturer's written instructions to produce a waterproof membrane of uniform thickness bonded securely to substrate.
- B. Do not install tile over shower pan membrane until membrane has cured and been tested to determine that it is watertight.

3.5 FLOOR TILE INSTALLATION

- A. General: Install tile to comply with requirements in the Ceramic Tile Floor Installation Schedule, including those referencing TCA installation methods and ANSI A108 series of tile installation standards.
- B. Joint Widths: Install tile on floors with the following joint widths:
 - 1. Ceramic Mosaic Tile: 1/16 inch.
- C. Back Buttering: For installations indicated, obtain 100 percent mortar coverage by complying with applicable special requirements for back buttering of tile in referenced ANSI A108 series of tile installation standards:
 - 1. Tile floors in wet areas, including showers.

3.6 WALL TILE INSTALLATION

- A. Install types of tile designated for wall installations to comply with requirements in the Ceramic Tile Wall Installation Schedule, including those referencing TCA installation methods and ANSI setting-bed standards.
- B. Joint Widths: Install tile on walls with the following joint widths:
 - 1. Ceramic Mosaic Tile: 1/16 inch.
- C. Back Buttering: For installations indicated, obtain 100 percent mortar coverage by complying with applicable special requirements for back buttering of tile in referenced ANSI A108 series of tile installation standards:
 - 1. Tile wall installations in wet areas, including showers.

3.7 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Unglazed tile may be cleaned with acid solutions only when permitted by tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Protect metal surfaces, cast iron, and vitreous plumbing fixtures from effects of acid cleaning. Flush surface with clean water before and after cleaning.
- B. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded, and otherwise defective tile work.
- C. Provide final protection and maintain conditions, in a manner acceptable to manufacturer, that ensure tile is without damage or deterioration at the time of Substantial Completion.
 - 1. Prohibit foot and wheel traffic from tiled floors for at least 7 days after grouting is completed.

3.8 CERAMIC TILE FLOOR INSTALLATION SCHEDULE

- A. Ceramic Tile Floor Installation: At showers, comply with the following:
 - 1. Tile Type: Unglazed ceramic mosaic tile.
 - 2. Installation Method: TCA B415 (reinforced mortar bed over shower pan membrane over concrete subfloor).
 - 3. Setting Bed and Grout: ANSI A108.5 with the following mortar and grout:
 - a. Dry-set portland cement mortar.
 - b. Dry-set grout.
- B. Ceramic Tile Floor Installation: At typical interior floor installations, comply with the following:
 - 1. Tile Type: Unglazed ceramic mosaic tile.
 - 2. Installation Method: TCA F113 (thin-set mortar bonded to concrete subfloor).
 - 3. Setting Bed and Grout: ANSI A108.5 with the following mortar and grout:
 - a. Dry-set portland cement mortar.
 - b. Dry-set grout.

3.9 CERAMIC TILE WALL INSTALLATION SCHEDULE

- A. Ceramic Tile Wall Installations: Where interior wall installations are indicated, comply with the following:
 - 1. Tile Type: Glazed ceramic mosaic tile.
 - 2. Installation Method: TCA W243 (thin-set mortar bonded to gypsum board on metal studs) typical unless otherwise noted.
 - 3. Installation Method: TCA B415 (shower walls: thin-set mortar bonded to cementitious backer units on metal studs).

4. Setting Bed and Grout: ANSI A108.5 with the following mortar and grout:
 - a. Dry-set portland cement mortar.
 - b. Dry-set grout.

END OF SECTION 09310

SECTION 09651
RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Vinyl composition floor tile.
- B. Related Sections include the following:
 - 1. Division 9 Section "Resilient Wall Base and Accessories" for resilient wall base, reducer strips, and other accessories installed with resilient floor tiles.

1.2 SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Samples for Verification: Full-size tiles of each different color and pattern of resilient floor tile specified, showing the full range of variations expected in these characteristics.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type, color, and pattern of product specified from one source with resources to provide products of consistent quality in appearance and physical properties without delaying the Work.
- B. Fire-Test-Response Characteristics: Provide products with the following fire-test-response characteristics as determined by testing identical products per test method indicated below by a testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Critical Radiant Flux: 0.45 W/sq. cm or greater when tested per ASTM E 648.
 - 2. Smoke Density: Maximum specific optical density of 450 or less when tested per ASTM E 662.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to Project site in manufacturer's original, unopened cartons and containers, each bearing names of product and manufacturer, Project identification, and shipping and handling instructions.
- B. Store products in dry spaces protected from the weather, with ambient temperatures maintained between 50 and 90 deg F.
- C. Store tiles on flat surfaces.

- D. Move products into spaces where they will be installed at least 48 hours before installation, unless longer conditioning period is recommended in writing by manufacturer.

1.5 PROJECT CONDITIONS

- A. Maintain a temperature of not less than 70 deg F or more than 95 deg F in spaces to receive products for at least 48 hours before installation, during installation, and for at least 48 hours after installation, unless manufacturer's written recommendations specify longer time periods. After postinstallation period, maintain a temperature of not less than 55 deg F or more than 95 deg F.
- B. Do not install products until they are at the same temperature as the space where they are to be installed.
- C. Close spaces to traffic during flooring installation and for time period after installation recommended in writing by manufacturer.
- D. Install tiles and accessories after other finishing operations, including painting, have been completed.
- E. Do not install flooring over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive, as determined by flooring manufacturer's recommended bond and moisture test.

PART 2 - PRODUCTS

2.1 RESILIENT TILE

- A. Vinyl Composition Floor Tile: Products complying with ASTM F 1066 and with requirements specified in the Resilient Tile Flooring Schedule.

2.2 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based formulation provided or approved by flooring manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where installation of resilient products will occur for compliance with manufacturer's requirements. Verify that substrates and conditions are satisfactory for resilient product installation and comply with requirements specified.
- B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:

1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by flooring manufacturer.
 2. Subfloor finishes comply with requirements specified in Division 3 Section "Cast-in-Place Concrete" for slabs receiving resilient flooring.
 3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
- C. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Comply with resilient product manufacturer's written installation instructions for preparing substrates indicated to receive resilient products.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.
- C. Remove coatings, including curing compounds, and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
- D. Broom and vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.3 TILE INSTALLATION

- A. General: Comply with tile manufacturer's written installation instructions.
- B. Lay out tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half of a tile at perimeter.
1. Lay tiles square with room axis, unless otherwise indicated.
- C. Match tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Cut tiles neatly around all fixtures. Discard broken, cracked, chipped, or deformed tiles.
1. Lay tiles in pattern of colors and sizes indicated on Drawings.
- D. Scribe, cut, and fit tiles to butt neatly and tightly to vertical surfaces and permanent fixtures, including built-in furniture, cabinets, pipes, outlets, edgings, door frames, thresholds, and nosings.
- E. Extend tiles into toe spaces, door reveals, closets, and similar openings.
- F. Adhere tiles to flooring substrates using a full spread of adhesive applied to substrate to comply with tile manufacturer's written instructions, including those for trowel notching, adhesive mixing, and adhesive open and working times.
1. Provide completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

- G. Hand roll tiles according to tile manufacturer's written instructions.

3.4 CLEANING AND PROTECTING

- A. Perform the following operations immediately after installing resilient products:
 - 1. Remove adhesive and other surface blemishes using cleaner recommended by resilient product manufacturers.
 - 2. Sweep or vacuum floor thoroughly.
 - 3. Do not wash floor until after time period recommended by flooring manufacturer.
 - 4. Damp-mop floor to remove marks and soil.
- B. Protect flooring against mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by flooring manufacturer.
 - 1. Cover products installed on floor surfaces with undyed, untreated building paper until inspection for Substantial Completion.
 - 2. Do not move heavy and sharp objects directly over floor surfaces. Place plywood or hardboard panels over flooring and under objects while they are being moved. Slide or roll objects over panels without moving panels.

3.5 RESILIENT TILE FLOORING SCHEDULE

- A. Vinyl Composition Tile VCT: Where this designation is indicated, provide vinyl composition floor tile complying with the following:
 - 1. Color and Pattern: As indicated on Drawings.
 - 2. Class: Class 1 (solid-color tile-accent tile) and Class 2 (through-pattern tile- field tile).
 - 3. Wearing Surface: Smooth.
 - 4. Thickness: 1/8 inch.
 - 5. Size: 12 by 12 inches.

END OF SECTION 09651

SECTION 09653

RESILIENT WALL BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Resilient wall base.
 - 2. Resilient flooring accessories.

1.2 SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Samples for Verification: In manufacturer's standard sizes, but not less than 12 inches long, of each product color and pattern specified.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type and color of product specified from one source with resources to provide products of consistent quality in appearance and physical properties without delaying the Work.
- B. Fire-Test-Response Characteristics: Provide products with the following fire-test-response characteristics as determined by testing identical products per test method indicated below by a testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Critical Radiant Flux: 0.45 W/sq. cm or greater when tested per ASTM E 648.
 - 2. Smoke Density: Maximum specific optical density of 450 or less when tested per ASTM E 662.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to Project site in manufacturer's original, unopened cartons and containers, each bearing names of product and manufacturer, Project identification, and shipping and handling instructions.
- B. Store products in dry spaces protected from the weather, with ambient temperatures maintained between 50 and 90 deg F.

- C. Move products into spaces where they will be installed at least 48 hours before installation, unless longer conditioning period is recommended in writing by manufacturer.

1.5 PROJECT CONDITIONS

- A. Maintain a temperature of not less than 70 deg F or more than 95 deg F in spaces to receive resilient products for at least 48 hours before installation, during installation, and for at least 48 hours after installation, unless manufacturer's written recommendations specify longer time periods. After postinstallation period, maintain a temperature of not less than 55 deg F or more than 95 deg F.
- B. Do not install products until they are at the same temperature as the space where they are to be installed.
- C. For resilient products installed on traffic surfaces, close spaces to traffic during installation and for time period after installation recommended in writing by manufacturer.
- D. Coordinate resilient product installation with other construction to minimize possibility of damage and soiling during remainder of construction period. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 RESILIENT WALL BASE

- A. Rubber Wall Base: Products complying with FS SS-W-40, Type I and with requirements specified in the Resilient Wall Base and Accessory Schedule.

2.2 RESILIENT ACCESSORIES

- A. Rubber Accessories: Products complying with requirements specified in the Resilient Wall Base and Accessory Schedule.

2.3 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based formulation provided or approved by resilient product manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where installation of resilient products will occur for compliance with manufacturer's requirements, including those for maximum moisture content. Verify that substrates and conditions are satisfactory for resilient product installation and comply with requirements specified. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Comply with manufacturer's written installation instructions for preparing substrates indicated to receive resilient products.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.
- C. Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
- D. Broom and vacuum clean substrates to be covered immediately before installing resilient products. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.3 INSTALLATION

- A. General: Install resilient products according to manufacturer's written installation instructions.
- B. Apply resilient wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
 - 1. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
 - 2. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
 - 3. Do not stretch base during installation.
 - 4. On irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.
 - 5. Install premolded outside corners before installing straight pieces.
 - 6. Form inside corners on job, from straight pieces of maximum lengths possible, by cutting an inverted V-shaped notch in toe of wall base at the point where corner is formed. Shave back of base where necessary to produce a snug fit to substrate.
- C. Place resilient products so they are butted to adjacent materials and bond to substrates with adhesive. Install reducer strips at edges of flooring that would otherwise be exposed.

- D. Apply resilient products to stairs as indicated and according to manufacturer's written installation instructions.

3.4 CLEANING AND PROTECTING

- A. Perform the following operations immediately after installing resilient products:
 - 1. Remove adhesive and other surface blemishes using cleaner recommended by resilient product manufacturers.
 - 2. Sweep or vacuum horizontal surfaces thoroughly.
 - 3. Do not wash resilient products until after time period recommended by resilient product manufacturer.
 - 4. Damp-mop or sponge resilient products to remove marks and soil.
- B. Protect resilient products against mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by resilient product manufacturer.

3.5 RESILIENT WALL BASE AND ACCESSORY SCHEDULE

- A. Rubber Wall Base: Where this product is indicated, provide rubber wall base complying with the following:
 - 1. Color and Pattern: As selected by Architect.
 - 2. Style: Cove with top-set toe at resilient or concrete floors. Straight with no toe at carpet areas.
 - 3. Minimum Thickness: 1/8 inch.
 - 4. Height: 4 inches.
 - 5. Lengths: Coils in lengths standard with manufacturer, but not less than 96 feet.
 - 6. Outside Corners: Premolded.
 - 7. Inside Corners: Job formed.
 - 8. Ends: Premolded.
 - 9. Surface: Smooth.
- B. Rubber Accessory Molding: Provide rubber accessory moldings complying with the following:
 - 1. Color: To match color of adjacent resilient wall base.
 - 2. Product Description: Carpet edge for glue-down applications. Reducer strip for resilient flooring.
 - 3. Profile and Dimensions: As required by description above and as shown on the Drawings.

END OF SECTION 09653

SECTION 09900

PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes surface preparation and field painting of the following:
1. Exposed exterior items and surfaces.
 2. Exposed interior items and surfaces.
 3. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- B. Paint exposed surfaces, except where the paint schedules indicate that a surface or material is not to be painted or is to remain natural. If the paint schedules do not specifically mention an item or a surface, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.
1. Painting includes field painting of exposed bare pipes, hangers, and exposed steel and iron work.
- C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
1. Prefinished items include the following factory-finished components:
 - a. Architectural woodwork and casework.
 - b. Metal lockers.
 - c. Finished mechanical and electrical equipment.
 - d. Light fixtures.
 - e. Distribution cabinets.
 - f. Pre-finished aluminum windows.
 2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
 - a. Furred areas.
 - b. Ceiling plenums.
 3. Finished metal surfaces include the following:
 - a. Anodized aluminum.
 - b. Stainless steel.

4. Operating parts include moving parts of operating equipment and the following:
 - a. Valve and damper operators.
 - b. Linkages.
 - c. Sensing devices.
 - d. Motor and fan shafts.
5. Labels: Do not paint over Underwriters Laboratories (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

D. Related Sections include the following:

1. Division 2 Section "Hot-Mix Asphalt Paving" for traffic-marking paint.
2. Division 5 Section "Metal Fabrications" for shop priming ferrous metal.
3. Division 8 Section "Steel Doors and Frames" for shop priming steel doors and frames.
4. Division 9 Section "Gypsum Board Assemblies" for surface preparation for gypsum board.

1.2 DEFINITIONS

A. General: Standard coating terms defined in ASTM D 16 apply to this Section.

1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
2. Eggshell refers to low-sheen finish with a gloss range between 5 and 20 when measured at a 60-degree meter.
3. Satin refers to low-sheen finish with a gloss range between 15 and 35 when measured at a 60-degree meter.
4. Semigloss refers to medium-sheen finish with a gloss range between 30 and 65 when measured at a 60-degree meter.
5. Full gloss refers to high-sheen finish with a gloss range more than 65 when measured at a 60-degree meter.

1.3 SUBMITTALS

A. Product Data: For each paint system specified. Include block fillers and primers.

1. Material List: Provide an inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
2. Manufacturer's Information: Provide manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material proposed for use.
3. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).

- B. Samples for Verification: Of each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.
 - 1. Provide a list of materials and applications for each coat of each sample. Label each sample for location and application.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain primers and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.
 - 8. VOC content.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.6 PROJECT CONDITIONS

- A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 and 90 deg F.
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 and 95 deg F.
- C. Do not apply paint in rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

1.7 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.
 - 1. Quantity: Furnish the Owner with extra paint materials in the quantities indicated below:
 - a. One gallon for every trim color/paint type used; 5 gallons for every field color/paint type used.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products in the paint schedules.
- B. Manufacturers Names: The following manufacturer is referred in the paint schedules by use of shortened version of name:
 - 1. Dunn Edwards (DE).
 - 2. Equal Products by other manufacturers are acceptable.

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide primers, undercoats, and finish-coat 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.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
 - 1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.
- C. Colors: Match colors indicated by reference to manufacturer's color designations.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions under which painting will be performed for compliance with paint application requirements.
 - 1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
 - 2. Start of painting will be construed as acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 - 1. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning.
 - 1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
 - 1. Provide barrier coats over incompatible primers or remove and reprime.
 - 2. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with the Steel Structures Painting Council's (SSPC) recommendations.
 - a. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with the same primer as the shop coat.

3. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- D. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 3. Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the schedules.
 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 3. Provide finish coats that are compatible with primers used.
 4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convactor covers, covers for finned-tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
 5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
 7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
 9. Sand lightly between each succeeding enamel or varnish coat.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
 2. Omit primer on metal surfaces that have been shop primed and touchup painted.
 3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give

special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.
 2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.
- E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and in occupied spaces.
- F. Mechanical items to be painted include, but are not limited to, the following:
1. Piping, pipe hangers, and supports.
 2. Accessory items.
- G. Electrical items to be painted include, but are not limited to, the following:
1. Conduit and fittings.
- H. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.
- I. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- J. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.
 - 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.
- B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
 - 1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.6 EXTERIOR PAINT SCHEDULE

- A. Zinc-Coated Metal: Provide the following finish systems over exterior zinc-coated (galvanized) metal surfaces:
 - 1. Semigloss, Acrylic-Enamel Finish: 2 finish coats over a galvanized metal primer.
 - a. Primer: Galvanized metal primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.2 mils.
 - 1) DE: Galv-Alum (QD 43-7).
 - b. First and Second Coats: Semigloss, exterior, acrylic-latex enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.6 mils.
 - 1) DE: Permasheen (W 901).
- B. Corroded Exterior Steel Columns at Third Floor Roof
 - 1. Pigmented Polyurethane over Epoxy System (Exterior High-Performance Coating): (After proper surface preparation, including paint removal and removal of rust to expose bare metal)
 - a. Prime Coat: Primer, epoxy, anti-corrosive, for metal, MPI #101.
 - b. Intermediate Coat: Epoxy, gloss, MPI #77.
 - c. First Topcoat: Polyurethane, two-component, pigmented, gloss (Gloss Level 6), MPI #72.

- d. Second Topcoat: Polyurethane, two-component, pigmented, gloss (Gloss Level 6), MPI #72.

C. Concrete Masonry Units

- 1. Semigloss, Acrylic-Enamel Finish: 2 finish coats over block filler.
 - a. Block filler: High performance Latex Block Filler, applied at rate to achieve total dry film thickness of not less than 4.0 mils.
 - 1) DE: Blockfil Smooth (W305)
 - b. First and Second Coats: Semigloss, exterior, acrylic-latex enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.6 mils.
 - 1) DE: Permasheen (W901)

3.7 INTERIOR PAINT SCHEDULE

A. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:

- 1. Flat Acrylic Finish: 2 finish coats over a primer.
 - a. Primer: Latex-based, interior primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.2 mils.
 - 1) DE: Vinylastic (W 101).
 - b. First and Second Coats: Flat, acrylic-latex-based, interior paint applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.5 mils.
 - 1) DE: Decovel (W 401).
- 2. Low-Luster, Acrylic-Enamel Finish: 2 finish coats over a primer.
 - a. Primer: Latex-based, interior primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.2 mils.
 - 1) DE: Vinylastic (W 101).
 - b. First and Second Coats: Low-luster (eggshell or satin), acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.8 mils.
 - 1) DE: Suprema (W 411).

3. Semigloss, Acrylic-Enamel Finish: 2 finish coats over a primer.
 - a. Primer: Latex-based, interior primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.2 mils.
 - 1) DE: Vinylastic (W 101).
 - b. First and Second Coats: Semigloss, acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.6 mils.
 - 1) DE: Decoglo (W450).
- B. Ferrous Metal: Provide the following finish systems over ferrous metal:
 1. Semigloss, Alkyd-Enamel Finish: One finish coat over an enamel undercoater and a primer.
 - a. Primer: Quick-drying, rust-inhibitive, alkyd-based or epoxy-metal primer, as recommended by the manufacturer for this substrate, applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.5 mils.
 - 1) DE: Corrobar (43-5).
 - b. Undercoat: Alkyd, interior enamel undercoat or semigloss, interior, alkyd-enamel finish coat, as recommended by the manufacturer for this substrate, applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.2 mils.
 - 1) DE: Super U-365 (E 22-1).
 - c. Finish Coat: Odorless, semigloss, alkyd, interior enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.4 mils.
 - 1) DE: Syn-Lustro (9).

END OF SECTION 09900

SECTION 10426
IDENTIFYING DEVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Exterior Signage
 2. Interior Signage
 3. Department of Transportation (DOT) traffic control signs

1.2 SUBMITTALS

- A. Product Data:
1. Submit manufacturer's technical data and installation for each type of sign required.
 2. Submit signage selection schedule indicating quantity and location of each type of DOT sign required.
- B. Shop Drawings:
1. Submit shop drawings listing sign size, letterform and letter heights.
- C. Samples:
1. Submit one full size sample sign of type, style and color specified, including method of attachment. If approved, the sample will become part of the job.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Transport, handle, store, and protect Products.
- B. Store in original packaging, off the ground and under protective covering.
- C. Handle so as to prevent damage.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers offering Products in compliance with the project requirements as described in these specifications shall be considered, if the Products offered are a part of the manufacturer's specialized published

product line and the manufacturer can demonstrate a minimum of 5 years documented experience.. The Architect and Resident Engineer will determine if products offered are in compliance with the contract documents. Manufacturer's and/or their product names are used in these specifications only to establish a level of quality.

- B. DOT (Department of Transportation) Traffic Control Signs. The Contractor is responsible to furnish and install (including foundations) all DOT Traffic Control Signs as indicated in the Drawings.

2.2 GRAPHIC PROCESS

- A. All interior signs shall be manufactured using Graphic Process Series 200A - Sand Carved® using Format D.
 - 1. Tactile characters shall be raised the required 1/32" inches from sign face. Glue-on letters or etched backgrounds are not acceptable.
 - 2. All text shall be accompanied by Grade 2 braille. Braille shall be separated ½" from the corresponding raised characters or symbols. Grade 2 braille translation to be provided by signage manufacturer.
 - 3. All letters, numbers and/or symbols shall contrast with their background, either light characters on a dark background or dark characters on a light background. Characters and background shall have a non-glare finish.
- B. Plaque material shall be Special Purpose SP125 decorative thermosetting high pressure laminate. Material to be 1/8" thick laminate with a melamine resin surface and a phenolic resin core which provides resistance to abrasion, stains, alcohol, solvents, boiling water, and heat. The material shall be NEMA rated and have flammability and smoke values that meet the standards for flammability of interior materials.
- C. Background color as selected by architect from manufacturer's actual color samples.
- D. Letterform shall be Gill Sans upper case letters and numbers.
- E. Size of letters and numbers shall be as follows:
 - 1. Room numbers shall be 1 ".
 - 2. Lettering for room ID signs shall be 5/8" or as noted.
 - 3. Symbol size shall be 4".
 - 4. Standard Grade 2 braille shall be ½" below copy.
 - 5. Corners: ½" radius
- F. Copy position: CC (centered/centered) or as indicated on drawings.

2.3 SIGN DESIGN

- A. Stairway wall signs - Typical at each landing, with verbal description and Grade 2 braille, refer to detail on drawings for copy and plaque size.
- B. Room ID signs with room function only on one or two lines of copy. Size 4" x the length required based on the following copy requirements.
 - 1. First Aid
 - 2. Men's Locker Room
 - 3. Women's Locker Room
 - 4. Watch Room A
 - 5. Watch Room B
 - 6. Toilet Room (2, uni-sex)
- C. Toilet Room door sign, California Title 24 Accessibility:
 - 1. Unisex Toilet Room: 12" diameter circle, 1/4" thick with 1/4" triangle superimposed within the circle. The accessibility gender symbols with the verbal description placed directly below in contracting color and followed by Grade 2 braille is optional.
 - 2. The color and contrast of the sign shall distinctively contrast with the color and contrast of the door.
 - 3. Signs shall be centered on the door at + 60" above the floor.

2.4 EXTERIOR WALL SIGNS

- A. Access entrance symbol sign, Black duranodic aluminum frame. Insert size 9" x 9". Insert shall have a raised 4" accessibility symbol with the verbal description, "Entrance" using 1" Gill Sans upper case letters directly below and followed by Grade 2 braille.
- B. Accessible Toilet Room Signs: Aluminum plaque with Kynar 500 or equal finish, white images on a blue background as follows:
 - 1. Men's Room: Equilateral triangle, 1/4" thick with edges 12" long and a vertex pointing upward. The accessibility gender symbol with the verbal description placed directly below in contracting color and followed by Grade 2 braille is optional.
 - 2. Women's Room: 12" diameter circle, 1/4" thick. The accessibility gender symbol with the verbal description placed directly below in contracting color and followed by Grade 2 braille is optional.
 - 3. Unisex Toilet Room: 12"diameter circle, 1/4" thick with 1/4" triangle superimposed within the circle. The accessibility gender symbols with the verbal description placed directly below in contracting color and followed by Grade 2 braille is optional.

2.5 DOT TRAFFIC SIGNS

- A. Contractor is responsible to purchase and install all exterior DOT (Department of Transportation) traffic control signage as shown in the Drawings.

1. Traffic Signs: Sign posts shall be break-away design per City of San Diego Standard Drawing M-45. Sign face background is 0.063 inch aluminum plate, cut to size and attached to sign post with non-corrosive 3/8 inch machine bolts with washers, two per sign.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions by Contractor is required: Verify through field measurements that contract Documents are in accordance with actual site conditions. Verify that all sign site locations, wall surfaces, substrates and conditions are as required, and ready to receive Work.
 1. Examine free standing sign placement locations, walls, doors, soffit and other areas scheduled to receive signs for conditions that would affect quality and execution of work.
 2. Check that electrical distribution for illuminated signs is complete and ready to receive signs.
 3. Contractor is responsible for obtaining any required permits.
- B. Contractor is to report in writing to Resident Engineer prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- C. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the City of San Diego.

3.2 PREPARATION

- A. Contractor is responsible for the removal of any existing signs in preparation to receive new sign elements. Contractor will patch affected surfaces to match existing materials. Contractor must dispose of all signs in accordance with all state and local codes and ordinances. Recycling and re-use of existing sign materials is greatly encouraged. Contractor must consider the salvage value of removed signs in the cost of work.
- B. Contractor must verify that all signs ordered fit the as-built conditions of the facility.

3.3 INSTALLATION

- A. Install sign units and components at the locations shown on the Drawings. Securely mount with fasteners appropriate to the substrate conditions.
- B. Install foundations for all free standing signs.

- C. Verify that all traffic control signs shown in the Drawings are accurate and in compliance with all state and local codes and ordinances.
- D. Install level, plumb, and at the proper height. Cooperate with other trades for installation of sign units in all locations and to all finished surfaces.
- E. Interior signs shall be mounted using vinyl tape and silastic adhesive. All signs shall be mounted 60" from the floor to the center of the sign on the latch side of the door. The distance between the door frame and sign should be 2". Installer user assumes responsibility for suitable installation of the signs.
- F. Exterior signs shall be mounted using mechanical means. Refer to details on drawings.

3.4 CLEANING AND PROTECTION

- A. After installation, clean soiled signs surface according to manufacturer's instructions. Protect from damage until acceptance.

END OF SECTION 10426

SECTION 10500
SOLID PLASTIC LOCKERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. HDPE locker units with hinged doors.
 - 2. All plastic sloped tops, and filler and end panels.

1.2 SUBMITTALS

- A. Product Data: Data on locker types, sizes, and accessories.
- B. Shop Drawings: Indicate layout, dimensions, details of fabrication and installation. Include plans, elevations, sections, and attachments to other Work.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Transport, handle, store, and protect Products.
- B. Deliver materials to project site in manufacturer's original unopened protective packaging.
- C. Identify contents, manufacturer, brand name, and applicable standards.
- D. Store materials in area protected from weather and construction operations.
- E. Protect Work from damaged during transportation, storage at Project Site, and throughout tenure of work. Protect adjacent Work and materials from damage during progress of specified Work. Damaged Work shall be repaired or replaced at no additional cost to the City of San Diego. Furnish receipts of all loose or detachable parts.

1.4 WARRANTY

- A. Manufacturer shall warranty lockers for a period of 15 years the HDPE plastic panels, doors, and shelves against rust and other types of corrosion, delamination, or breakage under normal use.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers offering Products in compliance with the project requirements as described in these specifications shall be considered, if the Products offered are a part of the manufacturer's specialized published product line and the manufacturer can demonstrate a minimum of 5 years documented experience. The Architect and Resident Engineer will determine if products offered are in compliance with the contract documents. Manufacturer's and/or their product names are used in these specifications only to establish a level of quality.
- B. Section 01600 - Product Requirements: Product options and substitutions. Substitutions: Permitted.

2.2 MATERIALS

- A. Type: Single Tier lockers with sloped tops and 4" high base constructed of HDPE solid plastic. Lockers constructed of other materials, or material with a core and not of solid plastic, will not be acceptable.
- B. Sides, shelves, tops and bottoms shall be made from polymer resin manufactured under high pressure to form solid plastic components ½" thick with a homogenous color.
- C. Doors shall be made from polymer resin manufactured under high pressure to form solid plastic components ½" thick with a homogeneous color.
- D. Door frames shall be constructed from polymer resins manufactured under high pressure to form solid plastic components ½" thick with a homogeneous color.
- E. Continuous latch shall provide a spring-loaded, slide latch mechanism that is capable of accepting various locking mechanisms. Latch mechanism shall be attached to the door, providing a continuous security latch.
- F. Door hinge shall be continuous and integrate into the full-length of the door and main locker frame, made entirely from plastic, with a Type 304 stainless steel knuckle pin.
- G. Clothing rod shall be made from clear anodized aluminum. Attach with stainless steel screws.
- H. Coat hooks shall be made from chrome plated zamac and attached with stainless steel screws, three per opening.
- I. Finish shall be commercial grade matte finish for tops, bottoms, side-walls, shelves and backs, in the color natural white. Doors and frames shall have a slightly textured finish and be from the manufacturer's list of standard colors.

- J. Number Plates: Provide number plates for each locker for field or factory mounting.
- K. Padlocks: Combination lock with master-key operation at back of lock.

2.2 FABRICATION

- A. Fabricate locker components, square and rigid, with a finish free of scratches and chips. All exposed sides shall be covered with a protective masking.
- B. Solid plastic locker components shall snap together for easy assembly and shall provide a solid and secure construction. Adjacent lockers shall share a common side panel. Locker units shall be manufactured for assembly in a group of no more than five adjacent lockers.
- C. Each Locker shall have a shelf, three side hooks and a hanger rod.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01700 - Execution Requirements: Verification of existing conditions before starting work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
- C. Report in writing to Resident Engineer prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- D. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the City of San Diego.

3.2 PREPARATION

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication of special components, when possible, to ensure proper fitting of work. However, allow for adjustment and fitting of trim and filler panels whenever taking of field measurements before fabrication might delay Work.

3.3 INSTALLATION

- A. Install lockers at locations indicated on Drawings in accordance with manufacturer's published instructions.

- B. Install lockers plumb, level, rigid, and flush.
- C. Space fastenings about 48 inches on center, unless otherwise recommended by manufacturer. Install through back-up reinforcing plates where necessary to avoid distortion. Conceal fasteners.
- C. Install trim where indicated, use concealed fasteners to provide flush, hairline joints with adjacent surfaces.

3.4 FIELD QUALITY CONTROL

- A. Inspect installation of lockers, attachment, and alignment with adjacent finishes.
- B. Operate locker doors and locking devices without binding.

3.5 ADJUSTING AND CLEANING

- A. Adjust doors and latches to operate easily without binding. Verify that integral locking devices are operating properly.
- B. Touch-up marred finishes. Use only materials and procedures recommended or furnished by locker manufacturer. Replace units which cannot be restored to factory-finished appearance.

END OF SECTION

SECTION 10801

TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Toilet and bath accessories.
 - 2. Underlavatory guards.
- B. Related Sections include the following:
 - 1. Division 9 Section "Ceramic Tile" for ceramic bath accessories.

1.2 SUBMITTALS

- A. Product Data: Include construction details, material descriptions and thicknesses, dimensions, profiles, fastening and mounting methods, specified options, and finishes for each type of accessory specified.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise approved by Architect.

1.4 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by disabled persons, proper installation, adjustment, operation, cleaning, and servicing of accessories.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide accessories by one of the following:
 - 1. Toilet and Bath Accessories:
 - a. Bobrick Washroom Equipment, Inc.

- b. American Specialties, Inc.
- c. Bradley Corporation.
- d. Or equal.

2. Underlavatory Guards:

- a. Brocar Products, Inc.
- b. Truebro, Inc.
- c. Or equal.

2.2 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, with No. 4 finish (satin), in 0.0312-inch minimum nominal thickness, unless otherwise indicated.
- B. Sheet Steel: ASTM A 366/A 366M, cold rolled, commercial quality, 0.0359-inch minimum nominal thickness; surface preparation and metal pretreatment as required for applied finish.
- C. Galvanized Steel Sheet: ASTM A 653, G60.
- D. Mirror Glass: ASTM C 1036, Type I, Class 1, Quality q2, nominal 6.0 mm thick, with silvering, electroplated copper coating, and protective organic coating complying with FS DD-M-411.
- E. Galvanized Steel Mounting Devices: ASTM A 153, hot-dip galvanized after fabrication.
- F. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

2.3 FABRICATION

- A. General: One, maximum 1-1/2-inch- diameter, unobtrusive stamped manufacturer logo, as approved by Architect, is permitted on exposed face of accessories. On interior surface not exposed to view or back surface of each accessory, provide printed, waterproof label or stamped nameplate indicating manufacturer's name and product model number.
- B. Surface-Mounted Toilet Accessories: Unless otherwise indicated, fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with continuous stainless-steel hinge. Provide concealed anchorage where possible.
- C. Recessed Toilet Accessories: Unless otherwise indicated, fabricate units of all-welded construction, without mitered corners. Hang doors and access panels with full-length, stainless-steel hinge. Provide anchorage that is fully concealed when unit is closed.
- D. Framed Glass-Mirror Units: Fabricate frames for glass-mirror units to accommodate glass edge protection material. Provide mirror backing and support system that permits rigid, tamper-resistant glass installation and prevents moisture accumulation.

1. Provide galvanized steel backing sheet, not less than 0.034 inch and full mirror size, with nonabsorptive filler material. Corrugated cardboard is not an acceptable filler material.
- E. Mirror-Unit Hangers: Provide mirror-unit mounting system that permits rigid, tamper- and theft-resistant installation, as follows:
 1. One-piece, galvanized steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.
- F. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Secure mirrors to walls in concealed, tamper-resistant manner with special hangers, toggle bolts, or screws. Set units level, plumb, and square at locations indicated, according to manufacturer's written instructions for substrate indicated.
- C. Install grab bars to withstand a downward load of at least 250 lbf, when tested according to method in ASTM F 446.

3.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

3.3 TOILET AND BATH ACCESSORY SCHEDULE

- A. General: For purposes of convenience, products by Bobrick have been listed in schedules. (Items listed below may not all be included in the work.)
- B. Paper Towel Dispenser (PTD): Where this accessory is indicated, provide stainless-steel paper towel dispenser complying with the following:
 1. Products: Bobrick Model B-262.

2. Surface-Mounted Type: Sized for minimum of 400 C-fold or 525 multifold paper towels without using special adapters; with hinged front equipped with tumbler lockset; and with refill indicators that are pierced slots at sides or front.
- C. Combination Toilet Seat Cover Dispenser, Sanitary Napkin Disposal and Toilet Tissue Dispenser (TSCD/SNDL/TPD): Where this accessory is indicated, comply with the following:
1. Products: Bobrick Model B-3571.
 2. Mounts through toilet partition back to back, with one side flush at partition in accessible toilet compartment to allow grab bar clearance.
 3. Toilet seat cover dispenser and sanitary napkin disposal used from both sides. Disposal unit to have 1.5 gal. capacity. Seat cover dispenser to hold 1000 seat covers, and toilet paper dispenser to hold 4 rolls (2 per side).
- D. Combination Toilet Seat Cover Dispenser, Toilet Tissue Dispenser (TSCD/TPD): Where this accessory is indicated, comply with the following:
1. Products: Bobrick: Models B-3471, B-3474, B-3479.
 2. Mounts through toilet partition back to back, with one side flush at partition in accessible toilet compartment to allow grab bar clearance; mounts recessed in wall for access from one side; surface mounts on toilet partition for access from one side.
 3. Toilet seat cover dispenser used from both sides (at back to back units), with 1000 seat cover capacity and two toilet paper rolls per toilet fixture.
- E. Combination Towel Dispenser/Waste Receptacle (PTD/R): Where this accessory is indicated, provide stainless-steel combination unit complying with the following:
1. Products: Bobrick Model B-380328.
 2. Recessed Type: Designed for nominal 4-inch wall depth with continuous, seamless wall flange; towel dispenser in unit's upper compartment designed to dispense minimum of 600 C-fold or 800 multifold paper towels; waste receptacle in unit's lower compartment with minimum 6-gal. capacity, reusable, vinyl liner; and flush doors on upper and lower compartments with continuous hinges and tumbler locksets.
- F. Soap Dispenser (SD): Where this accessory is indicated, provide soap dispenser complying with the following:
1. Products: Bobrick Model 310932.
 2. Liquid Soap Dispenser, Deck Mounted: Piston-and-spout-type unit with minimum 20-oz. capacity, polyethylene reservoir concealed below deck; brightly polished stainless-steel piston and 6-inch- long spout; and chrome-plated deck escutcheon.
 - a. Mounting: Designed for mounting on countertop.
 - b. Soap Valve: Designed for dispensing soap in liquid form.
- G. Grab Bar (GB): Where this accessory is indicated, provide stainless-steel grab bar complying with the following:

1. Products: Bobrick Model B-6206 Series, lengths/configurations as indicated on Drawings.
 2. Stainless-Steel Nominal Thickness: Minimum 0.05 inch.
 3. Mounting: Concealed with manufacturer's standard flanges and anchors
 4. Gripping Surfaces: Smooth, satin finish at toilet rooms. Manufacturer's standard slip-resistant texture at showers.
 5. Outside Diameter: 1-1/2 inches for heavy-duty applications.
- H. Mirror Unit: Where this accessory is indicated, provide mirror unit complying with the following:
1. Products: Bobrick Model 1658 Series.
 2. Stainless-Steel, Channel-Framed Mirror: Fabricate frame from stainless-steel channels in manufacturer's standard satin or bright finish with square corners mitered to hairline joints and mechanically interlocked.
- I. Shower Curtain Rod: Where this accessory is indicated, provide stainless-steel shower curtain rod with 3-inch stainless-steel flanges designed for exposed fasteners, in length required for shower opening indicated, and complying with the following:
1. Products: Bobrick Model B-6107.
 2. Heavy-Duty Rod: 1-1/4-inch OD; fabricated from nominal 0.05-inch- thick stainless steel.
- J. Shower Curtain: Where this accessory is indicated, provide shower curtain complying with the following:
1. Products: Bobrick Model B-204 Series.
 2. Vinyl Shower Curtain: Minimum 0.006-inch- thick, opaque, matte vinyl with hemmed edges and corrosion-resistant grommets at minimum 6 inches o.c. through top hem.
 - a. Size: Minimum 6 inches wider than opening by 72 inches high.
 - b. Color: White.
 3. Shower Curtain Hooks: Chrome-plated or stainless-steel, spring wire curtain hooks with snap fasteners, sized to accommodate specified curtain rod. Provide one hook per curtain grommet.
- K. Folding Shower Seat (FSS): Where this accessory is indicated, provide heavy-duty hinged seat designed to fold up against wall when not in use with stainless-steel support braces, hinges, frame, and fasteners; of all-welded construction; and complying with the following:
1. Products: Bobrick Model B-5181 (left hand seat) or B-5171 (right hand seat) as required for condition shown.
 2. Configuration: L-shaped seat, designed for wheelchair access. Provide seat extension at maintenance shower as required to comply with CBC, Title 24, Fig 11B-2B.
 3. Seat Material: Phenolic or polymeric composite of slat-type or one-piece construction. Color as selected by Architect from mfr's full range.

- L. Robe Hook (RH): Where this accessory is indicated, provide robe hook complying with the following:
 - 1. Products: Bobrick Model B-672.
 - 2. Double-Prong Unit: Stainless-steel, double-prong robe hook with rectangular wall bracket and backplate for concealed mounting.

- M. Mop and Broom Holder (MBH): Where this designation is indicated, provide mop and broom holder complying with the following:
 - 1. Products: Bobrick Model B-224.
 - 2. Mop and Broom Holder with Utility Shelf: 48-inch- long unit fabricated of minimum nominal 0.05-inch- thick stainless steel with shelf; support brackets for wall mounting; five hooks for wiping rags; six spring-loaded, rubber hat, cam-type, mop/broom holders mounted on front of shelf; and approximately 1/4-inch-diameter, stainless-steel rod suspended beneath shelf for drying rags.

- N. Underlavatory Guard: At lavatories and sinks: Provide underlavatory guard complying with the following:
 - 1. Insulating Piping Coverings: White, antimicrobial, molded-vinyl covering for supply and drain piping assemblies intended for use at accessible lavatories to prevent direct contact with and burns from piping. Provide components as required for applications indicated with flip tops at valves that allow service access without removing coverings.

- O. Stainless Steel Hook Strip:
 - 1. Bobrick B-232x 24.

END OF SECTION 10801

SECTION 15100

HEATING, VENTILATING AND AIR CONDITIONING

PART 1 - GENERAL

1.1 SCOPE

- A. The work includes furnishing and installing heating, ventilating and air conditioning improvements and performing selective demolition as shown on the drawings as specified in these special provisions.

1.2 SUBMITTALS

- A. Submittals shall conform to Section 1C - 3.20 herein.

1.3 WORK INCLUDED

- A. Work included shall be as indicated on the drawings, including but not limited to the following:
 - 1. Ductwork.
 - 2. Insulation.
 - 3. Air distribution.
 - 4. Exhaust Fans.
 - 5. Vibration Isolators.
 - 6. Temperature Control.

1.4 RELATED WORK NOT IN THIS SECTION

- A. Painting, except as hereinafter specified.
- B. Division 16 shall provide all line voltage wiring, and connect up all motors complete.

1.5 DELIVERY AND STORAGE OF MATERIALS

- A. Provide for the safety and good condition of all materials and equipment until final acceptance by the Engineer. Protect all materials and equipment from damage from any cause whatever, and provide adequate and proper storage facilities during the progress of the work. Replace all damaged and defective work precedent to filing application for final acceptance.

1.6 CODES AND STANDARDS

- A. All work and materials shall be in full accordance with Title 24 CCR and the latest rules and regulations of the State Fire Marshal; the Safety Orders of the Division of Industrial Safety; the National Electric Code; the Uniform Plumbing Code; Local Building Codes;

the Uniform Mechanical Code; Vol. II of the Uniform Building Code; CCR T-24; and other applicable codes, laws or regulations of bodies lawfully empowered and having jurisdiction over this project. Nothing in the plans or specifications is to be construed to permit work not conforming to these codes.

1.7 SEISMIC ANCHORAGE AND BRACING

- A. All equipment and ductwork shall be anchored or braced in accordance with the Uniform Building Code. The contractor is responsible for providing anchorage or bracing for all equipment regardless of whether detailed or shown on the plans. All equipment and ductwork supports not detailed or shown on the plans requires approval of a registered Structural Engineer.
- B. All ductwork shall be supported or braced in accordance with the SMACNA Guidelines for "Seismic Restraints of Mechanical Systems and Plumbing Piping Systems", OSHPD #R-0010, Superstrut "Seismic Restraint System", OSHPD #R-0003, Unistrut Corp. "Seismic Bracing For Ductwork, Conduit, and Cable Tray Supports", OSHPD #R-0120, or B-Line "Seismic Restraints", OSHPD #R-0114. If the duct size exceeds the size included in these manuals, custom designed supports are required. All custom supports require the approval of a registered Structural Engineer. All shop drawings and calculations shall be submitted prior to fabrication.
- C. All flexibly mounted equipment shall be provided with seismic vibration isolation devices designed in accordance with the California Uniform Building Code. All anchors and equipment connections shall be submitted. All seismic vibration isolation devices shall be submitted with structural calculations signed by a Registered Structural Engineer in the State of California.

1.8 CUTTING AND PATCHING

- A. Perform all cutting and fitting required for work of this section.
- B. All patching of finished construction of building shall be performed under the sections of specifications covering these materials. See Section 01731, Cutting and Patching.
- C. Openings through fire rated walls for pipes and ducts shall be packed with impervious noncombustible materials to provide a tight fit. All duct penetrations through fire rated walls shall have a fire smoke damper with smoke detector and access panel.

1.9 SELECTIVE DEMOLITION

- A. This section requires the selective removal and subsequent offsite disposal of the following:
 - 1. Portions of existing ductwork, piping, control wiring, and mechanical equipment.
 - 2. Occupancy: Conduct selective demolition work in manner that will minimize need for disruption of Owner's normal operations. Provide minimum of 48 hours advance notice to Owner of demolition activities that will affect Owner's normal operations.

3. Protections: Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition work.
4. Damages: Promptly repair damages caused to adjacent facilities by demolition work.
5. Demolition: Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with project schedule and governing regulations.
6. Disposal of Demolished Materials: Remove from building site debris, rubbish, and other materials resulting from demolition operations. Transport and legally dispose off site.

1.10 GENERAL

- A. Unless otherwise specified herein, all equipment and fixtures shall be installed as shown in accordance with the manufacturer's recommendations.
- B. Workmanship: All labor shall be carefully skilled for this kind of work, thorough and first class in all respects and under the direction of a competent foreman.
- C. Special Note: Any work called for on plans shall be installed whether or not mentioned in these specifications.

1.11 DAMAGE BY LEAKS

- A. This Contractor shall be responsible for damage to the grounds, walks, roads, buildings, piping systems, electrical systems and their equipment and contents, caused by leaks in the piping systems being installed or having been installed herein. He shall repair at his expense all damage so caused.

1.12 EMERGENCY REPAIRS

- A. The Owner reserves the right to make emergency repairs as required to keep equipment in operation without relieving the Contractor of his responsibilities.

1.13 EXPLANATION AND PRECEDENCE OF DRAWINGS

- A. For purposes of clearness and legibility, drawings are essentially diagrammatic, and, although size and location of equipment are drawn to scale wherever possible, Contractor shall make use of all data in all the contract documents and shall verify this information at building site.
- B. The drawings indicate required size and points of termination of ducts, and suggest proper routes to conform to structure, avoid obstructions and preserve clearances. However, it is not intended that drawings indicate all necessary offsets, and it shall be the work of the Contractor to make the installation in such a manner as to conform to structure, avoid obstructions, preserve headroom and keep openings and passageways clear, without further instructions or cost to the Owner.

- C. Shop drawings shall be furnished indicating all changes to meet space requirements, code requirements and as necessary to resolve all space conflicts.
- D. It is intended that all apparatus be located symmetrically with architectural elements. Refer to architectural details in completing the correlating work.
- E. The Contractor shall fully inform himself regarding any and all peculiarities and limitations of the spaces available for the installation of all work and materials furnished and installed under the Contract. He shall exercise due and particular caution to determine that all parts of his work are made quickly and easily accessible.
- F. The Contractor shall study all drawings and specifications to determine any conflict with ordinances and statutes. Any errors or omissions shall be reported, and any changes shall be shown in the as-built drawings and the additional work performed at no cost to the Owner.
- G. Submittal of bid shall indicate the Contractor has examined the site and drawings and has included all required allowances in his bid. No allowance shall be made for any error resulting from Contractor's failure to visit job site and to review drawings, and bid shall include costs for all required drawings and changes as outlined above, all at no cost to Owner.

1.14 SUPERVISION AND COOPERATION

- A. The work under this section shall be in cooperation with the work of other trades to prevent conflict or interference and to aid rapid completion of the overall project.

1.15 ELECTRICAL

- A. When electrical work is specified in previous or subsequent sections to be furnished and installed by Division 15, it shall be installed in metallic conduit and in full accordance with the National Electrical Code and the State of California Industrial Accident Commission's Safety Orders. Conduit shall be installed in accordance with the Electrical Division of these Specifications.
- B. The line voltage wiring shown on the Electrical Drawings is based on the control diagram, control specifications and specified items as outlined herein. Any changes necessary to accommodate the controls and specified items furnished which increase the cost for line voltage wiring shall be paid for by the Contractor.
- C. Before order is placed for motors or other electrical devices, the Contractor shall check with Division 16 plans and specifications, and verify requirements as to type, mounting and current characteristics as well as to any special delivery instructions.
- D. This Contractor shall furnish, install and/or align all motors for driving the equipment furnished and installed by this contract. Motors shall be designed to operate at full load continuously without exceeding a temperature rise of 40°C. The size of all motors shall be the size required by equipment it drives. Each belt-connected motor shall be fitted with base and slide rails. Motors shall be Westinghouse, General Electric, Fairbanks Morse, Wagner, Allis Chalmers, or Sterling. Each motor shall have a sufficient starting

torque to start the apparatus drive. All motors shall be wound for the voltage shown in the schedule on the drawings.

- E. Each motor for a belt drive shall be fitted with adjustable "V" belt sheaves. These shall be key seated and set screwed to the motor shafts and the combined motor and sheave shall run in perfect balance.
- F. All motors less than 1/2 HP shall have built-in running thermal overload protection. Motors 1/2 HP and larger, shall be rated for 3-phase service unless otherwise noted.
- G. All motors installed exposed to the weather, shall be totally enclosed and weatherproof.

PART 2 - PRODUCTS

2.1 SHEET METAL AND DUCTWORK

- A. The contractor shall furnish and install all sheet metal ductwork and plenums shown on plans. Where otherwise noted, sheet metal shall be galvanized steel construction, and gauges shall conform to the requirements of Table 6, or Standard 6-1 in the California Uniform Mechanical Code, 1997 Edition. Installation of ducts shall conform to the requirements of The Uniform Mechanical Code and SMACNA HVAC Duct Construction Standards, 1985 Edition, unless more restrictive within this specification. Duct shall have smooth interiors and all seams, braces, and hangers shall be on the outside. All exposed duct shall be given special care, and be aesthetically pleasing.
 - 1. Transverse Joints: Ductmate, or Ward proprietary duct connection systems will be accepted. Ductwork constructed using these systems will refer to the manufacturers guidelines for intermediate reinforcement size and spacing, and joint reinforcements. Sheet metal gauges shall conform to the Uniform Mechanical Code. Manufacturer specified gauges are not acceptable unless heavier than mentioned above.
 - 2. TDC/TDF/T-24 shall be constructed as a SMACNA T-24 flange. Use of these joint systems shall be limited to duct sizes up to 24", and operating pressures up to 1" w.g.
 - 3. Duct Wall: All interior ducts shall be constructed with G-60 or better galvanized steel LFQ chem treat or oil coat. Exterior ductwork shall be G-90 or better galvanized steel LFQ Chemtreat. Duct exposed to high humidity conditions (i.e., kitchen exhausts) shall be G-306 stainless steel.
 - 4. Ductboard: Fiberglass ductboard will not be accepted.
- B. Where turning vanes are indicated on the drawings, or as required by this specification, they shall be 22 gauge single vane with a 3/4" trailing edge type, in accordance with 1985 SMACNA Duct Construction Standards, Figure 2-3. All square turn elbows to have turning vanes.

2.2 FLEXIBLE CONNECTORS

- A. Flexible Connectors: Furnish and install double neoprene coated, 30 ounce glass fabric flexible connections, properly connected to 24 gauge metal, fitted on duct connections, at fan or unit inlets and outlets, and where indicated on plans.

2.3 DAMPERS

- A. Dampers: Manually operated, round duct dampers indicated on the drawings shall be Ruskin MDRS25, Greenheck, or equal, with blades of 20-gauge steel. Provide 2" hand quadrant standoff bracket on all ducts with wrapped insulation.

2.4 INSULATION

- A. Manufacturer: The products listed below are manufactured by Schuller. Equivalent Products as manufactured by Knauf, Owens Corning or approved equal are acceptable.

- B. Locations of Liner/Insulation:

- 1. Ducts shall be lined as follows:

- a. All supply and return ducts for 20' from air conditioning unit, and all ductwork exposed to weather.
- b. All exhaust ducts for 20' from all exhaust fans.

- 2. Supply and return ductwork not specified to be lined shall be insulated with thermal duct wrap.
- 3. Ductwork installed exposed in a conditioned space does not require thermal duct wrap. Ductwork shall be lined as specified above.

- C. Acoustical Duct Liner:

- 1. Line ductwork specified above with 1" duct liner, except ductwork exterior to the building walls or roof, and ducts serving kitchen hoods, which shall be lined with 2" liner. All duct sizes shown on drawings are net inside dimensions. Allowances shall be made for liner thickness.
- 2. Liner shall be cemented to duct with adhesive and mechanically fastened with adhered fasteners. Where widths of ducts or casings exceed 20", both mechanical fasteners and adhesive shall be used. Exposed edges shall be securely taped to prevent fraying. Flame spread -25, fuel contributed and smoke developed rating shall not exceed -50.
- 3. Rectangular Duct Liner: Permacote Linacoustic, Owens Corning, or equal, meeting ASTM C 1071 with air surface coated with acrylic coating treated with EPA registered anti-microbial agent proven to resist microbial growth as determined by ASTM G 21 and G 22.
 - a. 'K' ('ksi') Value: ASTM C 518, 0.25 at 75°F (0.036 at 24°C).
 - b. Noise Reduction Coefficient: .70 or higher based on "Type A mounting" and tested in accordance to ASTM C 423.
 - c. Maximum Velocity: 5,000 ft/min (25.4 m/sec).
 - d. Adhesive: Meeting ASTM C 916.

- e. Fasteners: Duct liner galvanized steel pins, welded or mechanically fastened.
4. Round Duct Liner: Permacote Spiracoustic, Owens Corning, or equal, rigid preformed round liner, or Spiracoustic Plus with air surface coated with acrylic coating treated with EPA register anti-microbial agent proven to resist microbial growth as determined by ASTM G 21 and G 22.
 - a. 'K' ('ksi') Value: ASTM C 518, 0.23 at 75°F (.033 at 24°C).
 - b. Noise Reduction Coefficient of .70 as per ASTM C 423 (Type A mounting).
 - c. Maximum Velocity: 5,000 ft/min (25.4 m/sec).
- D. Thermal Duct Wrap:
1. All supply and return ductwork not specified to be lined shall be insulated with faced fiberglass duct wrap insulation blanket 3/4 lb. density with joints lapped not less than 1-1/2" secured with 16 soft galvanized iron wire spaced approximately 12" on centers. Supply and return ductwork insulation shall be 2" thick all service faced duct wrap insulation. Flame spread -25, fuel contributed and smoke developed rating shall not exceed -50.
 2. Flexible Fiber Glass Blanket: Microlite Type 75, Knauf, or equal, meeting ASTM C 553 flexible blanket.
 - a. 'K' ('ksi') Value: 0.27 at 75°F (0.040 at 24°C) installed.
 - b. Density: .75 lb/cu ft (12 kg/cu m).
 - c. Vapor Barrier Jacket: FSK, aluminum foil reinforced with fiberglass yarn and laminated to fire-resistant kraft, secured with UL listed pressure sensitive tape and/or outward clinched expanded staples and vapor barrier mastic as needed.
 3. Rigid Fiberglass Board: 814 Spin-Glas meeting ASTM C 612; rigid board.
 - a. 'K' ('ksi') Value: 0.23 at 75°F (0.033 at 24°C).
 - b. Density: 3.0 lb/cu ft (48 kg/cu m).
 - c. Vapor Retardant Jacket: AP, bleached kraft paper bonded to aluminum foil, reinforced with fiberglass yarn; or FSK, aluminum foil reinforced with fiberglass yarn and laminated to fire-resistant kraft, secured with UL listed pressure sensitive tape and/or outward clinched expanded staples and vapor barrier mastic as needed.
 4. Outdoor ducts:
 - a. Aluminum Jacket: .016" (0.045 mm) thick sheet, smooth/embossed finish, with longitudinal slip joints and 2" (50 mm) laps.
- E. Unit compressor shall be hermetically sealed with crankcase heaters and suitable vibration isolators. Coils shall be copper plate fins, and mechanically bonded to copper tubes. Unit shall have five-year warranty.

- F. Fans and Motors: Indoor air fan shall be of the forward-curved, centrifugal, belt drive type. Motor pulley shall be adjustable pitch. The outdoor air fan shall be of the propeller type, direct drive. See Mechanical General Conditions for additional motor requirements.
- G. Unit cabinet shall be constructed of 20-gauge steel, bonderized and coated with baked enamel. Cabinet interior shall be insulated with 1" thick, 1# density foil faced glass fiber insulation. A stainless steel condensate drain shall be provided. Cabinet panels shall be easily removable for service access to all operating components.
- H. Electronic Ignition System: Pilot is lit each time thermostat calls for heat. When thermostat is satisfied, both pilot and main burner are extinguished. Burner connection to be propane type only.
- I. Accessories: Provide roof curb, differential enthalpy economizer, electronic programmable thermostat, field supplied motor and drive, and compressor cycle delay.

2.5 CEILING EXHAUST FANS

- A. Ceiling mounted exhaust fans shall be of the centrifugal direct drive type. The fan housing shall be constructed of heavy gauge galvanized steel. The housing interior shall be lined with 1/2" acoustical insulation. The outlet duct collar shall include an aluminum backdraft damper and shall be adaptable for horizontal or vertical discharge. Grilles shall be non-yellowing.
- B. The access for wiring shall be external. The motor disconnect shall be internal and of the plug in type. The motor shall be mounted on vibration isolators. The fan wheel(s) shall be of the forward curved centrifugal type and dynamically balanced.
- C. All fans shall bear the AMCA Certified Ratings Seal for sound and air performance and shall be U.L. Listed and C.S.A. Approved.

PART 3 - EXECUTION

3.1 METAL AND DUCTWORK INSTALLATION

- A. Duct shall be suspended in accordance with SMACNA guidelines from structural parts of the building.
- B. For ducts over 36" wide, support shall be trapeze hangers consisting of hanger rods with double nuts and angle iron, California Uniform Mechanical Code, and Fee and Mason Fig. 255L beam clamps or appropriate equal. Ducts shall be secured against lateral displacement at every third hanger. Where wide ducts obstruct the suspended ceiling hangers, a trapeze of angle of size suitable for the span shall be constructed below the duct for ceiling suspension. All hangers and supports in central office areas shall have rounded edges.

- C. Ducts 19" wide and larger shall be cross-broken or beaded on all four sides. Elbows shall be cross-broken. Beading is not acceptable.
- D. All changes in direction of ducts shall be made with an inside radius not less than the width of the duct.
- E. Changes in shape of ducts shall be made at small angles, sides of ducts shall diverge or converge at an angle not greater than 15° whenever possible or as shown on the plans.
- F. All branch take offs, including individual discharge outlets, shall have volume dampers.
- G. All square turn elbows greater than 45° shall have turning vanes and shall be cross-crimped.
- H. All seams and transverse joints on all ducts shall be made airtight with Vulkem polyurethane sealant. Duct tape will not be accepted. Clean duct of oil or other foreign substance prior to application.
- I. All round and rectangular ducts shall be installed in the locations and the sizes shown on the drawings. Should it be found that any necessary duct dimensions have been omitted from the drawings, the Contractor shall notify the Architect, who will supply the dimensions, and the Contractor shall then construct the ducts in accordance with these sizes. Should it be found impractical to install any duct of the exact sizes given, a duct of a different shape but having the same resistance shall be installed; the sizes of the substitute duct shall be approved by the Architect.
- J. All round and rectangular ducts shall be installed true to line and grade. All concealed horizontal ducts shall be installed to leave the greatest possible headroom under them unless for clearances of other work they need to be installed at an intermediate plane. Where necessary, changes of elevation in the ducts shall be made to secure this result, but not without approval of the Architect.
- K. All exposed round and rectangular duct, mixing dampers, grilles, etc., shall be thoroughly cleaned and free of dust and debris before and after installation. Ducts shall also be free from bends, scratches, and gaps.
- L. All round branch duct take-off connections to rectangular sheet metal duct shall be accomplished using a 45° take-off. Fitting size shall be same size of branch take-off duct.
- M. All duct openings in roof shall be provided with a minimum of 4" high curbs. The Contractor shall flash and counter flash all ducts where they pass through roof. All flashing and counter-flashing shall be No. 24 gauge galvanized iron, unless otherwise indicated on drawings. Where ducts pass through interior walls, or partitions, close visible opening around ducts with collars.
- N. All round and rectangular ductwork and plenums exposed to weather shall be sealed watertight with caulking conforming to the requirements of other Divisions.

- O. Ducts mounted on the roof shall be installed a minimum of 18" above the roof, unless shown otherwise on the plans.

3.2 CONTROLS

- A. All control wire and conduit, as required by the sequence of operation and as depicted on the control diagram, shall be installed by Division 15 in accordance with the requirements of Division 16.
- B. Submittals shall be complete with detailed point to point connection wiring diagram, bill of material, written sequence of operation, and product data sheets properly hi-lighted showing the exact piece of equipment proposed to be provided.

3.3 REQUIREMENTS FOR ACCEPTANCE INSPECTION

- A. All of the following items must be completed prior to final inspections.
- B. Cleaning Equipment and Premises:
 - 1. Thoroughly clean all parts of the registers, grilles, and equipment. Exposed parts that are to be painted shall be thoroughly cleaned of cement, plaster and other materials and all oil and grease spots shall be removed. Such surfaces shall be carefully wiped and all cracks and corners scraped out.
 - 2. Exposed metal work shall be carefully brushed down with steel brushes to remove rust and other spots left smooth and clean.
 - 3. Electrical device covers shall not be installed until finish coat of paint is completed. Device handles and receptacles shall be covered and/or protected during the painting operation to preserve the original factory bright new finish.
- C. Operating Instruction and Service Manual: The Contractor shall carefully prepare three (3) operating instruction and service manuals for the entire system including all equipment, except Owner-furnished equipment. They shall be submitted for approval immediately upon completion of the work. Failure to submit for approval will delay final inspection and acceptance of the work by the Architect.

- 1. The following items together with any other necessary pertinent data shall be included in the manual. This is not complete and is to be used as a guide:

Manufacturer's Literature: Copy of manufacturer's instructions for operation and maintenance of all mechanical equipment, including replacement parts, lists and drawings. These brochures and any other required operating and service instructions shall be submitted to the Architect. The Contractor shall mark brochure literature indicating the model, sizes, capacities, curve operating points, etc., in a manner to clearly indicate the equipment installed. The Contractor shall remove all pages or sheets from the bulletins and catalogs that do not pertain to equipment installed on the project.

Oiling, lubrication and greasing data.

Complete electrical load data from operation test.

Test data on all equipment.

Belt sizes, types and lengths.

Serial numbers of all principal pieces of equipment.

Manufacturer's suppliers and subcontractors names and addresses and phone numbers.

Control diagram and written sequence of operation.

Written guarantee.

As-builts corrected and completed to date.

2. Written Instructions: Typewritten instructions of operation and maintenance of the system composed of operating instructions, maintenance instructions and a maintenance schedule.

- D. Operating instructions shall contain a brief description of the system. Adjustments requiring the technical knowledge of the service agency personnel shall not be included in the operating instructions. The fact such adjustments are required, however, shall be noted.
- E. Maintenance instructions shall list each item of equipment requiring inspection, lubrication or service and describe the performance of such maintenance.
- F. Maintenance schedule shall list each item of equipment, shall show the exact type of bearing on every component of each item of equipment, and shall show when each item of equipment should be inspected or serviced.
- G. If upon completion of the final inspection, review of the maintenance manuals and receipt of the "as-built" drawings, the list of required corrections is such that a re-inspection is required the contractor will be subject to a charge of Ninety Dollars (\$90.00) per hour for any additional time required.

3.4 IDENTIFICATION OF EQUIPMENT

- A. Mechanical Equipment: Identify all mechanical equipment with nameplate bearing equipment name and number, using 1-1/2" white Bakelite with 1/2" black letters permanently mounted by screws in a conspicuous place. All mechanical equipment shall be provided with a permanently affixed nameplate containing the model, manufacturer name, serial number, and capacity. Nameplate shall be engraved aluminum.

3.5 AIR SYSTEMS BALANCE

- A. General Requirements of Balancing Systems:

1. All work shall be done under direct supervision of a qualified independent test and balance contractor affiliated with AABC. This Contractor shall balance, adjust and test the air moving equipment and air distribution, and exhaust systems as herein specified.
2. All instruments used shall be accurately calibrated and maintained in good working order. Air balance and testing shall not begin until system has been completed and is in full working order. The Contractor shall put all systems and equipment into full operation and shall continue the operation of same during each working day of testing and balancing.

B. Submittals:

1. The Contractor shall submit submittal data for the testing and balancing of the air conditioning systems, in accordance with Section 15100, Paragraph 1.3.

C. Procedure of Balancing:

1. Upon the completion of the air conditioning system, the Contractor shall perform the following tests, compile the test data and submit complete test data to the District for evaluation and approval.
2. Testing Procedure: The Contractor shall perform the testing and balancing in accordance with AABC National Standards for Field Measurement and Instrumentation, Volume 2, or equal. All tests described in same shall be performed the same as if written herein.
3. In cooperation with the control manufacturer's representative, set and make adjustments of automatically operated controls as specified, indicated and/or noted.
4. As a part of the work of this contract, Contractor shall make any changes in the pulleys, belts and dampers required for correct balance at no additional cost to the Owner. Note: When complete and proper fan speed is determined, pulleys shall be provided such that belts ride in the position (low end of RPM range) and speed can be increased without changing pulley.
5. The manual volume damper's final position shall be marked with a permanent black marker.

D. Balance Report:

1. Reports shall be completed in the format used by the Associated Air Balance Council with additional data provided as required herein. Four copies of the balance report shall be provided for review by the project mechanical engineer. If any areas are determined to be unsatisfactory, these areas shall be rebalanced before final payment is made.

END OF SECTION 15100

SECTION 15200

PLUMBING

PART 1 - GENERAL

1.1 SCOPE

- A. The work includes furnishing and installing plumbing improvements and performing selective demolition as shown on the drawings and as specified in these special provisions.

1.2 SUBMITTALS

- A. Submittals shall conform to Section 01330 herein.

1.3 WORK INCLUDED

- A. Work included shall be as indicated on the drawings, including but not limited to the following:
 - 1. Sanitary Soil, Waste and Vent System.
 - 2. Domestic Hot and Cold Water Systems.
 - 3. Fuel Gas System.
 - 4. Plumbing Fixtures and Equipment.

1.4 CODES AND STANDARDS

- A. All work and materials shall be in full accordance with the latest rules and regulations of the State Fire Marshal, the Safety Orders of the Division of Industrial Safety, the National Electric Code, the Uniform Plumbing Code, Local Building Codes, the Uniform Mechanical Code, the Uniform Building Code, and other applicable codes, laws or regulations of bodies lawfully empowered and having jurisdiction over this project. Nothing in the plans or specifications is to be construed to permit work not conforming to these codes.

1.5 SEISMIC ANCHORAGE AND BRACING

- A. All equipment and piping shall be anchored or braced in accordance with the Uniform Building Code. The contractor is responsible for providing anchorage or bracing for all equipment regardless of whether detailed or shown on the plans. All equipment and ductwork supports not detailed as shown on the plans, requires approval of a registered structural engineer.
- B. All piping shall be supported or braced in accordance with the SMACNA Guidelines for "Seismic Restraints of Mechanical Systems and Plumbing Piping Systems", Superstrut

"Seismic Restraint System", Unistrut Corp. "Seismic Bracing For Ductwork, Conduit, and Cable Tray Supports", or B-Line "Seismic Restraints." If the pipe size exceeds the size included in these manuals, custom designed supports are required. All custom supports require the approval of a registered Structural Engineer. All shop drawings and calculations shall be submitted prior to fabrication.

- C. All flexibly mounted equipment shall be provided with seismic vibration isolation devices designed in accordance with the Uniform Building Code. All anchors and equipment connections shall be submitted. All seismic vibration isolation devices shall be submitted with structural calculations signed by a Registered Structural Engineer in the State of California.

1.6 CUTTING AND PATCHING

- A. Perform all cutting and fitting required for work of this section in rough construction of the building.
- B. All patching of finished construction of building shall be performed under the sections of specifications covering these materials. See Section 01731, Cutting and Patching.
- C. All cutting of concrete work by this Contractor shall be by core drilling or concrete saw. No cutting or coring shall be done without first obtaining the permission of the Engineer.

1.7 SELECTIVE DEMOLITION

- A. This section requires the selective removal and subsequent offsite disposal of the following:
 - 1. Portions of existing piping and plumbing fixtures.
 - 2. Occupancy: Conduct selective demolition work in manner that will minimize need for disruption of Owner's normal operations. Provide minimum of 48 hours advance notice to Owner of demolition activities that will affect Owner's normal operations.
 - 3. Protections: Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition work.
 - 4. Damages: Promptly repair damages caused to adjacent facilities by demolition work.
 - 5. Demolition: Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with project schedule and governing regulations.
 - 6. Disposal of Demolished Materials: Remove from building site debris, rubbish, and other materials resulting from demolition operations. Transport and legally dispose off site.

1.8 GENERAL

- A. Unless otherwise specified herein, all equipment and fixtures shall be installed as shown, in accordance with the manufacturer's recommendations.

- B. Workmanship: All labor shall be carefully skilled for this kind of work, thorough and first class in all respects and under the direction of a competent foreman.
- C. Special Note: Any work called for on plans shall be installed whether or not mentioned in these specifications.

1.9 DAMAGE BY LEAKS

- A. This Contractor shall be responsible for damage to the grounds, walks, roads, buildings, piping systems, electrical systems and their equipment and contents, caused by leaks in the piping systems being installed or having been installed herein. He shall repair at his expense all damage so caused.

1.10 EMERGENCY REPAIRS

- A. The Owner reserves the right to make emergency repairs as required to keep equipment in operation without relieving the Contractor of his responsibilities.

1.11 EXPLANATION AND PRECEDENCE OF DRAWINGS

- A. For purposes of clearness and legibility, drawings are essentially diagrammatic, and, although size and location of equipment are drawn to scale wherever possible, Contractor shall make use of all data in all the contract documents and shall verify this information at building site.
- B. The drawings indicate required size and points of termination of pipes, and suggest proper routes to conform to structure, avoid obstructions and preserve clearances. However, it is not intended that drawings indicate all necessary offsets, and it shall be the work of the Contractor to make the installation in such a manner as to conform to structure, avoid obstructions, preserve headroom and keep openings and passageways clear, without further instructions or cost to the Owner.
- C. It is intended that all apparatus be located symmetrical with architectural elements. Refer to architectural details in completing the correlating work.
- D. The contractor shall be fully informed regarding any and all peculiarities and limitations of the spaces available for the installation of all work and materials furnished and installed under the contract. The contractor shall exercise due and particular caution to determine that all parts of his work are made quickly and easily accessible.
- E. The Contractor shall study all drawings and specifications to determine any conflict with ordinances and statutes. Any errors or omissions shall be reported, and any changes shall be shown in the as-built drawings and the additional work performed at no cost to the Owner.
- F. Submittal of bid shall indicate the Contractor has examined the site and drawings and has included all required allowances in his bid. No allowance shall be made for any error resulting from Contractor's failure to visit job site and to review drawings, and bid shall

include costs for all required drawings and changes as outlined above, all at no cost to Owner.

1.12 SUPERVISION AND COOPERATION

- A. The work under this section shall be executed in cooperation with the work of other trades to prevent conflict or interference and to aid rapid completion of the overall project.

PART 2 - PRODUCTS

2.1 INSULATION

- A. All domestic hot water supply piping, recirculating piping, and condensate piping installed under this contract, shall be insulated with 1" thick Manville "Flame-Safe AP" Knauf, or equal, fiberglass pipe insulation with a maximum of 0.24K factor at 75°F temperature with tape closure system.
- B. The insulation shall be applied over clean, dry pipe with all joints butted firmly together and sealed with wide strip of like material.
- C. Cover fittings with molded fiberglass of segments of pipe insulation; finish cover of Manville, Zeston, Knauf, or equal, pre-molded plastic insulation fittings and bands at ends of fittings.
- D. Exposed drain and supply pipes below lavatories shall be insulated with Trap-Guard protection cover system. Cover shall be elastomeric insulation with Velcro closure PVC covers. Cover shall comply with all handicap code requirements.

2.2 FITTINGS AND PIPING

- A. Joints: Joints for hubless pipe and fittings shall conform to the manufacturer's installation instructions and local code requirements. Hubless couplings shall be composed of a stainless steel shield, clamp assembly and an elastomeric sealing sleeve conforming to CISPI 310. Joints for hub and spigot shall be installed with compression gaskets conforming to the requirements of ASTM C-564, or shall be installed with lead and oakum.
- B. Sanitary Waste & Vent: New waste and vent piping shall be Solid Core Schedule 40 DWV PVC or Schedule 40 DWV ABS ASTM 2751-96 standard. Cellular Core Piping will not be accepted. Minimum pipe size for toilet soil line shall be 4" diameter. Use of ABS plastic pipe shall conform with the UBC and IPC.
- C. All Domestic Water Piping: Above grade shall be type "L" copper tubing hard drawn with wrought copper solder sweat fittings. Where below grade and within 5' of building line, shall be type "K" copper tubing in single continuous length with polyethylene outer tubing.

- D. Gas Piping 2-1/2" and Smaller Above Grade: Schedule 40-A-120 black steel screwed pipe with black banded 150 lb. malleable iron fittings; 3" and larger shall be butt welded with factory-made wrought steel butt welding fittings. All gas piping and fittings exterior to the building shall be galvanized.

2.3 VALVES AND FITTINGS

- A. Ball valves 2" and smaller: Two-piece bronze body; sweat or threaded ends, chrome plated bronze ball; glass filled teflon seat; teflon packing and threaded packing nut; blowout-proof stem; 400 psig WOG. Nibco T/S BR, Milwaukee Valve, or equal.
- B. Stops: Heavy pattern brass chrome plated with 3/8" O.D. compression outlet, 1/2" I.P.S. inlet and riser to match application. Provide stuffing box lock-shield with loose key and shallow stainless steel escutcheon in all exposed public applications. Note: Valve must weigh no less than 6.5 ounces.
- C. Combination Pressure and Temperature Relief Valve: Bronze body, temperature and pressure actuated, stainless steel stem and spring, thermostat with non-metallic coating, test lever, suitable for 125 psig water working pressure at 240°F, sized for full BTUH input and operating pressure of equipment, with valve capacity on metal label. For equipment less than or equal to 200,000 BTUH input, provide AGA, U.L. or ASME listed and labeled valve. Provide ASME listed and labeled valve for larger equipment. Temperature and pressure relief valve shall be sized per AGA rating for BTUH input.
- D. Gas Shut-Off Valves 4" and smaller: Ball or eccentric plug valve, bronze or cast iron body, 2" and under threaded ends, 2-1/2" and over flanged ends, chrome plated bronze ball, bronze or nickel plated cast iron plug, TFE or Hycar seats and seals, lever handle, 175 psi W.O.G., U.L listed for use as natural gas shut-off. Crane 1228, Homestead 612, or equal.

2.4 CLEANOUTS

- A. Floor Cleanouts: J.R. Smith Fig. 4023, Zurn, or equal, with polished nickel bronze non-skid adjustable square top.

2.5 PLUMBING EQUIPMENT

- A. The equipment hereinafter described is to be furnished and installed complete by the Contractor. See "Equipment Schedule" on drawings for size, capacity and model number.

2.6 PLUMBING FIXTURES

- A. Reference is made to Crane Company, it is understood to mean that equivalent fixtures as manufactured by Elkay, American Standard Manufacturing Company, Kohler Company, Eljer, or approved equal, are acceptable if used throughout. Faucets by Symmons, equivalents by Zurn, T & S, Bradley, or approved equal, are acceptable. Equivalent toilet

seats by Beneke, Olsonite, or approved equal, are acceptable. Equivalent carrier, floor drains, etc. by Josam, Wade, Zurn, or approved equal, are acceptable.

PART 3 - EXECUTION

3.1 INSULATION INSTALLATION

- A. The insulation shall be applied after piping has been installed, tested, and approved and after pipes are in a clean, dry condition. All joints in insulation shall be butted firmly together and sealed with jacket lap strip.
- B. Fittings and valve bodies shall be insulated with mitered sections of pipe insulation for 3" and larger, and with Fiberglass OC-110 cement to a thickness equal to the adjoining pipe insulation for 2-1/2" and smaller. The fittings and valve bodies shall be finished with premolded PVC insulated fitting. Flanges and unions shall not be covered. Covering shall be neatly terminated on each end of screwed unions with insulating cement.
- C. Where the fiberglass insulation supports the weight of the pipe and at each floor, an inset of fiberglass 12" long, shall be installed between pipe and the hanger.

3.2 PIPE INSTALLATION

- A. No-Hub cast-iron Soil Pipe Institute Pamphlet #100 and the I.A.P.M.O. IS-6-75.
- B. Joints in copper tubing shall be made by first thoroughly cleaning the surface of the pipe and fittings, applying flux and sweating with 95-5 tin Antimony "soft-solder."
- C. Pipe shall be carefully cleaned before installation. The ends of threaded pipe shall be reamed out full size with a long taper reamer so as to be partially bell-mouthed and perfectly smooth.
- D. All sanitary sewers, storm drains and waste lines shall grade as indicated on drawings. The sections of the pipe shall be laid and fitted so that when completed the pipe will have smooth and uniform invert. Water shall not be allowed in the trenches while the pipes are being laid. Dirt, cement, or any other superfluous material of any description shall be carefully removed from the interior of the piping system as the work progresses. Constant inspection shall be made in pipe and fittings during and after all installation for possible fractures and failures caused by installation. Backfill so as not to disturb pipe or jointing.
- E. Flush out all water mains and sanitary drains with water so as to obtain free flow. Remove all obstructions and defects discovered. Remove and re-lay any sections and pipe already laid and found to be defective or which has had grade or joints disturbed.
- F. Openings in pipes, drains, fittings, apparatus and equipment shall be kept covered or plugged to prevent foreign substance from entering.
- G. Run piping free of traps, sags, or bends. Grade and valve for complete drainage and control of the system.

- H. All piping to be run to maintain headroom and keep passageways and openings clear. Run parallel and straight with adjacent walls or ceilings to present a uniform appearance.
- I. All piping, except where noted otherwise on plans, shall be concealed in walls or above ceilings.
- J. Bending or forcing of pipe will not be allowed. Use fittings for all offsets or changes in alignment of piping.
- K. Proper provision shall be made for expansion and contraction by means of fittings and anchors and supports of all piping.
- L. Street elbows, bushings and long screw fittings will not be allowed.
- M. PDI sized water hammer arrestors shall be installed at the supply to each self-closing water faucet and flush valve.
- N. Pre-set air chamber shall be installed at the supply to each water faucet.
- O. Unions shall be installed after each screw-type valve, connections for all equipment, appliances and as required for erection and maintenance. No unions shall be installed in a concealed location.
- P. Install isolation unions on all connections between dissimilar metals (galvanized steel, black steel to copper).
- Q. No holes for pipe or equipment will be allowed in any structural members without written consent of the Architect. Where pipes are to pass through or interfere with any member, or where notching, boring or cutting of the structure is necessary, the work shall be done by the Contractor as directed by the Architect.
- R. The Contractor shall, at a time in advance of the work, coordinate with other disciplines as to his requirements for openings, recesses, and chases in the walls, partitions, or framing. Should furnishing this information be neglected, delayed, or incorrect and additional cutting is found to be required, the costs of same shall be charged to the Contractor.
- S. Sleeves through foundation walls shall be standard weight black steel pipe, flush with walls and two pipe sizes larger than the pipe passing through. Sleeves shall be caulked with oakum to within 1" of the wall lines and then completely filled with an approved bitumastic compound. Sleeves for piping through masonry wall above grade or floor or through floors shall be #10 gauge galvanized sheet steel and shall extend completely through the walls, or floor finishing flush on both sides. Sleeves shall be 1/2" larger than the pipe passing through with oakum caulking to make opening airtight. Sleeves through concrete firewalls or floors shall be packed with suitable non-combustible material. Provide and install polished chromium plate brass floor ceiling on wall plates for all pipes, exposed in finished portions of the buildings.
- T. All scaled and figured dimensions are approximate and are given for estimate purposes only. Before proceeding with any work, this Contractor shall carefully check and verify

all dimensions, sizes, etc., and shall assume full responsibility for the installation with respect to other parts of the equipment, and to the structure.

- U. Any minor changes in work, which has not been installed, shall be made by this Contractor without additional compensation, except changes that are caused by architectural revisions that increase or decrease the size of the materials specified or indicated on the drawings.
- V. This Contractor shall submit an estimate of the cost of or credit for such changes he does not consider of a minor nature and shall proceed only upon the written authority of the Architect.
- W. All piping shall be isolated from other piping, any part of the building, framing, conduit, etc., with 1" strips of hair felt or pipe isolators.
- X. Coordinate all sanitary vents through roof with HVAC equipment. Terminate all vents at least 10'-0" from any outside air intakes.

3.3 FIXTURE INSTALLATION

- A. All plumbing fixtures shall be bedded and caulked along joint at walls, countertops, and other intersecting surfaces with Vulkem white silicone.
- B. Plumbing fixture trim and exposed supplies and waste shall be brass with polished chrome plated finish. Individual loose key stops, or, so specified, screw driver stops, shall be provided for all supplies, and unless integral with valves or faucets, unless otherwise approved by Architect, shall be mounted under the fixture. Exposed supplies and wastes through walls shall be provided with polished chrome plated cast brass wall escutcheons.
- C. Fixtures with hangers or supporting arms shall have hangers or arms securely mounted on a 1/4" thick x 6" wide steel wall plate which shall extend at least one stud beyond the first and last fixture mounting points. Concealed arm assemblies shall be attached to plates by four 3/8" x 1-1/4" steel bolts and nuts, and hangers and exposed arms by 5/16" minimum full thread steel studs and jamb nuts. Plates shall be drilled and tapped at the time of fixture installation.
- D. Wall plates shall be recessed flush with studs and shall be securely attached to each stud crossed. In steel stud construction, a 1-1/2" x 18" long furring channel shall be attached to each notched stud with fillet welds 1" long on 6" centers front and back. Plates shall be continuous fillet welded at both top and bottom to each furring channel.

3.4 TESTS AND ADJUSTMENTS

- A. No piping work, fixtures, or equipment shall be concealed or covered until inspected and approved by the Engineer, who shall be notified when the work is ready for inspection. All work shall be completely installed, tested as required by this section and the State Ordinances and State Safety Orders, and shall be leak-tight before inspection is requested. All tests shall be repeated upon request to the satisfaction of those making the inspection.

- B. Piping tests shall be made with the medium and under pressure listed below. Use a calibrated Bristol Pressure Recorder on all tests. Recorder range shall be 0 - 300 pounds or required range for specific test.

Type of System	Gauge Pressure (Lbs. per sq. inch, gauge)	Test Medium
Soil, Waste, Vent Rainwater leaders Storm Drainage Piping Within Building	Minimum of 5 psi for each joint, for duration of test with no loss in pressure.	Water
Fuel Gas	50 PSI	Compressed Air
Domestic Water	150 PSI	Water

- C. Test pressure in pounds per square inch, gauge, are given as initial pressure to be applied to lines being tested, together with test medium.
- D. Tests are to be applied for a minimum period of twenty-four (24) hours and until tests are complete.
- E. Final pressures at the end of test period shall be no more nor less than that caused by expansion or contraction of the test medium due to temperature changes.

END OF SECTION 15200

SECTION 16010

BASIC ELECTRICAL REQUIREMENTS

PART - 1 GENERAL

1.1 RELATED SECTIONS

- A. Division 1- General Requirements

1.2 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.
- B. CCR Title 24 - California Building Standards Code
- C. NFPA 70B - Recommended Practice for Electrical Equipment Maintenance.
- D. NFPA 110 – Life Safety Code.
- E. UL – Underwriter Laboratories, Inc.

1.3 DEFINITIONS

- A. “Provide” Means furnish, install and connect unless otherwise described in specific instances.
- B. “Extend”, “Submit”, “Repair” and similar words means that the Contractor shall accomplish the action described.
- C. “Verify location” when noted for an item, means that the location of the item within the room is tentative and not necessarily as shown on the drawings. Contractor shall request the exact location of the item from the Owner’s representative at no additional cost to the Owner.

1.4 Controls Work: Work, regardless of voltage, which provides start-stop control for equipment, or which provides analog or digital communication between and among control devices and equipment.

- A. Power Work: Work which supplies operating power from distribution apparatus to equipment terminals, and from distribution apparatus to control panels.
- B. Submittals for Information: Submittals required in technical sections for record purposes. These submittals will not be returned to Contractor.

- C. Submittals for Review: Submittals required in technical sections for review and acceptance by Architect. These submittals will be processed as described in Section 01300.

1.5 PERFORMANCE REQUIREMENT

A. Branch Circuit Wiring

1. Branch wiring.

- a. Where branch wiring quantities for lighting and power circuits are not shown, determine quantity of #12 conductors to be included in branch conduits.
- b. Include separate neutral conductors where indicated or specified.
- c. Limit quantity of current carrying conductors in given branch conduit to 6.

2. Branch Conduit.

- a. Where branch conduit for lighting circuits is not shown, determine conduit routing and arrangements to achieve branch circuitry indicated.
- b. Conceal conduit in ceiling spaces and walls unless indicated.
- c. Do not terminate more than 6 conduits in a single junction or outlet box unless indicated.

1.6 SUBMITTALS

A. Submit under provisions of Section 01300.

- 1. Wiring Diagrams: Where required in individual sections, provide schematic, line-to-line type. Use standard symbols and arrange components in logical sequence. Include suitable legend or functional guide. Number all terminals for external wiring connections.

B. Within thirty (30) days after award of contract, submit six (6) sets of required data. Do not install materials or equipment until acceptance has been obtained from Architect.

Before submitting, check submittals to ascertain that materials and equipment meet all requirements of plans and specifications and conform

to structural and space conditions. Mark submittal sheets covering several types or sizes of equipment to indicate clearly specific equipment being proposed.

1. Product Data: Catalog cuts or manufacturer's data sheets.
- C. Make submittals sufficiently complete to show compliance with specified features and standards.
- D. Coordinate Installation Drawings: Show all equipment in affected space or room. Indicate required workspace. Show plan view and elevations.

1.7 CLOSEOUT SUBMITTALS

- A. Provide in acceptable form, two (2) bound of operating manuals. Include:
 1. Where required in their respective technical sections for equipment and systems: Provide catalog cuts, functional description of operation, wiring diagrams, operating and maintenance instructions, parts lists and other data useful and necessary for complete maintenance and operation of equipment. For signal systems, also include system diagrams showing interconnections between various units, terminal markings at each unit, and schematic diagrams of each typical component, such as amplifier, power supply, tuner, etc.
 2. Correct copies of all submittals.
- B. Deliver operating manuals to Architect prior to final acceptance.

1.8 QUALITY ASSURANCE

- A. Where manufacturer's model or series numbers are specified or shown, these indicate generally acceptable types required. Furnish products, which comply with all requirements, as specified or shown.
- B. When more than one unit of the same class of equipment is required, provide units produced by a single manufacturer.
- C. Mounting heights specified and drawn are to center line of devices and equipment, except where noted otherwise.

1.9 REGULATORY REQUIREMENTS

- A. Conform to:
 1. California Code of Regulations, Title 24, Part 2, California Building

Code.

2. California Code of Regulations, Title 24, Part 3, California Electrical Code.
3. California Code of Regulations, Title 24, Part 6, California Energy Code.
4. California Code of Regulations, Title 24, Part 9, California Fire Code.
5. City of San Diego Electrical Code Supplement.

B. When conflict or variation exists among Codes, the most stringent shall govern.

1.10 DELIVERY, STORAGE AND HANDLING

A. Conform to NFPA 70B, Appendix I.

1.11 PROJECT SITE CONDITIONS

A. Propose rearrangement of work to meet project conditions, including changes to work specified in other sections. Prepare drawings showing proposed rearrangement when requested by Architect. Obtain permission of Architect before proceeding.

B. The location of existing concealed utility lines are shown in accordance with reference data which must be considered to be unreliable. The Bidder shall include adequate funds in his Bid to cover costs of connection regardless of their exact location.

1.12 INTERFACE WITH OTHER WORK

A. Coordinate size, shape and location of concrete equipment pads with dimensional characteristics and workspace requirements of equipment.

B. Review controls wiring submittals. Determine extent of power wiring requirements for equipment and control system. Compare power wiring requirements for equipment and control system with drawings. Notify Architect of discrepancies.

C. Connections to Equipment.

1. Determine connection requirements including point of connection, location of disconnect, access and clearance requirements.

2. Review manufacturer's installation instructions.
 3. Adjust rough-in locations, disconnect locations and conduit routing shown to accommodate equipment requirements.
- D. Anchor and restrain raceways and equipment in accordance with CCR Title 24 for seismic zone 4.

PART - 2 PRODUCTS

2.1 Materials

- A. Materials shall be new, in accordance with the specifications of the Institute of Electrical and Electronic Engineers (IEEE), National Electrical Manufacturer's Association (NEMA), National Fire Protection Association (NFPA), and the National Electrical Code (NEC), and shall have an Underwriter's Laboratories (UL) listing.

PART - 3 EXECUTION

3.1 General

- A. Demonstrate that all components of the work of this Division have been provided and that they operate in accordance with the Contract Documents.
- B. Notify the Owner's representative in writing, seven (7) days in advance of the tests to allow presence of Owner's representative.

3.2 Scheduling of Work and Interruptions to Electrical Systems

- A. All existing electrical systems such as telephone/data/LAN, fire alarm, surveillance TV, access control, intrusion detection, electric power and similar systems shall be maintained in operation at all times unless an interruption is necessary to the prosecution of the work.

3.3 Locations, Sizes, Routings and Clearances

- A. For the purpose of clearness and legibility, the drawings are essentially diagrammatic. The size and location of equipment is shown to scale wherever possible, but the Contractor shall make use of all the data in the Contract Documents, and shall verify such information. Contractor is responsible for the equipment provided by him fitting in the spaces available while maintaining required working, ventilation, and equipment maintenance access space. Exercise with care that such space is not infringed by the work of other divisions.

3.4 CLEANING

- A. After other work, such as sanding, painting, etc., has been completed, clean lighting fixtures, panelboards, switchboards and other electrical equipment to remove dust, dirt, grease, or other marks and leave work in clean condition.
- B. Cleaning shall be done as the work proceeds. Remove waste and debris to keep the site as clean as is practical.

END OF SECTION

SECTION 16020

MINOR ELECTRICAL DEMOLITION FOR REMODELING

PART - 1 GENERAL

1.1 SECTION INCLUDES

- A. Electrical demolition.

PART - 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. Materials and equipment for patching and extending work: As specified in individual Sections.

PART - 3 EXECUTION

3.1 EXAMINATION

- A. Verify that abandoned wiring and equipment serve only abandoned facilities.
- B. Demolition Drawings are based on casual field observation. Report discrepancies to Architect before disturbing existing installation.
- C. Beginning of demolition means installer accepts existing conditions.
- D. Examine panelboards and distribution equipment affected by the work. Report deficiencies to Architect.

3.2 PREPARATION

- A. Protect existing work, which is to remain in place, to be re-used, or to remain property of Owner.
- B. Protect existing services and utilities.
- C. Disconnect electrical systems in walls, floors, and ceilings scheduled for removal.
- D. Provide temporary wiring and connections to maintain existing circuits in service during construction.
- E. When work must be performed on energized or circuits, use personnel experienced in such operations.

- F. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections.
- G. Existing Fire Alarm System: Maintain existing system in service until new system is accepted. Disable system only to make switchovers and connections. Notify contracting officer at least 24 hours before partially or completely disabling system. minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.

3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Remove, relocate, and extend existing installations to accommodate new construction.
- B. Remove abandoned wiring to source of supply.
- C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- D. Disconnect abandoned outlets and remove devices. Remove abandoned outlet boxes if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets, which are not removed.
- E. Disconnect and remove electrical devices and equipment servicing utilization equipment that has been removed.
- F. Disconnect and remove abandoned luminaries. Remove brackets, stems, hangers, and other accessories.
- G. Repair adjacent construction and finishes damaged during demolition and extension work.
- H. Maintain access to existing electrical installations, which remain active. Modify installation or provide access panel as appropriate.
- I. Maintain continuity of circuits, which remain in service.

3.4 CLEANING AND REPAIR

- A. Clean existing materials and equipment, which remain or are to be reused. Report damage or defects to Contracting officer.

END OF SECTION

SECTION 16050

BASIC ELECTRICAL MATERIALS AND METHODS

PART - 1 GENERAL

1.1 SECTION INCLUDES

- A. Scope of Work: The work includes furnishing and installing Basic Electrical requirements, and providing other related work and materials as shown on the drawings and as specified in these Special Provisions.
- B. Grounding and bonding.
- C. Hangers and supports.
- D. Electrical identification.

1.2 RELATED SECTIONS

- A. Section 09900 - Painting.

1.3 REFERENCES

- A. NECA - National Electrical Contractors Association.

1.4 PERFORMANCE REQUIREMENT

- A. Grounding System Resistance: 25 ohms for secondary systems, 5 ohms for primary systems.
- B. Hangers and Supports: Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products. For empty conduits, include weight of 4 type XHHW wires of maximum permissible size.
- C. Perform drilling, cutting, and patching of the general construction work whether existing or new. Which may be required for the installation. Patch with the same materials, workmanship and finish as the original work and accurately match all surrounding work. Such work shall be done by a craftman accredited in the applicable trade and be acceptable to the Owner's representative.

1.5 CLOSEOUT SUBMITTALS

- A. Accurately record actual locations of grounding electrodes on project

record documents.

1.6 QUALITY ASSURANCE

- A. Furnish products listed and classified by Underwriters Laboratories, Inc., as suitable for purposes specified and shown.

PART - 2 PRODUCTS

2.1 GROUNDING AND BONDING

- A. Mechanical Connectors.
 - 1. Material: Bronze.

2.2 HANGERS AND SUPPORTS

- A. Materials and Finishes: Provide adequate corrosion resistance.
- B. Anchors and Fasteners:
 - 1. Concrete Structural Elements: Use precast insert system, expansion anchors and preset inserts.
 - 2. Concrete Surfaces: Use self-drilling anchors and expansion anchors.
 - 3. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts and hollow wall fasteners.
 - 4. Solid Masonry Walls: Use expansion anchors.
 - 5. Sheet Metal: Use sheet metal screws and spring steel clips.
 - 6. Wood Elements: Use wood screws.
- C. Steel Channel.
 - 1. Manufacturer:
 - a. B-Line
 - b. Superstrut
 - c. Unistrut
 - d. Substitutions: Permitted.

2. Description: Painted steel.

2.3 ELECTRICAL IDENTIFICATION

A. Nameplates and Labels.

1. Nameplate shall be laminated black-white-black backlite or phenolic plastic with lettering engraved through the outer covering except where specifically described otherwise (white letters on red background for emergency power system). Affix with small self-tapping cadmium plated machine screws appropriate to the purpose. Inscribe as indicate on drawings or herein. If not indicate, the inscription should describe the equipment served.
2. Locations:
 - a. Electrical distribution and control equipment enclosure.
 - b. Light switches not in sight of fixtures they control.
3. Letter Size:
 - a. Use 1/4-inch letters for equipment designations.
 - b. Use 3/16-inch letters for subsidiary information.
4. Legend
 - a. Panelboards, Identify equipment designation, voltage rating and source.
 - b. Individual Circuit Breakers, Enclosed Switches, and Motor Starters: Identify load served and source of supply.
 - c. Light Switches Not in Sight of Fixtures They Control: Identify location of light fixtures controlled.
 - d. Communication Cabinets: Identify system and designation.
5. Labels: Embossed adhesive tape, with 3/16-inch white letters on black background. Use only for identification of circuit numbers for individual receptacles.

B. Wire and Cable Markers.

1. Locations: Each conductor at panelboard gutters, pull boxes, outlet and junction boxes, and each load connection.

2. Legend:
 - a. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.

C. Conduit Markers

1. Description: Plastic tape or paint.
2. Location: Furnish markers for each length of conduit.
3. Color:
 - a. 208 Volt System: Blue.
 - b. Fire Alarm System: Red.
 - c. Voice/Data Systems: White
 - d. Grounding System: Green

D. Pull Rope Markers.

1. Description: Cloth, vinyl, or paper with vinyl overlay.
2. Location: Each end of pull rope.
3. Emergency Sources
 - a. Description: Engraved three layer laminated plastic; one-inch high white letters on red background.
 - b. Location: Service entrance equipment.
 - c. Legend: Type and location of on-site emergency power source(s)
4. Grounding
 - a. Description: Engraved three layer laminated plastic; one-inch high white letters on green background.
 - b. Location: Grounding location for emergency source grounded circuit conductor connected to grounding electrode conductor remote from emergency source.
 - c. Legend: Emergency and normal sources connected at that location.

PART - 3 EXECUTION

3.1 INSTALLATION

- A. Install Products in accordance with manufacturer's instructions.
- B. Grounding and Bonding.
 - 1. Provide bonding to meet Regulatory Requirements.
 - 2. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.
- C. Hangers and Supports.
 - 1. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".
 - 2. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.
 - 3. Obtain permission from Architect before drilling or cutting structural members.
 - 4. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
 - 5. Install surface mounted cabinets and panelboards with minimum of four anchors.
 - 6. In wet and damp locations use steel channel supports to stand cabinets and panelboards one inch off wall.
- D. Electrical Identification.
 - 1. Install nameplate parallel to equipment lines.
 - 2. Secure nameplate to equipment front using screws or rivets.
 - 3. Secure nameplate to inside surface of door on panelboard that is recessed in finished locations.
 - 4. Color code conductors at accessible location.

- a. 208Y/120 volt systems: one black, one red, one blue, one white (neutral).
 - b. Use wire with insulation of required color. For sizes of wire not available in specified colors, use self-adhesive wrap around markers.
 - c. Make color coding for signal system such as fire alarm, intercommunication, etc., in accordance with programs or schedules prepared by the equipment manufacturer.
5. Use same color throughout a given system for any signal or control wires performing the same function.
 6. Mark outside of cover plates of junction boxes installed in exposed or accessible ceilings to identify circuits present with black permanent marker. For signal systems, identify system by name.

3.2 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.
- B. At completion of job, check voltage at several points of utilization on the system. Energize all loads installed.

END OF SECTION

SECTION 16120
CONDUCTORS AND CABLE

PART - 1 GENERAL

1.1 SECTION INCLUDES

- A. Building wire and cable.
- B. Wiring connectors and connections.

1.2 RELATED SECTIONS

- A. Section 16050 – Basic Electrical Materials and Methods.
- B. Section 16130 – Raceway and Boxes.

1.3 REFERENCES

- A. ANSI/NFPA 70 – National Electrical Code.

1.4 SUBMITTALS

- A. Test Reports: Indicate procedures, values obtained and manufacturer's recommended values.
 - 1. Torque measurements.
 - 2. Insulation resistance tests.

1.5 QUALITY ASSURANCE

- A. Furnish products listed and classified by Underwriters Laboratories, Inc., as suitable for purposes specified and shown.
- B. Firm regularly engaged manufacture of electrical wire and cable products of types, sizes, and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.

1.6 PROJECT CONDITIONS

- A. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet Project Conditions.
- B. Where wire and cable routing is not shown, and destination only is

indicated, determine exact routing and lengths required.

PART - 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Okonite, General Cable, Cyprus-Rome, Pirelli, Southwire

2.2 BUILDING WIRE AND CABLE

- A. Description: Single conductor insulated wire.
- B. Conductor: Copper.
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation: ANSI/NFPA 70; Type XHHW-2 insulation for feeders and branch circuits larger than #2 AWG; Type THHN/THWN insulation for feeders and branch circuits #2 AWG and smaller.

2.3 METAL CLAD CABLE

- A. NFPA 70, Type MC.
- B. Conductor: Copper.
- C. Insulation: 600V, thermoplastic.
- D. Armor Material: Steel.

2.4 WIRING CONNECTORS

- A. Spring wire connectors: Corrosion-resistant, live-action spring in insulated shell, rated 105° C.
- B. Compression connectors and lugs: Circumferential (non-indenter) type.

PART - 3 EXECUTION

3.1 INSTALLATION

- A. Install products in accordance with manufacturers instructions.
- B. Use solid conductor for feeders and branch circuits 10 AWG and smaller.
- C. Use conductor not smaller than 12 AWG for power and lighting circuits.
- D. Pull all conductors into raceway at same time. Do not use mechanical means to pull conductors #8 AWG and smaller.

- E. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
- F. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- G. Clean conductor surfaces before installing lugs and connectors.
- H. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
- I. Use compression connectors for conductor splices and taps, 6 AWG and larger. Use compression tool designed for the size and type of connector being compressed. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.
- J. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 8 AWG and smaller.
- K. Make splices in wet locations watertight.
- L. Do not use metal clad cable above non-accessible ceilings, in exterior locations, or where exposed to view except in electrical rooms.
- M. Support metal clad cables above accessible ceilings using clips or cable ties. Do not rest cables on ceiling panels.
- N. Do not support metal clad cables from cable tray, from mechanical ducts or equipment, or from ceiling support wires.

3.2 INTERFACE WITH OTHER PRODUCTS

- A. Identify and color code wire and cable under provisions of Section 16050.
- B. Identify each conductor with its circuit number or other designation indicated on Drawing.
- C. Make connections to equipment and devices so that phase conductors are in the same relative position and phase sequence runs left to right, front to rear, or top to bottom.

3.3 FIELD QUALITY CONTROL

- A. Inspect wire and cable for physical damage and proper connection.
- B. Verify continuity of each branch circuit conductor.

3.4 SITE TESTS

- A. Measure tightness of bolted connections for sizes #4 AWG and larger, and compare torque measurements with manufacturer's recommended values.
- B. Perform insulation resistance tests on branch circuit and feeder conductors #8 AWG and larger.

END OF SECTION

SECTION 16130
RACEWAYS AND BOXES

PART - 1 GENERAL

1.1 SECTION INCLUDES

- A. Conduit.
- B. Boxes.
- C. Pull line.

1.2 RELATED SECTIONS

- A. Section 16050 - Basic Materials and Methods: Grounding and bonding; electrical identification.
- B. Section 16140 - Wiring Devices.

1.3 PROJECT CONDITIONS

- A. Verify routing and termination locations of conduit prior to rough in.
- B. Conduit routing is shown on drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

1.4 REFERENCES

- A. ANSI C80.3 - Electrical metallic tubing, zinc coated.
- B. ANSI/NEMA FB 1 - Fittings, cast metal boxes and conduit bodies for conduit and cable assemblies.
- C. NECA "Standard of Installation."
- D. NEMA OS 1 - Sheet-steel outlet boxes, device boxes, covers and box supports.
- E. NEMA 250 - Enclosures for electrical equipment (1000 volts maximum).
- F. NFPA 70 - National Electrical Code.

1.5 DEFINITIONS

- A. The word "conduit" when used in contract documents is an all-inclusive term meaning raceways of conduit, tubing and duct.

1.6 SUBMITTALS FOR RECORD

- A. Submit under provisions of Section 01300.
- B. Certification: Installer qualifications.

1.7 CLOSEOUT SUBMITTALS

- A. Accurately record actual routing of feeder conduits.
- B. Record actual locations and mounting heights of outlet, pull and junction boxes larger than 4 11/16 inches square, on project record documents.

1.8 QUALITY ASSURANCE

- A. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.9 QUALIFICATIONS

- A. Document final locations, connection points and mounting heights where at variance with plans. Distribute documentation to affected Subcontractors and to Architect.

PART - 2 PRODUCTS

2.1 METAL CONDUIT

- A. Intermediate Metal Conduit (IMC): Rigid steel.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; threaded all steel fittings.
 - 1. Connectors and couplings: Threaded steel.
 - 2. Conduit Bodies: Cast Aluminum.

2.2 FLEXIBLE METAL CONDUIT

- A. Description: Interlocked steel construction.
- B. Fittings: ANSI/NEMA FB 1.

2.3 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

- A. Description: Interlocked steel construction with PVC jacket.
- B. Fitting: ANSI C80.3; galvanized tubing.

2.4 ELECTRICAL METALLIC TUBING (EMT)

- A. Description: ANSI C80.3; galvanized tubing.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1:
 - 1. Connectors and Couplings: Steel, setscrew or compression type.
 - 2. Conduit Bodies: Cast Aluminum.

2.5 DUCT SEALING COMPOUND

- A. Manufacturers:
 - 1. Blackburn.
 - 2. IlSCO.
 - 3. O-Z/Gedney.
- B. Description: Pliable, non-hardening, paintable, service temperature to --40°F.

2.6 OUTLET BOXES

- A. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
 - 1. Luminaire and Equipment Supporting Boxes: Minimum 4" square by 1-1/2 inches deep, rated for weight of equipment supported; include 1/2 inch male fixture studs where required.
 - 2. Concrete Ceiling Boxes: 4-inch octagon.
- B. Wall Plates for Finished Areas: As specified in Section 16140.

2.7 PULL AND JUNCTION BOXES

- A. Sheet Metal Boxes: NEMA OS 1, galvanized steel, minimum 4 inches square by 1 1/2 inches deep.

PART - 3 EXECUTION

3.1 EXAMINATION

- A. Verify locations of floor boxes and outlets prior to rough-in.

3.2 INSTALLATION

- A. Conduit.
 - 1. Install conduit in accordance with NECA "Standard of Installation"

and manufacturer's instructions.

2. Minimum Size: 1/2 inch unless otherwise specified.
3. Exposed Wet Locations: Use rigid steel between finish grade and 8 feet above finish grade. Use EMT above 8 feet.
4. Exposed Dry and Damp Locations;
 - a. Use rigid steel and intermediate metal conduit below switch height and electrical metallic tubing above switch height, except that electrical metallic tubing may be used below switch height in designated equipment rooms and closets, utility chases and similar locations.
5. Concealed Locations:
 - a. Furred, elevated underfloor, ceiling spaces and stud and masonry walls: Use electrical metallic tubing.
 - b. Concrete Walls: Use electrical metallic tubing, and Schedule 40 PVC , and electrical non-metallic tubing.
 - c. Connections to Lighting Fixtures in Accessible Ceilings: Use flexible conduit.
6. Equipment Connections:
 - a. Damp and Wet Locations and For Connections to Liquid-Handling Equipment in Dry Locations: Use liquid-tight flexible conduit.
 - b. Equipment for Dry Systems in Dry Locations: Use flexible conduit.
7. Do not combine individual homeruns in common conduit.
8. Conduit Supports:
 - a. Arrange supports to prevent misalignment during wiring installation.
 - b. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers and split hangers.
 - c. Group related conduits; support using conduit track. Construct rack using steel channel.

- d. Fasten conduit supports to building structure and surfaces under provisions of Section 16050.
 - e. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
 - f. Do not attach conduit to ceiling support wires.
9. Conduit Routing.
- a. Arrange conduit to maintain headroom and present neat appearance.
 - b. Route exposed conduit parallel and perpendicular to walls.
 - c. Route conduits in accessible ceilings to clear access openings.
 - d. Maintain adequate clearance between conduit and piping.
 - e. Maintain 12 inch clearance between conduit and surfaces with temperatures exceeding 104 degrees F.
10. Cut conduit square using saw or pipecutter; de-burr cut ends.
11. Use conduit hubs to fasten conduit to cast boxes.
12. Install no more than equivalent of three 90-degree bends between boxes.
13. Use conduit bodies to make sharp changes in direction, as around beams.
14. Provide suitable pull string in each empty conduit except sleeves and nipples.
15. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
16. Ground and bond conduit under provisions of Section 16050.
17. Identify conduit under provisions of Section 16050.
18. Provide insulated equipment ground conductor in flexible conduit.
19. Make conduit penetrations of exterior concrete or masonry walls below grade, and of floor slabs on fill below grade, watertight.
20. Termination of Conduit Stubs:

- a. Underground and Flush with Finish Floor: Use coupling and threaded plug.
- b. Above Floor: Use conduit bushing.
- c. Signal Systems: Use conduit bushing.

B. Boxes:

1. Install boxes in accordance with NECA "Standard of Installation".
2. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.
3. Set wall mounted boxes at elevations to accommodate mounting heights indicated.
4. Electrical boxes are shown on drawings in approximate locations unless dimensioned. Adjust box location up to 10 feet if required to accommodate intended purpose.
5. Orient boxes to accommodate wiring devices oriented as specified in Section 16140.
6. Maintain headroom and present neat mechanical appearance.
7. Install pull boxes and junction boxes above ceilings and in unfinished areas only.
8. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.
9. Install boxes to preserve fire resistance rating of partitions and other elements.
10. mounting heights and locations of outlets mounted above counters, benches and backsplashes.
11. Locate outlet boxes to allow luminaires positioned as shown on reflected ceiling plan.
12. Align adjacent wall mounted outlet boxes for switches, thermostats and similar devices.
13. Use flush mounting outlet box in finishes areas.

14. Locate flush mounting box in masonry wall to require cutting or masonry unit corner only. Coordinate masonry cutting to achieve neat openings.
15. Do not install flush mounting box back-to-back in walls; provide minimum 6 inches separation. Provide minimum 24 inches separation in acoustic and fire rated walls.
16. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
17. Use stamped steel bridges to fasten flush mounting outlet box between studs.
18. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
19. Use adjustable steel channel fasteners for hung ceiling outlet box.
20. Do not fasten boxes to ceiling support wires.
21. Support boxes independently of conduit.
22. Use multi-gang box where more than one device is mounted together. Do not use sectional box.
23. Use cast outlet box in exterior locations and interior and wet locations.
24. Use masonry boxes with square corners in tile, marble, brick or concrete block.
25. Plaster Rings: Use for all concealed work except for masonry boxes; depth of rings as required to reach finished surfaces.

3.3 INTERFACE WITH OTHER PRODUCTS

A. Firestopping

1. Install conduit to preserve fire resistance rating of partitions and other elements.
2. Control size of openings in rated assemblies so that annular spaces are minimal.

B. Route conduit through roof openings for piping and ductwork or through suitable roof jack with pitch pocket.

- C. Seal in and around conduits penetrating cold [and warm] rooms with duct sealing compound.
- D. Coordinate installation of outlet box for products furnished under other Sections.
- E. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
- F. Coordinate mounting heights and locations of outlets mounted above counters, benches backsplashes.
- G. Position outlet boxes to locate luminaires as shown on reflected ceiling plan.
- H. Coordinate trimming of openings for outlet boxes in partitions to achieve neat, closely fitting openings.

3.4 ADJUSTING

- A. Adjusting floor box with finish flooring material.
- B. Adjust flush-mounting outlets to make front flush with finished wall material.
- C. Install knockout closure in unused box opening.

3.5 CLEANING

- A. Clean interior of boxes to remove duct, debris and other material.
- B. Clean exposed surfaces and restore finish.

END OF SECTION

SECTION 16140
WIRING DEVICES

PART - 1 GENERAL

1.1 SECTION INCLUDES

- A. Scope of Work: The work includes furnishing and installing Basic Electrical requirements, and providing other related work and materials as shown on the drawings and as specified in these Special Provisions.
- B. Wall switches.
- C. Receptacles.
- D. Device plates and decorative box covers.

1.2 RELATED SECTIONS

- A. Section 16130 Raceways and Boxes.

1.3 REFERENCES

- A. NECA - Standard of Installation.
- B. NEMA WD 1 - General Requirements for Wiring Devices.
- C. NEMA WD 6 - Wiring Device, Dimensional Requirements.

1.4 SUBMITTALS FOR REVIEW

- A. Section 01300 Submittals: Procedures for submittals.
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.

1.5 QUALITY ASSURANCE

- A. Provide Products listed and classified by Underwriters Laboratories, Inc., as suitable for the purpose specified and indicated.

PART - 2 PRODUCTS

2.1 WALL SWITCHES

- A. Manufacturers:

1. Arrow Hart 1990 Series.
 2. Bryant 4900 Series.
 3. Hubbell 1220 Series.
 4. Leviton 1221 Series.
 5. Substitutions: Permitted.
- B. Description: NEMA WD 1, Heavy Duty, AC only general use snap switch.
- C. Body and Handle: White plastic with toggle handle.
- D. Ratings:
1. Voltage: 120 277 volts, AC.
 2. Current: 20 amperes.

2.2 RECEPTACLES

- A. Duplex Convenience Receptacle, NEMA WD-6, Type 5-15R, Specification Grade:
1. Arrow Hart #5262.
 2. Bryant #5262.
 3. Hubbell #5262.
 4. Leviton #5262.
 5. Furnish receptacle with isolated ground terminal where shown on Drawings.
- B. GFCI Receptacle, NEMA WD-6, Type 5-15R, Specification Grade:
1. Arrow Hart #GF5242.
 2. Bryant #GFR52.
 3. Hubbell #GF-5262.
 4. Leviton #6598.
- C. Special Purpose Receptacle:
1. Manufacturer: Same as general purpose receptacle.

- 2. Configuration as shown on Drawings.
- D. Substitutions: Permitted.
- E. Color: white plastic for normal use; red when connected to stand-by power source.

2.3 WALL PLATES

- 1. Decorative Cover Plate.
 - a. Manufacturer: Same as wiring device.
 - b. Description: White
- 2. Weatherproof Cover Plate:
 - a. Manufacturer: Same as box.
 - b. Description: Gasketed cast metal with hinged gasketed device cover.

PART - 3 EXECUTION

3.1 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean debris from outlet boxes.

3.2 INSTALLATION

- A. Install in accordance with NECA "Standard of Installation," and manufacturer's instructions.
- B. Install devices plumb, level, and rigidly in place.
- C. Install switches with OFF position down, 2 inches to 8 inches from trim on strike side of door.
- D. Install receptacles with grounding pole in same relative location throughout project.
- E. Connect wiring device grounding terminal to outlet box with bonding jumper branch circuit equipment grounding conductor.
- F. Install decorative plates on switch, receptacle, and blank outlets in finished areas.

- G. Connect wiring devices by wrapping conductor around screw terminal.
- H. Use jumbo size plates for outlets installed in masonry walls.
- I. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.

3.3 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate locations of outlet boxes provided under Section 16130 to obtain mounting heights indicated on drawings.
- B. Identify receptacles under provisions of Section 16050.

3.4 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

3.5 CLEANING

- A. Clean exposed surfaces to remove splatters and restore finish.

END OF SECTION

SECTION 16145

LIGHTING CONTROLS DEVICES

PART - 1 GENERAL

1.1 SECTION INCLUDES

- A. Scope of Work: The work includes furnishing and installing lighting controls requirements, and providing other related work and materials as shown on the drawings and as specified in these Special Provisions.

1.2 RELATED SECTIONS

- A. Occupancy Sensor

1.3 System Description

- A. Automatic lighting shut down devices.

1.4 SUBMITTALS

- A. Manufacturer shall substantiate conformance to this specification by supplying the necessary documents, performance data and wiring diagrams. Any deviations to this specification must be clearly stated by letter and submitted.
- B. Submit a lighting control plan clearly marked by manufacturer showing proper product, location and orientation of each sensor.
- C. Submit any interconnection diagrams per major subsystem showing proper wiring.
- D. Submit standard catalog literature, which includes performance specifications indicating compliance to the specification.
- E. Catalog sheets must clearly state any load restrictions when used with electronic ballasts.

1.5 QUALITY ASSURANCE

- A. Furnish products listed and classified by Underwriter Laboratories, Inc as suitable for uses, which comply with all requirements, as specified or shown.

PART - 2 PRODUCTS

2.1 Occupancy Sensor

- A. The Watt Stopper, Hubble UNENCO, or Pre-Approved Equal: For pre-approval, provide all the information listed under section 1.4A and 1.4D a minimum of ten (10) working days prior to initial bid date.
- B. The listing of any manufacturer as "acceptable" does not imply automatic approval. It is the sole responsibility of the electrical contractor to ensure that any price quotations received and submittals made are for sensors, which meet or exceed the specifications included herein.
- C. All products shall be Watt Stopper product numbers:
 - 1. Ceiling sensors: WT-605, WT-600, WT-1105, WT-1100, WT-2205, WT-2200, WT-2250, WT-2255, W-500A, W-1000A, W-2000A, W-2000H, WPIR, DT-200, DT-205, CX-100, CX-105, CI-200, CI-205.
 - 2. Wall sensors: WI-300, WI-200, WS-120/277, WA-100, WD-170, WD-180, WD-270, WD-280.
 - 3. Power and Slave Packs: B120E-P, B277E-P, C120E-P, C277E-P, S120/277-P, AT-120, AT-277.
- D. Wall switch sensors shall be capable of detection of occupancy at desktop level up to 300 square feet, and gross motion up to 1000 square feet.
- E. Wall switch sensors shall accommodate loads from 0 to 800 watts at 120 volts; 0 to 1200 watts at 277 volts and shall have 180° coverage capability.
- F. Wall switch products shall utilize Zero Crossing Circuitry which increases relay life, protects from the effects of inrush current, and increases sensor's longevity.
- G. Wall switch sensors shall have no leakage current to load, in manual or in Auto/Off mode for safety purposes and shall have voltage drop protection.
- H. Where specified, wall switch sensors shall provide a field selectable option to convert sensor operation from automatic-ON to manual-ON.
- I. Where specified, vandal resistant wall switch sensors shall utilize a hard lens with a minimum 1.0mm thickness. Products utilizing a soft lens will not be considered.
- J. Passive infrared sensors shall utilize Pulse Count Processing and Digital Signature Analysis to respond only to those signals caused by human motion.
- K. Passive infrared sensors shall utilize mixed signal ASIC which provides high immunity to false triggering from RFI (hand-held radios) and EMI

(electrical noise on the line), superior performance, and greater reliability.

- L. Passive infrared sensors shall have a multiple segmented Lodif Fresnel lens, in a multiple-tier configuration, with grooves-in to eliminate dust and residue build-up.
- M. Where specified, passive infrared and dual technology sensors shall offer daylighting footcandle adjustment control and be able to accommodate dual level lighting.
- N. Dual technology sensors shall be corner mounted to avoid detection outside the controlled area when doors are left open.
- O. Dual technology sensors shall consist of passive infrared and ultrasonic technologies for occupancy detection. Products that react to noise or ambient sound shall not be considered.
- P. Ultrasonic sensors shall utilize Advanced Signal Processing to adjust the detection threshold dynamically to compensate for constantly changing levels of activity and air flow throughout controlled space.
- Q. Ultrasonic operating frequency shall be crystal controlled at 25 kHz within $\pm 0.005\%$ tolerance, 32 kHz within $\pm 0.002\%$ tolerance, or 40 kHz $\pm 0.002\%$ tolerance to assure reliable performance and eliminate sensor cross-talk. Sensors using multiple frequencies are not acceptable.
- R. All sensors shall be capable of operating normally with electronic ballasts, PL lamp systems and rated motor loads.
- S. Coverage of sensors shall remain constant after sensitivity control has been set. No automatic reduction shall occur in coverage due to the cycling of air conditioner or heating fans.
- T. All sensors shall have readily accessible, user adjustable settings for time delay and sensitivity. Settings shall be located on the sensor (not the control unit) and shall be recessed to limit tampering.
- U. In the event of failure, a bypass manual override shall be provided on each sensor. When bypass is utilized, lighting shall remain on constantly or control shall divert to a wall switch until sensor is replaced. This control shall be recessed to prevent tampering.
- V. All sensors shall provide an LED as a visual means of indication at all times to verify that motion is being detected during both testing and normal operation.
- W. Where specified, sensor shall have an internal additional isolated relay with Normally Open, Normally Closed and Common outputs for use with

HVAC control, Data Logging and other control options. Sensors utilizing separate components or specially modified units to achieve this function are not acceptable.

- X. All sensors shall have UL rated, 94V-0 plastic enclosures.
- Y. Outdoor motion sensors shall have UL 773A ratings. EWF outdoor sensors shall additionally have UL 1571 ratings.
- Z. EW-100 outdoor sensors shall cover up to 35 feet, with a field of view of 180 degrees. EW-200 outdoor sensors shall cover up to 52.5 feet, with a field of view of 270 degrees. EN-100 outdoor sensors shall cover up to 35 feet, with a field of view of 90 degrees. EN-200 outdoor sensors shall cover up to 100 feet, with a long range lens view.
- AA. EWF outdoor sensors shall include polycarbonate lamp holders that accept PAR 20 or 38 lamps up to 150W per lamp.
- BB. Outdoor sensors shall have an operating temperature range of -40°F to +130°F.
- CC. To ensure complete protection from weather elements and exposure, outdoor sensors shall be manufactured with precision double-shot tooling and contain internal silicon gaskets.

PART - 3 EXECUTION

3.1 General

- A. Demonstrate that all components of the work of this Division have been provided and that they operate in accordance with the Contract Documents.
- B. Notify the Owner's representative in writing, seven (7) days in advance of the tests to allow presence of Owner's representative.

3.2 Installation of Occupancy Sensors

- A. It shall be the contractor's responsibility to locate and aim sensory in the correct location required for complete and proper volumetric coverage within the range of coverage(s) of controlled areas per the manufacturer's recommendations. Rooms shall have ninety (90) to one hundred (100) percent coverage to completely cover the controlled area to accommodate all occupancy habits of single or multiple occupants at any location within the room(s). The locations and quantities of sensors shown on the drawings are diagrammatic and indicate only the rooms which are to be provided with sensors. The contractor shall provide additional sensors if

required to properly and completely cover the respective room.

- B. It is the contractor's responsibility to arrange a pre-installation meeting with the manufacturer's factory authorized representative, at the owner's facility, to verify placement of sensors and installation criteria.
- C. Proper judgment must be exercised in executing the installation so as to ensure the best possible installation in the available space and to overcome local difficulties due to space limitations or interference of structural components. The contractor shall also provide, at the owner's facility, the training necessary to familiarize the owner's personnel with the operation, use, adjustment, and problem solving diagnosis of the occupancy sensing devices and systems.

3.3 Installation of switches

- A. Install 1,2,3 switches in single gang box, with box mounted horizontally.
- B. Provide special backbox with one-piece faceplate for housing more than 4 switches
- C. Each relay shall be label identifying circuit controlled.

3.4 Wiring

- A. Provide leads for line and low voltage connections at least 10 inches long.
- B. Strap or clip wiring into position.
- C. Identify line voltage conductors of each relay and provide directory, attached to inside of cabinet door, correlating identification of conductor with area controlled by relay.
- D. Install low voltage wiring in conduit, in walls, above non-removable ceilings, and those areas where there are no ceilings. Use open wiring removable ceiling areas.

3.5 Installation

- A. Install the lighting control equipment according to manufacturer's written instruction.

3.6 CONTRACTOR COMMISSIONING

- A. The electrical contractor shall provide both the manufacturer and the electrical engineer with ten working days written notice of the scheduled commissioning date. Upon completion of the system fine tuning the factory authorized technician shall provide the proper training to the owner's

personnel in the adjustment and maintenance of the sensors.

- B. The electrical Contractor shall provide LTG-1A acceptance test to inspector during inspection otherwise final occupancy will not be issued.

END OF SECTION

SECTION 16500

LIGHTING

PART - 1 GENERAL

1.1 SECTION INCLUDES

- A. Luminaires and accessories.
- B. Fluorescent lamp emergency power supply.
- C. Lamps.
- D. Luminaire accessories.

1.2 REFERENCES

- A. ANSI C82.11 – High Frequency Florescent Lamp Ballasts.
- B. UL 935 – Fluorescent Lamp Ballasts.

1.3 PERFORMANCE REQUIREMENT

- A. Determine appropriate luminaire trim for each ceiling condition.

1.4 SUBMITTALS FOR REVIEW

- A. Shop Drawings: Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
- B. Product Data:
 - 1. Luminaires. Include photometric data.
 - 2. Lamps.
 - 3. Ballasts.
 - 4. Emergency power supplies.

1.5 QUALITY ASSURANCE

- A. Products: Listed and classified by Underwriters Laboratories, Inc., as suitable for the purpose specified and indicated.

PART - 2 PRODUCTS

2.1 LUMINAIRES

- A. Furnish Products as scheduled on drawings.
- B. Install ballasts and specified accessories at factory.
- C. Furnish fixtures complete with trim, plaster frames, yokes, end caps, joiners, hangers and other accessories required for specific installation conditions.
- D. Furnish tandem wired luminaires with pre-manufactured cables of the same manufacturer as affected luminaires.

2.2 FLUORESCENT BALLASTS

- A. Linear Fluorescent.
 - 1. Manufacturer:
 - a. Magnetek.
 - b. Motorola.
 - c. Osram/Sylvania.
 - d. Substitutions: Permitted.
 - 2. Description: UL 935, ANSI C82.11; Class P; parallel.
 - 3. Minimum Frequency: 20,000 Hz.
 - 4. Minimum Power Factor: .95
 - 5. Maximum Crest Factor; 1.7
 - 6. Maximum Harmonic Distortion; 20%.
 - 7. Minimum Ballast Factor: .85
 - 8. Source Quality Control: Certify fluorescent ballast design and construction by Certified Ballast Manufacturers, Inc.
- B. Compact Fluorescent: Electronic; as recommended by fixture manufacturer for specific lamp utilized.
- C. Provide ballast suitable for lamp specified.
- D. Voltage: Match luminaire Voltage.

2.3 FLUORESCENT LAMP EMERGENCY POWER SUPPLY

A. Description: Emergency battery power supply suitable for installation in ballast compartment of linear fluorescent luminaire or on mounting frame of compact fluorescent luminaire.

B. Rated Output:

Lamp Wattage	Minimum Initial Output
7	300 lumens
9	425 lumens
13	525 lumens
18	600 lumens
26	750 lumens
32-55	900 lumens

C. Battery: Sealed nickel cadmium type, rated for 7 year life.

D. Include TEST switch and AC ON indicator light [installed to be operable and visible from the outside of an assembled luminaire] [outside the luminaire ballast compartment] [for remote mounting].

2.4 LAMPS

A. Manufacturers:

1. General Electric.
2. Osram.
3. Philips.
4. Section Substitutions: Permitted.

B. Lamp Types: As scheduled for luminaire.

2.5 ACCESSORIES

A. Swivel Hangers: 45 degrees swivel from plumb.

PART - 3 EXECUTION

3.1 INSTALLATION

- A. Install suspended luminaires using pendants supported from swivel hangers. Provide pendant length required to suspend luminaire at indicated height.
- B. Support luminaires larger than 2 x 4 foot (size independent of ceiling framing.)
- C. Locate recessed ceiling luminaires as indicated on reflected ceiling plan.
- D. Install surface mounted luminaires plumb and adjust to align with building lines and with each other. Secure to prevent movement.
- E. Suspend Grid Ceilings: Support surface mounted luminaires on grid ceiling directly from building structure
- F. Install recessed luminaires to permit removal from below.
- G. Install recessed luminaires using accessories and firestopping materials to meet regulatory requirements for fire rating.
- H. Install clips to secure grid-supported luminaires in place.
- I. Install wall mounted luminaires at height as indicated on Drawings.
- J. Install accessories furnished with each luminaire.
- K. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions with luminaire.
- L. Bond products and metal accessories to branch circuit equipment grounding conductor.
- M. Install specified lamps in each luminaire.

3.2 INTERFACE WITH OTHER PRODUCTS

- A. Verify ceiling construction. Provide luminaire trim and accessories to meet specific installation conditions.

3.3 FIELD QUALITY CONTROL

- A. Operate each luminaire after installation and connection. Inspect for proper connection and operation.

3.4 ADJUSTING

- A. Position exit sign directional arrows as indicated.

3.5 CLEANING

- A. Clean electrical parts to remove conductive and deleterious materials.
- B. Remove dirt and debris from enclosures.
- C. Clean finishes and touch up damage.

3.6 PROTECTION OF FINISHED WORK

- A. Relamp luminaires that have failed lamps at Substantial Completion.

END OF SECTION

APPENDIX A

Notice of Exemption

DETERMINATION OF
ENVIRONMENTAL EXEMPTION

Pursuant to the California Environmental Quality Act (CEQA) and State CEQA Guidelines

Agency: City of San Diego

Project No.: 29431

Date: March 16, 2004

Action/Permit(s): Council Approval

Description of Activity: MISSION BEACH LIFEGUARD STATION: The addition of approximately 245 square-feet to an existing 4,423 square-foot, three-story lifeguard station. The addition includes remodeling of the main entry area and locker rooms (toilet and shower areas).

Location of Activity: 3141 Ocean Front Walk, within the Mission Beach Community planning area of the City and County of San Diego

(CHECK BOXES BELOW)

1. This activity is EXEMPT FROM CEQA pursuant to:
 - Section 15060(e) (3) of the State CEQA Guidelines (the activity is not a project as defined in Section 15378).
2. This project is EXEMPT FROM CEQA pursuant to State CEQA Guidelines Section checked below:

ARTICLE 19 of GUIDELINES CATEGORICAL EXEMPTIONS (Incomplete list)		ARTICLE 18 of GUIDELINES STATUTORY EXEMPTIONS (Incomplete list)	
Section	Short Name	Section	Short Name
<input checked="" type="checkbox"/> 15301	Existing Facilities	<input type="checkbox"/> 15261	Ongoing Project
<input type="checkbox"/> 15302	Replacement or Reconstruction	<input type="checkbox"/> 15262	Feasibility and Planning Studies
<input type="checkbox"/> 15303	New Construction or Conversion of Small Structures	<input type="checkbox"/> 15265	Adoption of Coastal Plans and Programs
<input type="checkbox"/> 15304	Minor Alterations to Land	<input type="checkbox"/> 15268	Ministerial Projects
<input type="checkbox"/> 15305	Minor Alteration in Land Use	<input type="checkbox"/> 15269	Emergency Projects
<input type="checkbox"/> 15306	Information Collection	<input type="checkbox"/> Other	
<input type="checkbox"/> 15311	Accessory Structures		
<input type="checkbox"/> 15312	Surplus Government Property Sales		
<input type="checkbox"/> 15315	Minor Land Divisions		
<input type="checkbox"/> 15317	Open Space Contracts or Easements		
<input type="checkbox"/> 15319	Annexation of Existing Facilities and Lots for Exempt Facilities		
<input type="checkbox"/> 15325	Transfer of Ownership of Interest in Land to Preserve Open Space		
<input type="checkbox"/> Other			

It is hereby certified that the City of San Diego has determined the above activity to be exempt:

Eileen Lower
 Eileen Lower
 Senior Planner
 Environmental Analysis Section

Distribution:

Exemption or Project file
 Vena Lewis, Project Manager, DSD

APPENDIX B

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 C

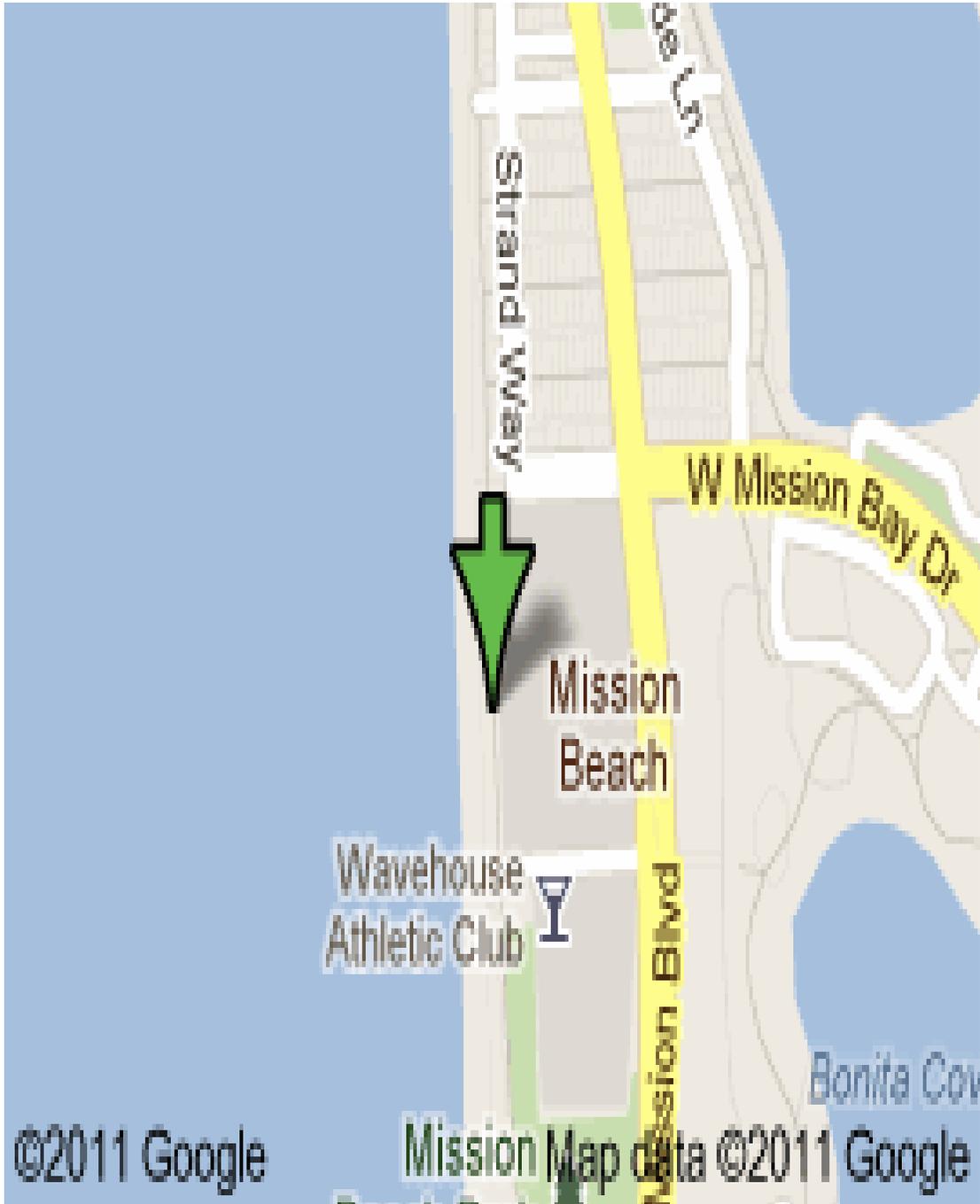
Sample City Invoice

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 D

Location Map

Location map



APPENDIX E

Hazardous Labels / Forms

INCIDENT/RELEASE ASSESSMENT FORM ¹

If you have an emergency, Call 911

Handlers of hazardous materials are required to report releases. The following is a tool to be used for assessing if a release is reportable. Additionally, a non-reportable release incident form is provided to document why a release is not reported (see back).

Questions for Incident Assessment:

	YES	NO
1. Was anyone killed or injured, or did they require medical care or admitted to a hospital for observation?	<input type="checkbox"/>	<input type="checkbox"/>
2. Did anyone, other than employees in the immediate area of the release, evacuate?	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the release cause off-site damage to public or private property?	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the release greater than or equal to a reportable quantity (RQ)?	<input type="checkbox"/>	<input type="checkbox"/>
5. Was there an uncontrolled or unpermitted release to the air?	<input type="checkbox"/>	<input type="checkbox"/>
6. Did an uncontrolled or unpermitted release escape secondary containment, or extend into any sewers, storm water conveyance systems, utility vaults and conduits, wetlands, waterways, public roads, or off site?	<input type="checkbox"/>	<input type="checkbox"/>
7. Will control, containment, decontamination, and/or clean up require the assistance of federal, state, county, or municipal response elements?	<input type="checkbox"/>	<input type="checkbox"/>
8. Was the release or threatened release involving an unknown material or contains an unknown hazardous constituent?	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the incident a threatened release (a condition creating a substantial probability of harm that requires immediate action to prevent, reduce, or mitigate damages to persons, property, or the environment)?	<input type="checkbox"/>	<input type="checkbox"/>
10. Is there an increased potential for secondary effects including fire, explosion, line rupture, equipment failure, or other outcomes that may endanger or cause exposure to employees, the general public, or the environment?	<input type="checkbox"/>	<input type="checkbox"/>

If the answer is YES to any of the above questions – report the release to the California Office of Emergency Services at 800-852-7550 and the local CUPA daytime: (619) 338-2284, after hours: (858) 565-5255. Note: other state and federal agencies may require notification depending on the circumstances.

Call 911 in an emergency

If all answers are NO, complete a Non Reportable Release Incident Form (page 2 of 2) and keep readily available. Documenting why a “no” response was made to each question will serve useful in the event questions are asked in the future, and to justify not reporting to an outside regulatory agency.

If in doubt, report the release.

¹ This document is a guide for accessing when hazardous materials release reporting is required by Chapter 6.95 of the California Health and Safety Code. It does not replace good judgment, Chapter 6.95, or other state or federal release reporting requirements.

NON REPORTABLE RELEASE INCIDENT FORM

1. RELEASE AND RESPONSE DESCRIPTION

Incident # _____

Date/Time Discovered	Date/Time Discharge	Discharge Stopped <input type="checkbox"/> Yes <input type="checkbox"/> No
Incident Date / Time:		
Incident Business / Site Name:		
Incident Address:		
Other Locators (Bldg, Room, Oil Field, Lease, Well #, GIS)		
Please describe the incident and indicate specific causes and area affected. Photos Attached?: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Indicate actions to be taken to prevent similar releases from occurring in the future.		

2. ADMINISTRATIVE INFORMATION

Supervisor in charge at time of incident:	Phone:
Contact Person:	Phone:

3. CHEMICAL INFORMATION

Chemical	Quantity <input type="checkbox"/> GAL <input type="checkbox"/> LBS <input type="checkbox"/> FT ³
Chemical	Quantity <input type="checkbox"/> GAL <input type="checkbox"/> LBS <input type="checkbox"/> FT ³
Chemical	Quantity <input type="checkbox"/> GAL <input type="checkbox"/> LBS <input type="checkbox"/> FT ³
Clean-Up Procedures & Timeline:	
Completed By:	Phone:
Print Name:	Title:

EMERGENCY RELEASE FOLLOW - UP NOTICE REPORTING FORM

A	BUSINESS NAME	FACILITY EMERGENCY CONTACT & PHONE NUMBER () -	
B	INCIDENT DATE MO DAY YR	TIME NOTIFIED OES (use 24 hr time)	OES CONTROL NO.
C	INCIDENT ADDRESS LOCATION	CITY / COMMUNITY	COUNTY ZIP
D	CHEMICAL OR TRADE NAME (print or type)		CAS Number
D	CHECK IF CHEMICAL IS LISTED IN 40 CFR 355, APPENDIX A <input type="checkbox"/>	CHECK IF RELEASE REQUIRES NOTIFICATION UNDER 42 U.S.C. Section 9603 (a) <input type="checkbox"/>	
D	PHYSICAL STATE CONTAINED <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> GAS	PHYSICAL STATE RELEASED <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> GAS	QUANTITY RELEASED
D	ENVIRONMENTAL CONTAMINATION <input type="checkbox"/> AIR <input type="checkbox"/> WATER <input type="checkbox"/> GROUND <input type="checkbox"/> OTHER	TIME OF RELEASE	DURATION OF RELEASE — DAYS — HOURS — MINUTES
E	ACTIONS TAKEN		
F	KNOWN OR ANTICIPATED HEALTH EFFECTS (Use the comments section for addition information)		
<input type="checkbox"/> ACUTE OR IMMEDIATE (explain) _____			
<input type="checkbox"/> CHRONIC OR DELAYED (explain) _____			
<input type="checkbox"/> NOTKNOWN (explain) _____			
G	ADVICE REGARDING MEDICAL ATTENTION NECESSARY FOR EXPOSED INDIVIDUALS		
H	COMMENTS (INDICATE SECTION (A - G) AND ITEM WITH COMMENTS OR ADDITIONAL INFORMATION)		
I	CERTIFICATION: I certify under penalty of law that I have personally examined and I am familiar with the information submitted and believe the submitted information is true, accurate, and complete.		
REPORTING FACILITY REPRESENTATIVE (print or type) _____			
SIGNATURE OF REPORTING FACILITY REPRESENTATIVE _____ DATE: _____			

EMERGENCY RELEASE FOLLOW-UP NOTICE REPORTING FORM INSTRUCTIONS

GENERAL INFORMATION:

Chapter 6.95 of Division 20 of the California Health and Safety Code requires that written emergency release follow-up notices prepared pursuant to 42 U.S.C. § 11004, be submitted using this reporting form. Non-permitted releases of reportable quantities of Extremely Hazardous Substances (listed in 40 CFR 355, appendix A) or of chemicals that require release reporting under section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [42 U.S.C. § 9603(a)] must be reported on the form, as soon as practicable, but no later than 30 days, following a release. The written follow-up report is required in addition to the verbal notification.

BASIC INSTRUCTIONS:

- The form, when filled out, reports follow-up information required by 42 U.S.C § 11004. Ensure that all information requested by the form is provided as completely as possible.
- If the incident involves reportable releases of more than one chemical, prepare one report form for each chemical released.
- If the incident involves a series of separate releases of chemical(s) at different times, the releases should be reported on separate reporting forms.

SPECIFIC INSTRUCTIONS:

Block A: Enter the name of the business and the name and phone number of a contact person who can provide detailed facility information concerning the release.

Block B: Enter the date of the incident and the time that verbal notification was made to OES. The OES control number is provided to the caller by OES at the time verbal notification is made. Enter this control number in the space provided.

Block C: Provide information pertaining to the location where the release occurred. Include the street address, the city or community, the county and the zip code.

Block D: Provide information concerning the specific chemical that was released. Include the chemical or trade name and the Chemical Abstract Service (CAS) number. Check all categories that apply. Provide best available information on quantity, time and duration of the release.

Block E: Indicate all actions taken to respond to and contain the release as specified in 42 U.S.C. § 11004(c).

Block F: Check the categories that apply to the health effects that occurred or could result from the release. Provide an explanation or description of the effects in the space provided. Use Block H for additional comments/information if necessary to meet requirements specified in 42 U.S.C. § 11004(c).

Block G: Include information on the type of medical attention required for exposure to the chemical released. Indicate when and how this information was made available to individuals exposed and to medical personnel, if appropriate for the incident, as specified in 42 U.S.C. § 11004(c).

Block H: List any additional pertinent information.

Block I: Print or type the name of the facility representative submitting the report. Include the official signature and the date that the form was prepared.

MAIL THE COMPLETED REPORT TO:

**State Emergency Response Commission (SERC)
Attn: Section 304 Reports
Hazardous Materials Unit
3650 Schriever Avenue
Mather, CA 95655**

NOTE: Authority cited: Sections 25503, 25503.1 and 25507.1, Health and Safety Code. Reference: Sections 25503(b)(4), 25503.1, 25507.1, 25518 and 25520, Health and Safety Code.

APPENDIX F

Asbestos and Lead Management

WORK REQUEST FOR ASBESTOS & LEAD MANAGEMENT PROGRAM

Department: Engineering & Capital projects

Dept#: 545

Division: AEC

Work Requested By: Jihad Sleiman

MS#: 908A

Phone/Fax: (619)533-7532

Facility Name/Address: Mission Beach Lifeguard Station, 3140 Ocean Front Walk, San Diego CA 92109

Facility #: 1283

Age of Facility: 1971

Plans Attached? YES NO

Target Start: 9/01/11

Description of Proposed Work (explain detail of work as well as where in facility):

The Scope of work includes, partial remodel and improvements to the Mission Beach lifeguard station, it will provide a larger male/female modernized locker room. In addition it will provide a new work station, upgrade the disabled parking stall, office room/administration area and additional storage room. Work will also include, replacement of two vents located on roof (photo attached), railing and flashing.

Accounting Numbers:

1 9 1 2 1 2 1 1 1 8

400624

512025

S-00793.02.02

Cost Center

Fund

G/L #

Internal Order

I have the authority to authorize ALMP to bill hourly inspection labor and laboratory expenses to the accounting numbers above for work related to this project.

Signature _____

Title Project Manager

Date _____

Print Name Jihad Sleiman

Div. Analyst Name Leita Ross

Send completed form to: **ASBESTOS & LEAD MANAGEMENT PROGRAM** - 9601 Ridgehaven Court, Suite 310, San Diego, CA 92123 or MS 1103-A or Fax (858)492-5089

FOR OFFICE USE ONLY

Date Received 9/14/11

Inspector Wm. Brad Blomdett

Records/Inspection Information _____

Impact on Project

Additional testing did identify more positive materials. These materials will not be disturbed by the current scope of work. If the scope of work changes please have ALMP review the changes. No impact on project.

Wm. Brad Blomdett

ASBESTOS & LEAD PROGRAM INSPECTOR

9-29-11

DATE

[Signature]

ASBESTOS & LEAD PROGRAM MANAGER

9/29/11

DATE

Asbestos & Lead Management Program -- (858) 573-1262 (FAX) (858) 492-5089



THE CITY OF SAN DIEGO

MEMORANDUM

DATE: August 11, 2011

TO: Jihad Sleiman, Associate Civil Engineer, Engineering & Capital Projects Department, AEC Division

FROM: Wm. Brad Blondet, Asbestos & Lead Program Inspector
 via Alan J. Johanns, Asbestos & Lead Program Manager, Environmental Services Department, Energy, Sustainability, and Environmental Protection Division

SUBJECT: Additional Testing at Mission Beach Lifeguard Station

Per your request, on Sept 14, 2011, the Asbestos and Lead Management Program (ALMP) performed additional testing for asbestos and lead based paint at the Mission Beach Lifeguard Station located at 3140 Ocean Front Walk, San Diego, CA 92109. Details of the inspection are as follows:

- 1) Asbestos. The following sample was identified as being positive for asbestos:

Sample No.	Material	Result
6661-04	Gray/Black Roofing Mastic	1-2% Chrysotile

- 2) Lead. The painted surfaces of the affected components were tested for "lead-based" paint which is defined as paint containing lead in concentrations greater than 5,000 ppm, 5,000 mg/kg, or 1.0 mg/cm² when using an X-ray florescence paint analyzer (XRF). The following positive reading is from the XRF testing:

Reading No	MODE	LOCAT.	COMPONENT	COND.	SUBST.	COLOR	Results	PbC	Units
19	Std.	Entry	Stair Riser	Intact	Metal	Black	Positive	13.2	mg/cm ²

The newly identified positive materials will **not** be affected by the current scope of work. If the scope of work changes during the course of the project please contact me at 858-492-5086 or WBlondet@sandiego.gov in order for ALMP to review the changes.

Sincerely,



Wm. Brad Blondet

Attachments:

1. Asbestos Results
2. XRF results

Memo 2011/1493

146928

SUBMITTAL FORM/Laboratory Services

Rush T/A

PAGE 1 OF 1

TURNAROUND TIME: STD 48 HR. 24 HR. <8 HR. WKND OTHER: 72 Hour

RELINQUISHED BY Wm. Brad Blondet

CLIENT The City of San Diego
ADDRESS 9601 Ridgehaven Ct, Suite 310
San Diego, CA 92123

TIME / DATE 9-14-11
DATE OF SHIPMENT 9-14-11 CARRIER Fed Ex
CLIENT P.O. NO.
CLIENT JOB/PROJECT ID NO(S) 6661

TELEPHONE (858) 492-5086

CONTACT Wm. Brad Blondet

PACKAGE SHIPPED FROM RH Drop box

RESULTS REQUESTED VIA VERBAL FAX CLIENT FAX NO. *Email: WBlondet@sandiego.gov
(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION: 9-14-11

SAMPLE PRESERVATIVES N/A HOLDING TIMES N/A

NO. OF SAMPLES SENT 5 SAMPLER'S NAME Wm. Brad Blondet

TYPE: WATER WASTE WATER SOIL FILTER SORBENT TUBE IMPINGER OTHER PLM Bulk

(FOR EMS ONLY)

146928 -

CLIENT SAMPLE NO. DESCRIPTION/LOCATION/ANALYSIS

VOLUME, TIME/WEIGHT (IF APPLICABLE)

No.	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION/ANALYSIS	VOLUME, TIME/WEIGHT (IF APPLICABLE)
1	6661-01	Upper roof rolled roofing	PLM
2	6661-02	Upper roof rolled roofing	↓
3	6661-03	Lower roof rolled roofing	
4	6661-04	Mastic gray black	
5	6661-05	Mastic gray silver	
/			

(SF 5/00)

146928

FOR EMS ONLY

Laboratory No. _____ Received By Cham Time 9:10

Date of Package Delivery 9-15-11 Shipping Bill Retained: YES NONE

Condition of Package on Receipt OK Condition of Custody Seal _____

(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)

No. of Samples 5 Chain-of-Custody Signature _____

Date of Acceptance into Sample Bank 9-15-11 Misc. Info. _____

Disposition of Samples EMS LAB

EMS LABORATORIES 117 West Bellevue Drive / Pasadena CA 91105-2503 / 626-568-4065

Report No:	146928	Customer:	City of San Diego
Date:	September 19, 2011		9601 Ridgehaven Ct. #320
Date Received:	September 15, 2011		San Diego, CA 92123
Date Analyzed:	September 16, 2011	Attention:	Wm. Brad Blondet
Date/Time Collected:	September 14, 2011 by Wm. Brad Blondet	Reference:	Project#6661
Subject:	Polarized Light Microscopy Analysis for Asbestos	16	Samples
Methodology:	"Method for Determination of Asbestos in Bulk Building Materials." (EPA 600/R-93/116)		
Accredited:	NVLAP Lab Code 101218-0		RECEIVED
Certified:	California Department of Health Services Environmental Testing Laboratory ELAP 1119		SEP 23 11
	County Sanitation Districts of Los Angeles County, Lab ID No. 10120		Env Svs Dept
			ESEP Div

Quality Control Sample (SRM 1866 Glass Fibers as the blank): None Detected

Sample ID	Asbestos	Percent
6661-01(A) Layer: Black Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (5%)	Asbestos (ND)	
6661-01(B) Layer: Black Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (25%)	Asbestos (ND)	
6661-01(C) Layer: Black Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (30%)	Asbestos (ND)	
6661-01(D) Layer: Black Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (10%)	Asbestos (ND)	
6661-01(E) Layer: Black Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (5%)	Asbestos (ND)	
6661-02(A) Layer: Black Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (10%)	Asbestos (ND)	
6661-02(B) Layer: Black Tar Like, Fibrous Sample Type: Non-Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (8%)	Asbestos (ND)	
6661-02(C) Layer: Black Tar Like, Fibrous Sample Type: Non-Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (15%)	Asbestos (ND)	
6661-02(D) Layer: Black Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (15%)	Asbestos (ND)	

Report No: 146928

Customer: City of San Diego

Sample ID	Asbestos Percent
6661-02(E) Layer: Black Tar Like, Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (5%)	Asbestos (ND)
6661-03(A) Layer: Black Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (1%)	Asbestos (ND)
6661-03(B) Layer: Black Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (5%)	Asbestos (ND)
6661-03(C) Layer: Black Fibrous Sample Type: Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (5%)	Asbestos (ND)
6661-03(D) Layer: Black Tar Like, Fibrous Sample Type: Non-Homogeneous Friability: Non-Friable Other Fibrous Material: Fiberglass (10%)	Asbestos (ND)
6661-04 Layer: Black Tar Like, Silver Paint Sample Type: Non-Homogeneous Friability: Non-Friable Other Fibrous Material: ND	Chrysotile (1-2%)
6661-05 Layer: Black Tar Like, Gray Paint Sample Type: Non-Homogeneous Friability: Non-Friable Other Fibrous Material: Cellulose (25%)	Asbestos (ND)


 Jeff Wan, Optical Microscopist
 BMK/mt


 B.M. Kolk, Laboratory Director

ND = 'NONE DETECTED'.

The EPA method is a semi-quantitative procedure. The detection limit is between 0.1 - 1% by area and is dependent upon the size of the asbestos fibers, the means of sampling and the matrix of the sampled material.

The test results reported are for the sample(s) delivered to us and may not represent the entire material from which the samples was taken. The EPA recommends three samples or more be taken from a "homogenous sampling area" before friable material is considered non-asbestos-containing.

** Negative floor tile samples may contain significant amounts (>1%) of very thin asbestos fibers which cannot be detected by PLM. Confirmation by TEM is recommended by the EPA (Federal Register Vol. 58, No. 148).

This report, from a NIST-accredited laboratory through NVLAP, must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. government. This report shall not be reproduced, except in full, without the written approval of EMS Laboratories.

Samples were received in good condition unless otherwise noted.



City of San Diego/Asbestos/Lead Management Program
Mission Beach Lifeguard and Comfort Station ADA improvements

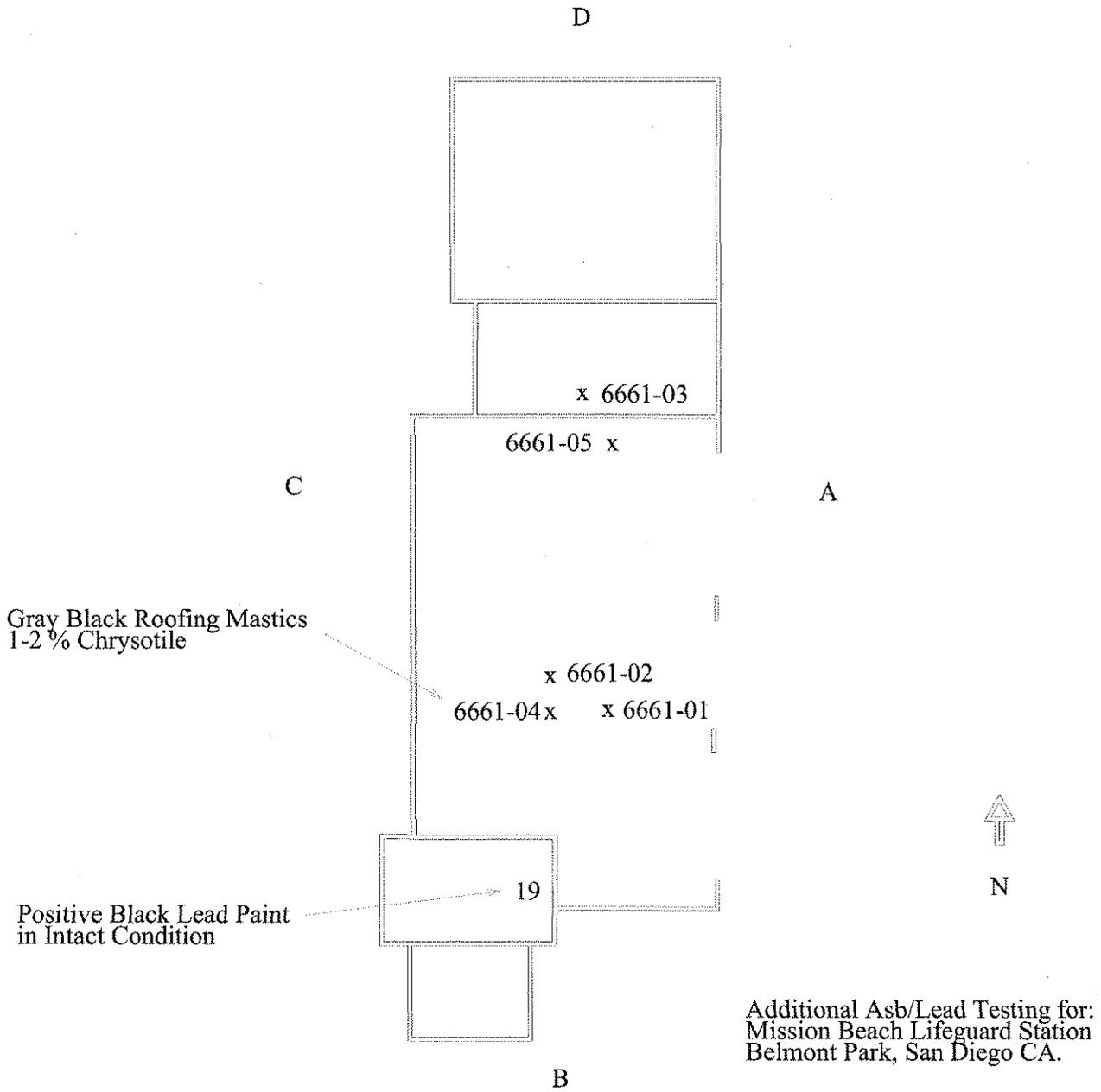


XRF Assay Results

Reading No	Time	Duration	MODE	LOCAT.	ROOM	SIDE	COMPONENT	COND.	SUBST.	COLOR	PbC	Units
1	9/13/11 13:32	255.17									1.52	cps
2	9/13/11 13:35	20	K & L				CALIB. CHECK			RED	1	mg / cm ^2
3	9/13/11 13:37	20	K & L				CALIB. CHECK			RED	1	mg / cm ^2
4	9/13/11 13:39	20	K & L				CALIB. CHECK			RED	1	mg / cm ^2
5	9/13/11 13:44	1.06	Std.	MB LIFEGUARD	EXTERIOR	A	DOOR	POOR	WOOD	BLUE	0	mg / cm ^2
6	9/13/11 13:45	1.05	Std.	MB LIFEGUARD	EXTERIOR	A	DOOR CASING	INTACT	WOOD	BLUE	0	mg / cm ^2
7	9/13/11 13:46	3.16	Std.	MB LIFEGUARD	EXTERIOR	A	STUCCO	INTACT	STUCCO	TAN	0	mg / cm ^2
8	9/13/11 13:47	1.06	Std.	MB LIFEGUARD	EXTERIOR	A	DOOR	INTACT	METAL	BLUE	0	mg / cm ^2
9	9/13/11 13:47	1.06	Std.	MB LIFEGUARD	EXTERIOR	A	DOOR CASING	INTACT	METAL	BLUE	0	mg / cm ^2
10	9/13/11 13:48	1.05	Std.	MB LIFEGUARD	EXTERIOR	A	HANDRAIL	INTACT	METAL	GREEN	0	mg / cm ^2
11	9/13/11 13:49	1.05	Std.	MB LIFEGUARD	EXTERIOR	A	WINDOW BARS	POOR	METAL	BLUE	0	mg / cm ^2
12	9/13/11 13:51	1.05	Std.	MB LIFEGUARD	EXTERIOR	A	DOOR	FAIR	WOOD	TAN	0	mg / cm ^2
13	9/13/11 13:52	1.05	Std.	MB LIFEGUARD	EXTERIOR	A	DOOR CASING	FAIR	METAL	TAN	0	mg / cm ^2
14	9/13/11 13:53	1.05	Std.	MB LIFEGUARD	EXTERIOR	B	WALL PROTECT	POOR	WOOD	TAN	0	mg / cm ^2
15	9/13/11 13:54	1.05	Std.	MB LIFEGUARD	EXTERIOR	C	DOOR	POOR	WOOD	LAVENTAR	0	mg / cm ^2
16	9/13/11 13:55	1.05	Std.	MB LIFEGUARD	EXTERIOR	C	DOOR CASING	POOR	WOOD	LAVENTAR	0	mg / cm ^2
17	9/13/11 13:56	2.57	Std.	MB LIFEGUARD	EXTERIOR	C	WALL	INTACT	STUCCO	TAN	0	mg / cm ^2
18	9/13/11 13:59	1.06	Std.	MB LIFEGUARD	ENTRY	A	HANDRAIL	POOR	METAL	BLUE	0	mg / cm ^2
19	9/13/11 13:59	0.59	Std.	MB LIFEGUARD	ENTRY	A	RISER	INTACT	METAL	BLACK	13.2	mg / cm ^2
20	9/13/11 14:00	1.05	Std.	MB LIFEGUARD	ENTRY	A	TREAD	POOR	METAL	YELLOW	0.02	mg / cm ^2
21	9/13/11 14:03	1.05	Std.	MB LIFEGUARD	EXT LOOKOUT	D	DOOR	POOR	WOOD	BLUE	0	mg / cm ^2
22	9/13/11 14:04	1.05	Std.	MB LIFEGUARD	EXT LOOKOUT	D	DOOR CASING	POOR	WOOD	BLUE	0	mg / cm ^2
23	9/13/11 14:05	1.06	Std.	MB LIFEGUARD	EXT LOOKOUT	D	HANDRAIL CAP	POOR	METAL	BLUE	0	mg / cm ^2
24	9/13/11 14:06	1.05	Std.	MB LIFEGUARD	EXT LOOKOUT	D	HANDRAIL	POOR	WOOD	BLUE	0	mg / cm ^2
25	9/13/11 14:07	1.05	Std.	MB LIFEGUARD	EXT LOOKOUT	D	POST	POOR	METAL	TAN	0	mg / cm ^2
26	9/13/11 14:09	1.41	Std.	MB LIFEGUARD	ROOF	D	ROOF PAINT	INTACT	ASPHALT	SILVER	0.01	mg / cm ^2
27	9/13/11 14:10	1.41	Std.	MB LIFEGUARD	ROOF	C	FLASHING	POOR	METAL	TAN	0	mg / cm ^2
28	9/13/11 14:12	1.05	Std.	MB LIFEGUARD	ROOF	A	WINDOW CASING	FAIR	METAL	BLUE	0	mg / cm ^2
29	9/13/11 14:12	1.06	Std.	MB LIFEGUARD	ROOF	A	WINDOW SASH	POOR	METAL	BLUE	0.01	mg / cm ^2
30	9/13/11 14:16	3.04	Std.	MB LIFEGUARD	ENTRY	C	WALL	POOR	CONCRETE	WHITE	0	mg / cm ^2
31	9/13/11 14:20	20	K & L				CALIB. CHECK			RED	1	mg / cm ^2
32	9/13/11 14:22	20	K & L				CALIB. CHECK			RED	0.9	mg / cm ^2
33	9/13/11 14:22	4.79	K & L				CALIB. CHECK			RED	0.9	mg / cm ^2
34	9/13/11 14:24	20	K & L				CALIB. CHECK			RED	1	mg / cm ^2

Inspector: Wm. Brad Blondet
CDPH Inspector Assessor #5464

Niton XLp303A Serial #20132





**ENVIRONMENTAL SERVICES DEPARTMENT
ASBESTOS & LEAD MANAGEMENT PROGRAM
CUSTOMER SERVICE EVALUATION**

Your comments regarding the service you have received from the Asbestos & Lead Management Program staff is important to us. Your feedback will assist us to maintain a quality of service which meets the City's needs. The time you take to complete this form is valuable to us and we do appreciate your appraisal of our services.

Please rate the service you received in the following areas:

	Unsatisfactory	Poor	Average	Good	Excellent
1. Timeliness of service	1	2	3	4	5
2. Courtesy of staff	1	2	3	4	5
3. Willingness of staff to go the extra step to satisfy your needs	1	2	3	4	5
4. Technical knowledge of staff	1	2	3	4	5
5. Projects completed within budget and time frame	1	2	3	4	5
6. Overall quality of service	1	2	3	4	5

What is one thing we could do to improve the service provided to you? _____

Please provide any additional comments. _____

Optional: If you would like us to contact you for follow-up service, to answer questions, or to discuss this survey, please print your name and phone number below.

NAME: _____ PHONE: _____

Please return to MS 1103-B or FAX to (858) 492-5089

**THANK YOU FOR YOUR PARTICIPATION IN HELPING US PROVIDE THE BEST
POSSIBLE QUALITY SERVICE (573-1262).**

City of San Diego

CONTRACTOR'S NAME: APR CONSTRUCTION, Inc.
ADDRESS: 3916 MURRAY HILL ROAD, LA MESA, CA 91941
TELEPHONE NO.: (619) 247-7327 FAX NO.: (619) 464-3835
CITY CONTACT: Jihad Sleiman, 600 B St., Suite 800, MS. 908A, San Diego, CA 92101-4520
jsleiman@sandiego.gov, Phone No.: 619-533-7532, Fax No.: 619-533-5476

NB/LS/CA



CONTRACT DOCUMENTS

FOR

MISSION BEACH LIFEGUARD STATION

VOLUME 2 OF 2

BID NO.:	<u>L-12-5651-DBB-2</u>
SAP NO. (WBS/IO/CC):	<u>S-00793</u>
CLIENT DEPARTMENT:	<u>2113</u>
COUNCIL DISTRICT:	<u>2</u>
PROJECT TYPE:	<u>GE</u>

THIS CONTRACT IS SUBJECT TO THE FOLLOWING:

- THE CITY'S SUBCONTRACTING PARTICIPATION REQUIREMENTS FOR SLBE PROGRAM.
- COMPETITION RESTRICTED TO: SLBE-ELBE FIRMS ONLY.

**THIS BIDDING DOCUMENT TO BE SUBMITTED IN ITS ENTIRETY
REFER TO INVITATION TO BIDS FOR TIME, DATE, AND LOCATION**

TABLE OF CONTENTS

Volume 2 - Bidding Documents

The following forms must be completed in their entirety and submitted with the Bid. Include the form(s) even if the information does not apply. Where the information does not apply write in N/A. Failure to include any of the forms may cause the Bid to be deemed **non-responsive**. If you are uncertain or have any questions about any required information, contact the City no later than 14 days prior to Bid due date.

<u>DESCRIPTION</u>	<u>PAGE NUMBER</u>
1. Bid/Proposal.....	3 - 5
2. Bid Bond.....	6
3. Non-Collusion Affidavit to be executed by Bidder and Submitted with Bid under 23 USC 112 and PCC 7106	7
4. Contractors Certification of Pending Actions.....	8
5. Equal Benefits Ordinance Certification of Compliance.....	9
6. Proposal (Bid).....	10 - 11
7. Form AA35 - List of Subcontractors	12
8. Form AA40 - Named Equipment/Material Supplier List	13

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:

- (1) Name under which business is conducted N/A
- (2) Signature (Given and surname) of proprietor N/A
- (3) Place of Business (Street & Number) N/A
- (4) City and State N/A Zip Code N/A
- (5) Telephone No. N/A Facsimile No. N/A

IF A PARTNERSHIP, SIGN HERE:

- (1) Name under which business is conducted N/A
- (2) Name of each member of partnership [indicate character of each partner, general or special (limited):
N/A

BIDDING DOCUMENTS

(3) Signature (Note: Signature must be made by a general partner)

N/A

Full Name and Character of partner

N/A

(4) Place of Business (Street & Number) N/A

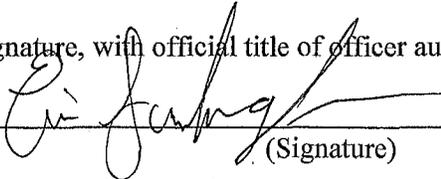
(5) City and State N/A Zip Code N/A

(6) Telephone No. N/A Facsimile No. N/A

IF A CORPORATION, SIGN HERE:

(1) Name under which business is conducted APR CONSTRUCTION, INC.

(2) Signature, with official title of officer authorized to sign for the corporation:



(Signature)

ERIC SCARBROUGH

(Printed Name)

PRESIDENT

(Title of Officer)

(Impress Corporate Seal Here)

(3) Incorporated under the laws of the State of CALIFORNIA

(4) Place of Business (Street & Number) 3916 MURRAY HILL ROAD

(5) City and State LA MESA CA Zip Code 91941

(6) Telephone No. (619) 247-7327 Facsimile No. (619) 464-3835

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

LICENSE NO. 940651 EXPIRES 12/31, 2013

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): 35-2370431

E-Mail Address: ERICLEY68@AOL.COM

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.

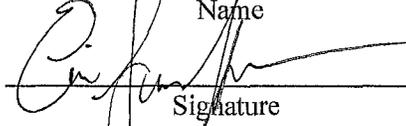
- The undersigned certifies that within the past 10 years the Bidder has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers.

- 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:

N/A

Contractor Name APR CONSTRUCTION, INC.

Certified By ERIC SCARBROUGH Name Title PRESIDENT

 Signature Date 4/10/12

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: <u>APR CONSTRUCTION, INC.</u>	Contact Name: <u>ERIC SCARBROUGH</u>
Company Address: <u>3916 MURRAY HILL ROAD</u>	Contact Phone: <u>619 247-7327</u>
<u>LA MESA, CA 91941</u>	Contact Email: <u>ERICUEY68@AOL.COM</u>

CONTRACT INFORMATION

Contract Title: MISSION BEACH LIFEGUARD STATION	Start Date: <u>9/10/12</u>
Contract Number (if no number, state location): <u>L-12-5651-DBB</u>	End Date: <u>11/16/12</u>

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.

<u>ERIC SCARBROUGH / PRESIDENT</u>		<u>4/10/12</u>
Name/Title of Signatory	Signature	Date

FOR OFFICIAL CITY USE ONLY

Receipt Date:	EBO Analyst:	<input type="checkbox"/> Approved	<input type="checkbox"/> Not Approved – Reason:
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(Rev 02/15/2011)

BIDDING DOCUMENTS

PROPOSAL (BID)

The Bidder agrees to the construction of **MISSION BEACH LIFEGUARD STATION**, 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 No.	Quantity	Unit	NAICS	Payment Reference	Description	Unit Price	Extension
BASE BID							
1.	1	LS	236220	2-4.1	Bonds (Payment and Performance)	 	\$ 9,675
2.	1	LS	236220	9-3	Field Construction	 	\$ 343,375
3.	1	LS	541330	801-9.4	Storm Water Pollution Prevention Development	 	\$ 1,250
4.	1	LS	237990	801-9.4	Storm Water Pollution Prevention Implementation	 	\$ 2,500
5.	1	AL	236220	9-3.5	Field Orders	 	\$23,500.00
6.	1	LS	236220	7-5.3	Building Permit & Inspection	 	\$ 6,700
ESTIMATED TOTAL BASE BID						⁽⁶⁵⁾ \$ 387,000	

TOTAL BID PRICE FOR BID (Items 1 through 6 inclusive) amount written in words:

THREE HUNDRED EIGHTY SEVEN DOLLARS AND NO/ CENTS

The names of all persons interested in the foregoing proposal as principals are as follows:

ERIC SCARBROUGH

BIDDING DOCUMENTS

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.

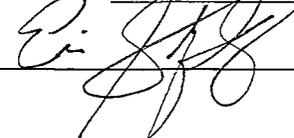
Bidder: APR CONSTRUCTION, INC.

Title: PRESIDENT

Business Address: 3916 MURRAY HILL ROAD, LA MESA CA 91941

Place of Business: 3916 MURRAY HILL ROAD, LA MESA CA 91941

Place of Residence: 3916 MURRAY HILL ROAD, LA MESA CA 91941

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.
- I. The Bid shall contain an acknowledgment of receipt of all addenda, the numbers of which shall be filled in on the Bid form. The following addenda have been received and are acknowledged in this bid: [.....]. If an addendum or addenda has been issued by the City and not noted above as being received by the Bidder, this proposal shall be rejected as being **non-responsive**.

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>SCOTT'S DRAIN & PLUMBING</u> Address: <u>PO BOX 13187</u> City: <u>SAN DIEGO</u> State: <u>CA</u> Zip: <u>92113</u> Phone: <u>(619) 226-4161</u>	SUB-CONTRACTOR	PLUMBING	5,000.00	N/A	N/A	N/A
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____						

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).

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, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB®	WHERE CERTIFIED®
Name: <u>FERGUSON PLUMBING</u> Address: <u>4699 MERCURY ST.</u> City: <u>S. D.</u> State: <u>CA</u> Zip: <u>92111</u> Phone: <u>858 974-5100</u>	<u>ROUGH IN PLUMBING MATERIALS/SUPPLIES</u>	<u>12,000.00</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>N/A</u>
Name: <u>GRAH SAFE & LOCK</u> Address: <u>939 UNIVERSITY AVE. STE 100</u> City: <u>S. D.</u> State: <u>CA</u> Zip: <u>92103</u> Phone: <u>619 234-4829</u>	<u>DOOR HARDWARE & SUPPLIES</u>	<u>5,000.00</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>N/A</u>
Name: <u>J & M</u> Address: <u>1302 N. MAGNOLIA AVE</u> City: <u>ELCAJON</u> State: <u>CA</u> Zip: <u>92020</u> Phone: <u>619 401-3220</u>	<u>CABINET PARTITIONS</u>	<u>6,000.00</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>N/A</u>

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 | | |

② As appropriate, Bidder shall indicate if Vendor/Supplier 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).

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.

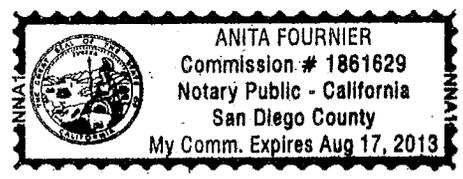
Signature *Chris J. [unclear]* Title PRESIDENT

SUBSCRIBED AND SWORN TO BEFORE ME, THIS 10 DAY OF April, 2012.

Notary Public in and for the County of San Diego, State of California

Anita Fournier

(NOTARIAL SEAL)



CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

State of California

County of San Diego

On 04/10/12 before me, Anita Fournier
(Here insert name and title of the officer)

personally appeared Eric Scarbrough

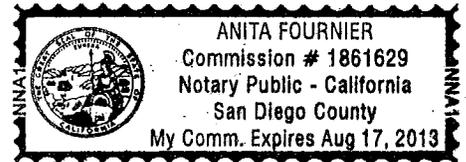
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s),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

Anita Fournier
 Signature of Notary Public

(Notary Seal)



ADDITIONAL OPTIONAL INFORMATION

<p>DESCRIPTION OF THE ATTACHED DOCUMENT</p> <p><u>Proposal Bidder's General</u> <small>(Title or description of attached document)</small></p> <p><u>Information</u> <small>(Title or description of attached document continued)</small></p> <p>Number of Pages <u>3</u> Document Date <u>04/10/12</u></p> <p><small>(Additional information)</small></p>

<p>CAPACITY CLAIMED BY THE SIGNER</p> <p><input checked="" type="checkbox"/> Individual (s)</p> <p><input checked="" type="checkbox"/> Corporate Officer</p> <p>_____ <small>(Title)</small></p> <p><input type="checkbox"/> Partner(s)</p> <p><input type="checkbox"/> Attorney-in-Fact</p> <p><input type="checkbox"/> Trustee(s)</p> <p><input type="checkbox"/> Other _____</p>
--

INSTRUCTIONS FOR COMPLETING THIS FORM

Any acknowledgment completed in California must contain verbiage exactly as appears above in the notary section or a separate acknowledgment form must be properly completed and attached to that document. The only exception is if a document is to be recorded outside of California. In such instances, any alternative acknowledgment verbiage as may be printed on such a document so long as the verbiage does not require the notary to do something that is illegal for a notary in California (i.e. certifying the authorized capacity of the signer). Please check the document carefully for proper notarial wording and attach this form if required.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he/she/they~~, is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
 - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
 - ❖ Indicate title or type of attached document, number of pages and date.
 - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document

BIDDING DOCUMENTS

BID BOND

KNOW ALL MEN BY THESE PRESENTS,

That APR Construction, Inc. as Principal, and
American Safety Casualty 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. "Not to exceed total bid amount of \$550,000.00"

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

Mission Beach Lifeguard Station

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 30th day of March, 2012

APR Construction, Inc. (SEAL) American Safety Casualty Insurance Company (SEAL)
(Principal) (Surety)

By: [Signature]
(Signature)
Eric Scarborough

By: [Signature]
(Signature)
Juliana E. Dahlgren, Attorney In Fact

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

State of California

County of San Diego

On 04/10/12 before me, Anita Fournier
(Here insert name and title of the officer)

personally appeared Eric Scarbrough

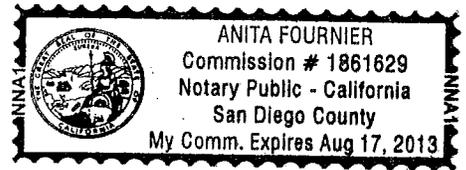
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), 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 of Notary Public

(Notary Seal)



ADDITIONAL OPTIONAL INFORMATION

INSTRUCTIONS FOR COMPLETING THIS FORM

Any acknowledgment completed in California must contain verbiage exactly as appears above in the notary section or a separate acknowledgment form must be properly completed and attached to that document. The only exception is if a document is to be recorded outside of California. In such instances, any alternative acknowledgment verbiage as may be printed on such a document so long as the verbiage does not require the notary to do something that is illegal for a notary in California (i.e. certifying the authorized capacity of the signer). Please check the document carefully for proper notarial wording and attach this form if required.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
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- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. he/she/they- is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
 - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
 - ❖ Indicate title or type of attached document, number of pages and date.
 - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document

DESCRIPTION OF THE ATTACHED DOCUMENT

Bid Bond #LAX711701
(Title or description of attached document)

(Title or description of attached document continued)

Number of Pages 1 Document Date 04/10/12

(Additional information)

CAPACITY CLAIMED BY THE SIGNER

- Individual (s)
 Corporate Officer

(Title)

- Partner(s)
 Attorney-in-Fact
 Trustee(s)
 Other _____

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Los Angeles

On 3/30/12

Date

before me,

Martha Burciaga, Notary Public

Here Insert Name and Title of the Officer

personally appeared

Juliana E. Dahlgren, Attorney In Fact

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/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 Martha Burciaga
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.

Description of Attached Document

Title or Type of Document: Bid Bond # LAX711701

Document Date: 3/30/12

Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Juliana E. Dahlgren

- 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: _____



NUMBER
LAX711701

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS that American Safety Casualty Insurance Company has made, constituted and appointed, and by these presents does make, constitute and appoints

Juliana E. Dahlgren

its true and lawful attorney-in-fact, for it and its name, place, and stead to execute on behalf of the said Company, as surety, bonds, undertaking and contracts of suretyship to be given to

ALL OBLIGEEES

provided that n bond or undertaking or contract of suretyship executed under this authority shall exceed in amount the sum of

****ONE MILLION DOLLARS (\$1,000,000.00)****

This Power of Attorney is granted and is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company of the 6th day of August, 2009.

RESOLVED, that the President in conjunction with the Secretary or any Assistant Secretary may appoint attorneys-in-fact or agents with authority as defined or limited in the instrument evidencing the appointment in each case, for and on behalf of the Company, to execute and deliver and affix the seal of the Company to bonds, undertakings, recognizances, and suretyship obligations of all kinds; and said officers may remove any such attorney-in-fact or agent and revoke any power of attorney previously granted to such persons.

RESOLVED FURTHER, that any bond, undertaking, recognizance, or suretyship obligation shall be valid and binding upon the company when: (i) when signed by the President or any Vice-President and attested and sealed (if a seal is required) by any Secretary or Assistant Secretary or (ii) when signed by the President or any Vice-President or Secretary or Assistant Secretary, and counter-signed and sealed (if a seal is required) by a duly authorized attorney-in-fact or agent; or (iii) when duly executed and sealed (if a seal is required) by one or more attorney-in-fact or agents pursuant to and within the limits of the authority evidenced by the power of attorney issued by the Company to such person or persons.

RESOLVED FURTHER, that the signature of any authorized officer and the seal of the Company may be affixed by facsimile to any power of attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company; and such signature and seal when so used shall have the same force and effects as though manually affixed.

IN WITNESS WHEREOF, American Safety Casualty Insurance Company has caused its official seal to be hereunto affixed, and these presents to be signed by its President and attested by its Secretary this 6th day of August, 2009

Attest:

Ambuj Jain



Joseph D. Scollo, Jr.

STATE OF GEORGIA
COUNTY OF COBB

On this 6th day of August, 2009, before me personally came Joseph D. Scollo, Jr. to me known, who, being by me duly sworn, did depose and say that he is the President of American Safety Casualty Insurance Company, the corporation described in and which executed the above instrument; that he knows the seal of the said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation and that he signed his name thereto by like order.

JAMI BAILEY
Notary Public, Hall Co., GA
My Commission Expires Aug. 13, 2012

Jami Bailey, Notary Public

I, the undersigned, Secretary of American Safety Casualty Insurance Company, an Oklahoma corporation, DO HEREBY CERTIFY, that the foregoing and attached Power of Attorney remains in full force and has not been revoked; and furthermore that the Resolution of the Board of Directors, set forth in the said Power of Attorney, is now in force.

Signed and sealed in the City of Atlanta, in the State of Georgia

Dated this 30th day of March 2010



Ambuj Jain

ORIGINALS OF THIS POWER OF ATTORNEY ARE PRINTED WITH RED NUMERICAL NUMBERS
DUPLICATES SHALL HAVE THE SAME FORCE AND EFFECT AS AN ORIGINAL ONLY WHEN ISSUED IN CONJUNCTION WITH THE ORIGINAL

NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID UNDER 23 USC 112 AND PCC 7106

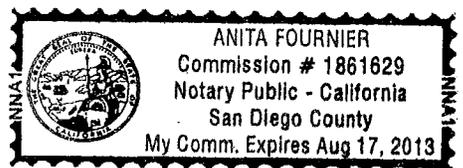
State of California)
County of SAN DIEGO) ss.

ERIC SCARBROUGH, being first duly sworn, deposes and says that he or she is PRESIDENT 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: [Signature]
Title: PRESIDENT

Subscribed and sworn to before me this 10 day of April, 2012
[Signature]
Notary Public

(SEAL)



CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

State of California

County of San Diego

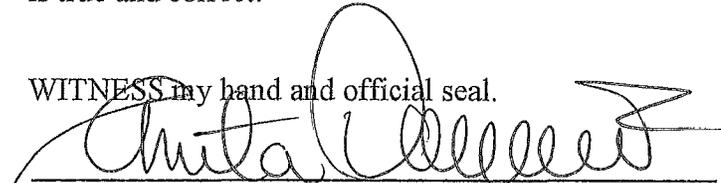
On 04/10/12 before me, Anita Fournier
(Here insert name and title of the officer)

personally appeared Eric Scarbrough

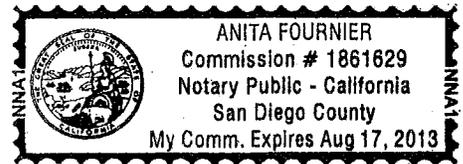
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), 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 of Notary Public

(Notary Seal)



ADDITIONAL OPTIONAL INFORMATION

INSTRUCTIONS FOR COMPLETING THIS FORM

Any acknowledgment completed in California must contain verbiage exactly as appears above in the notary section or a separate acknowledgment form must be properly completed and attached to that document. The only exception is if a document is to be recorded outside of California. In such instances, any alternative acknowledgment verbiage as may be printed on such a document so long as the verbiage does not require the notary to do something that is illegal for a notary in California (i.e. certifying the authorized capacity of the signer). Please check the document carefully for proper notarial wording and attach this form if required.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. he/she/they-, is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
 - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
 - ❖ Indicate title or type of attached document, number of pages and date.
 - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document

DESCRIPTION OF THE ATTACHED DOCUMENT

Non-coulusion Affidavit
(Title or description of attached document)

(Title or description of attached document continued)

Number of Pages 1 Document Date 04/10/12

(Additional information)

CAPACITY CLAIMED BY THE SIGNER

- Individual (s)
 Corporate Officer

(Title)

- Partner(s)
 Attorney-in-Fact
 Trustee(s)
 Other _____

ALTERATIONS TO MISSION BEACH LIFEGUARD STATION SAN DIEGO, CA

GENERAL NOTES

1. "REPLACE" MEANS TO REMOVE EXISTING AND PROVIDE NEW AS SPECIFIED, OR IF NOT SPECIFIED, TO MATCH EXISTING, ALL UNLESS OTHERWISE NOTED.
2. "PROVIDE" MEANS TO FURNISH AND INSTALL.
3. "REMOVE" MEANS TO REMOVE AND DISPOSE OF OFF SITE, UON, AND PREPARE EXISTING SURFACES TO RECEIVE NEW CONSTRUCTION.
4. ALL ITEMS SHOWN ON DRAWINGS ARE "NEW" UNLESS OTHERWISE LABELED AS "(E)". ALL (E) ITEMS TO REMAIN UON.
5. VERIFY ALL CONDITIONS AND DIMENSIONS IN FIELD AND REPORT ANY SIGNIFICANT DISCREPANCIES TO ARCHITECT BEFORE PROCEEDING. ACTUAL SITE CONDITIONS MAY VARY FROM THOSE INDICATED ON DRAWINGS.
6. ALL EXISTING EXITS NEED TO BE KEPT OPERATIONAL, INCLUDING CORRIDORS, ETC.
7. CONTRACTOR SHALL COORDINATE ACCESS ROUTE INTO BUILDING, LAYDOWN AREA, ETC. WITH THE CITY ENGINEER.
8. THE WORK SHALL INCLUDE THE FURNISHING OF ALL NECESSARY MATERIALS AND EQUIPMENT, PERFORMING ALL LABOR FOR DEMOLITION, CUTTING AND PATCHING, AND RELATED WORK UPON EXISTING CONSTRUCTION, AS REQUIRED FOR THE PREPARATION OF ALL IMPROVEMENTS. NEW WORK SHALL BE AS SPECIFIED IN THE RESPECTIVE SECTIONS OF THE SPECIFICATIONS AND PROJECT DRAWINGS. WHERE A SPECIFIC ITEM IS NOT SPECIFIED OR SPECIFICALLY SHOWN, THE MATERIAL AND INSTALLATION SHALL MATCH THE EXISTING ADJACENT WORK. UPON COMPLETION OF WORK, LEAVE THE WORK INTEGRATED INTO EXISTING WORK, WITH NO EVIDENCE OF THE NEW WORK OR CONTRAST WITH EXISTING WORK. PATCHES AND REPAIRS SHALL BE IN TRUE PLANES WITH CLEAR LINES, SHARP CORNERS, TIGHT JOINTS, AND OTHER REQUIREMENTS NECESSARY FOR NEW CONSTRUCTION BY RESPECTIVE TRADES.
9. EXISTING CONDITIONS: IT IS REQUIRED THAT PRIOR TO BIDDING, ALL BIDDERS VISIT THE PROJECT AND INSPECT FOR EXISTING CONDITIONS. ATTENTION IS DIRECTED TO THE FACT THAT THE DRAWINGS AND SPECIFICATIONS DO NOT NECESSARILY INDICATE IN DETAIL ALL PORTIONS OF EXISTING WORK OR 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.
10. EXISTING CONDITIONS: THE CONTRACT DOCUMENTS, WHEREVER POSSIBLE, SHOW THE DEMOLITION WORK REQUIRED TO FACILITATE THE REMOVAL OF EXISTING AND INSTALLATION OF ALL NEW PLUMBING, HEATING, VENTILATING, AND AIR CONDITIONING WORK, ELECTRICAL WORK, AND OTHER TRADES. WHERE MINOR DEMOLITION, PATCHING AND FINISHING OF EXISTING CONSTRUCTION AND SURFACES HAVE NOT BEEN SHOWN FOR THE VARIOUS TRADES, IT SHALL BE INCUMBENT UPON THE CONTRACTOR TO VERIFY BOTH IN THE FIELD AND WITH THE TRADES THAT REQUIRED DEMOLITION WORK WILL BE INCLUDED IN THE CONTRACT.
11. THE VISIT BY THE CONTRACTOR TO THE SITE: SHALL BE CONSIDERED ACCEPTANCE BY THE CONTRACTOR OF EXISTING CONDITIONS. WORK INCIDENTAL TO NORMAL EXISTING CONDITIONS, INHERENT TO THIS TYPE OF WORK, SHALL BE INCLUDED BY THE CONTRACTOR IN HIS OVERALL BID AMOUNT.
12. EXTENT OF REWORK: WHERE EXISTING ITEMS OF WORK ARE TO BE CUT, ALTERED, REMOVED OR OTHERWISE WORKED UPON, CONTINUE REMOVAL AND PREPARATORY WORK UNTIL SOUND, SOLID AND FIRM SURFACES, STRUCTURAL OR SUPPORTING MEMBERS AND UNDERLAYMENT ARE CLEAN AND FULLY EXPOSED. CONTRACTOR IS TO INCLUDE IN HIS BID, ALL WORK INCIDENTAL TO PROVIDING A COMPLETE PRODUCT.
13. DEMOLITION: DEMOLITION PLANS SHOW GENERAL CONDITIONS ONLY, AND MAY NOT DEFINE THE FULL SCOPE OF THE DEMOLITION. CONTRACTOR IS TO VISIT THE PROJECT SITE TO DETERMINE THE FULL SCOPE OF THE DEMOLITION REQUIRED.
14. BUILDING WILL STILL BE OCCUPIED AND IN USE DURING CONSTRUCTION. CONTRACTOR WILL PROVIDE TEMPORARY PARTITIONS AS REQ'D TO ENSURE THE SAFETY OF OCCUPANTS AND TO PREVENT CONSTRUCTION DUST AND DEBRIS FROM ENTERING OCCUPIED AREAS. CONTRACTOR WILL COORDINATE LOCATIONS OF TEMPORARY PARTITIONS AND WORK SCHEDULE WITH LIFEGUARDS AND CITY ENGINEER.
15. SEE SPECIFICATIONS FOR ADDITIVE BID ITEMS AND REQUIRED ALLOWANCES.

DECLARATION OF RESPONSIBLE CHARGE

I HEREBY DECLARE THAT I AM THE ARCHITECT OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, 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, OR OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

9/12/11

ANDREW C. CHEN, ARCHITECT C-10872
TECTONICS

DATE

INDEX OF DRAWINGS

DRG.NO.	SHEET TITLE	DRG.NO.	SHEET TITLE
T1.0	TITLE SHEET	S0.1	STRUCTURAL NOTES & STD. DETAILS
T2.0	ABBREVIATIONS, SYMBOLS, NOTES	S1.1	STRUCTURAL PLAN
T3.0	TITLE 24 NOTES	S2.1	FOUNDATION & FRAMING DETAILS
T4.0	TITLE 24 NOTES	S3.1	STRUCTURAL DETAILS
A0.1	ARCHITECTURAL SITE PLAN	S3.2	STRUCTURAL DETAILS
A0.2	ENLARGED SITE PLAN	M0.1	MECHANICAL NOTES, SYMBOLS, ABBREVIATION & DETAILS
A0.3	SITE PLAN DETAILS	M1.1	MECHANICAL DEMOLITION PLAN
A1.1	FIRST FLOOR DEMOLITION PLAN	M2.1	NEW DUCTWORK PLAN
A1.2	FIRST FLR NEW CONSTRUCTION PLAN		
A2.1	ROOF PLAN AND DETAILS	P0.1	PLUMBING NOTES, SYMBOLS & ABBREV
A3.1	BUILDING ELEVATION AND SECTION	P1.1	PLUMBING DEMOLITION PLAN
A3.2	BUILDING SECTION - ADDITION	P2.1	NEW PLUMBING PLANS
A4.1	ENLARGED FLOOR PLAN	P3.1	PLUMBING DETAILS & DIAGRAMS
A5.1	INTERIOR ELEVATIONS	E0.1	ABBREV, SYMBOLS & SCHEDULE
A6.1	REFLECTED CEILING PLAN	E1.1	FIRST FLOOR ELEC. DEMO. PLAN
A7.1	FINISH, DOOR & WINDOW SCHEDULES	E2.1	FIRST FLOOR LIGHTING PLAN
A7.2	DOOR & WINDOW DETAILS	E2.2	FIRST FLOOR POWER PLAN
A9.1	EXTERIOR DETAILS	E3.1	PANEL SCHEDULE
A10.1	INTERIOR DETAILS	E4.1	TITLE 24 CALCULATIONS
A10.2	INTERIOR DETAILS	E4.2	TITLE 24 CALCULATIONS

PROJECT TEAM

ARCHITECTURAL	MECHANICAL
TECTONICS	WILLIAM H. HERRIES
501 W. BROADWAY, SUITE 210 SAN DIEGO, CALIFORNIA 92101 TEL 619. 239. 2151 FAX 619. 239. 7904	255 G STREET SAN DIEGO, CALIFORNIA 92101 TEL 619. 702. 4277 FAX 619. 233. 6149
STRUCTURAL	ELECTRICAL
TECTONICS	EPIC CONSULTING ENGINEERS
501 W. BROADWAY, SUITE 210 SAN DIEGO, CALIFORNIA 92101 TEL 619. 239. 2151 FAX 619. 239. 7904	3242 WEST CANYON AVENUE SAN DIEGO, CALIFORNIA 92123 TEL 858. 565. 4185 FAX 858. 715. 3845

BUILDING DATA

2010 CALIFORNIA BUILDING CODE
OCCUPANCY GROUP: B
CONSTRUCTION TYPE: VB
FIRE SPRINKLER SYSTEM: NONE
(ALSO SEE SHEET T2.0)

REFERENCE DRAWINGS

1. REFERENCE DRAWINGS ARE AVAILABLE AT CITY MAPS AND RECORDS FOR THIS PROJECT.
2. PRIOR TO SUBMITTING A BID, CONTRACTOR SHALL PROCURE A SET OF APPROPRIATE SHEETS OF REFERENCE DRAWINGS TO BECOME AWARE OF AND FAMILIAR WITH (E) CONDITIONS.

REFERENCE SPECIFICATIONS

EXCEPT AS OTHERWISE NOTED OR SPECIFIED, THE WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING REFERENCE SPECIFICATIONS WHICH ARE ON FILE IN THE OFFICE OF THE CITY CLERK:

1. STANDARD SPECIFICATION

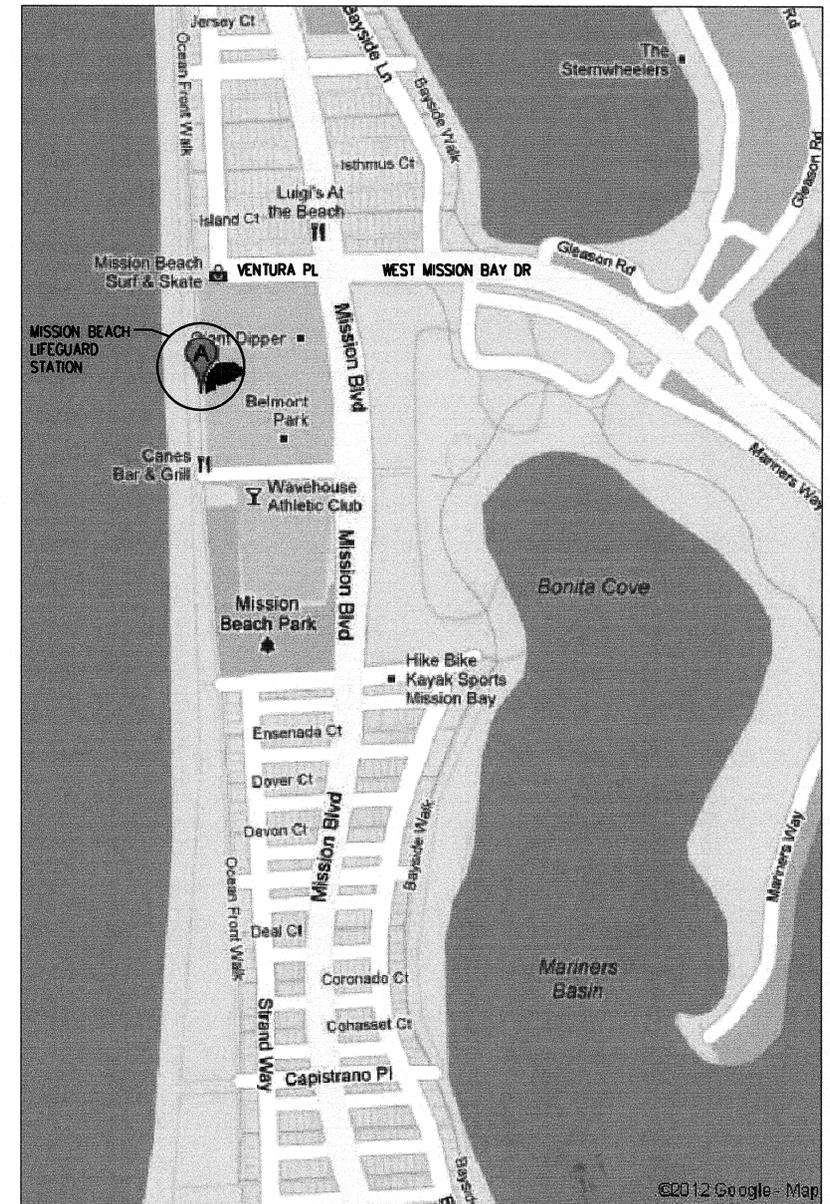
DOCUMENT NO.	FILED	DESCRIPTION
PITS090110-1	-	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2010 EDITION, INCLUDING THE REGIONAL AND CITY OF SAN DIEGO SUPPLEMENT AMENDMENTS
769843	01-24-00	CALIFORNIA DEPARTMENT OF TRANSPORTATION, MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES, DATED 1996
2. STANDARD DRAWINGS
AS LISTED ON THE DETAILED PLANS AND SPECIFICATIONS

DOCUMENT NO.	FILED	DESCRIPTION
AEC1231063	12-31-06	2006 CITY OF SAN DIEGO STANDARD DRAWINGS INCLUDING ALL REGIONAL STANDARD DRAWINGS
3. EQUAL OPPORTUNITY PROGRAM REQUIREMENTS

DOCUMENT NO.	FILED	DESCRIPTION
769023	09-11-84	STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS AND THE EQUAL OPPORTUNITY CLAUSE

CONSTRUCTION CHANGE / ADDENDUM

CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.



SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION

T1.0

TITLE SHEET

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S.
NO. S-00793

FOR CITY ENGINEER: *[Signature]* DATE: 2/1/12
ALEX GARCIA
SECTION HEAD

DESCRIPTION: ORIGINAL BY: APPROVED: DATE: FILMED: *[Signature]*
PROJECT MANAGER

DESIGN ENGINEER

AS-BUILT
CONTRACTOR: _____ DATE STARTED: _____
INSPECTOR: _____ DATE COMPLETED: _____

LAMBERT COORDINATES
X
32848- 1 -0

TECTONICS
Architects
Planners
Engineers

501 W. BROADWAY, SUITE 210
SAN DIEGO, CA 92101
619.239.2151



IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.

SYM	DESCRIPTION	DATE

DEVELOPMENT SUMMARY

1. PROJECT SCOPE OF WORK:

•WORK CONSISTS OF VOLUNTARY SITE AND BUILDING IMPROVEMENTS, TO PROVIDE LARGER, MODERNIZED LOCKER ROOMS FOR LIFEGUARDS AND A SMALL ADDITION TO ACCOMMODATE A STOREROOM FOR BEACH WHEELCHAIRS.
 •BUILDING WORK ALSO INCLUDES UPGRADING AN EXISTING DRINKING FOUNTAIN TO A DUAL-HEIGHT TYPE DRINKING FOUNTAIN MEETING TITLE 24 STANDARDS
 •SITE WORK CONSISTS OF UPGRADING THE EXISTING DISABLED PARKING STALLS TO MEET CURRENT TITLE 24 STANDARDS INCLUDING UPGRADE OF PAVED SURFACES ALONG THE PATH-OF-TRAVEL.

2. ADDRESS, LEGAL DESCRIPTION AND ASSESSOR'S PARCEL NO.:

•ADDRESS:
 3141 OCEAN FRONT WALK
 SAN DIEGO, CA 92109

•LEGAL DESCRIPTION:

A PORTION OF PUEBLO LOT 1803 OF THE PUEBLO LANDS OF SAN DIEGO, ACCORDING TO THE MAP THEREOF MADE BY JAMES PASCOE IN 1870, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY AS MISCELLANEOUS MAP NO. 36 ON NOVEMBER 14, 1921.

•ASSESSOR'S PARCEL NO: 423-680-12

3. OWNER'S NAME AND ADDRESS:

CITY OF SAN DIEGO, ENGINEERING & CAPITAL PROJECTS DEPARTMENT
 PUBLIC BUILDINGS AND PARKS DIVISION
 600 B STREET, SUITE 800
 SAN DIEGO, CA 92101
 ATTN: JIHAD SLEIMAN
 (619) 533-7532

4. CONSTRUCTION TYPE:

EXISTING CONSTRUCTION	PROPOSED CONSTRUCTION
VN (ASSUMED)	VN

NOTE: CONSTRUCTION DRAWINGS DATED 4/3/79, DO NOT LIST THE EXISTING CONSTRUCTION TYPE. THE EXISTING STRUCTURES ARE REINFORCED CONCRETE MASONRY WALLS, CONCRETE SLAB ON GRADE WITH WOOD-FRAMED PARTITIONS AND ROOFS. WOOD JOISTS AND INTERIOR WOOD WALL FRAMING. OPENINGS ARE NOT PROTECTED.

5. OCCUPANCY CLASSIFICATION:

EXISTING CONSTRUCTION	PROPOSED CONSTRUCTION
B	B

NOTE: PER ABOVE NOTE, ITEM 5, NO DOCUMENTATION WAS FOUND ON AVAILABLE DRAWINGS AS TO OCCUPANCY CLASSIFICATION. ROOM "NAME" IDENTIFICATION ON DRAWINGS AS TO USE (I.E. "WORKER ROOM") HAS NOT CHANGED.

6. EXISTING AND PROPOSED USES:

EXISTING	PROPOSED
LIFEGUARD STATION	LIFEGUARD STATION
-	BEACH WHEELCHAIR STOREROOM
COMFORT STATION	COMFORT STATION

7. BUILDING CODE:

2010 CALIFORNIA BUILDING CODE, TITLE 24 DISABLED ACCESSIBILITY REGULATIONS, 2010 ADA

8. ZONING DESCRIPTION:

BASE ZONE - N/A
 OVERLAY ZONE - N/A

9. DEVELOPMENT PERMITS:

N/A - PROJECT IS EXEMPT FROM COASTAL COMMISSION DEVELOPMENT PERMIT

10. NUMBER OF STORIES:

	EXISTING	PROPOSED
LIFEGUARD STATION	3	3 (UNCHANGED)
BEACH WHEELCHAIR STOREROOM	1	1
COMFORT STATION	1	1 (UNCHANGED)

11. HEIGHT OF BUILDING:

	EXISTING	PROPOSED
LIFEGUARD STATION	40'-4"	UNCHANGED
COMFORT STATION	22'-0"	UNCHANGED

12. FLOOR AREA (SF):

	EXISTING	PROPOSED	TOTAL
LIFEGUARD STATION	4709	-	4709
BEACH WHEELCHAIR STOREROOM	-	128	128
COMFORT STATION	1170	-	1170
			6007SF.

13. YEAR OF CONSTRUCTION:

1979

14. SOIL CONDITION:

UNDISTURBED

15. FLOOR AREA ANALYSIS CALCULATION:

TOTAL AREA B OCCUPANCY = 6007 SF.
 ALLOWABLE AREA PER CBC TABLE 5-B = 8000 SF.
 NOTE: EXISTING BUILDINGS ARE NOT FIRE-SPRINKLERED

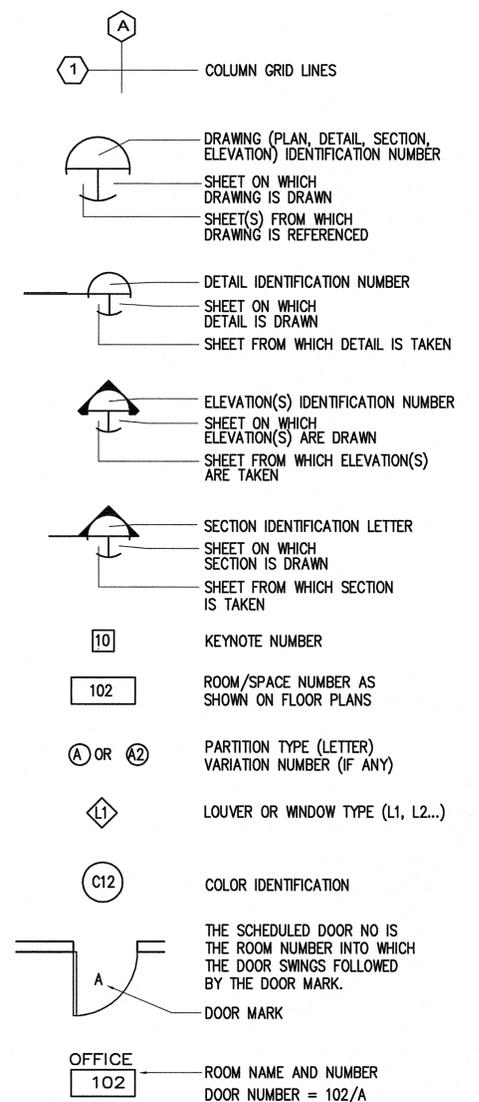
16. PARKING SUMMARY:

TOTAL NUMBER OF SPACES PROVIDED (INCLUDING ACCESSIBLE SPACES): 229
 MINIMUM NUMBER OF REQ'D ACCESSIBLE PARKING SPACES: 7
 NUMBER OF ACCESSIBLE SPACES PROVIDED (INCLUDING VAN ACCESSIBLE): 7
 NUMBER OF VAN ACCESSIBLE SPACES PROVIDED: 1

ABBREVIATIONS

&	AND	H	HIGH	S	SOUTH
∠	ANGLE	HDR	HEADER	SCHED	SCHEDULE
⊙	AT	HDWE	HARDWARE	S.D.	SOAP DISPENSER
<	CENTERLINE	HT	HEIGHT	SDG	SAN DIEGO STANDARD
~	DIAMETER OR ROUND	H.M.	HOLLOW METAL	SDM	DRAWING NO. PREFIX.
#	POUND OR NUMBER	HORIZ	HORIZONTAL	SDW	
ABV	ABOVE	IN	INCH	SED	SEE ELECTRICAL DRAWINGS
ADD'L	ADDITIONAL	INCL	INCLUDE (D) (ING)	SHT	SHEET
A.F.F.	ABOVE FINISHED	INSUL	INSULATION	SIM	SIMILAR
FLOOR	FLOOR	INT	INTERIOR	SMD	SEE MECHANICAL DRAWINGS
ALUM	ALUMINUM	ISA	INTERNATIONAL SYMBOL OF ACCESSIBILITY	SPECS	SPECIFICATIONS
APPROX	APPROXIMATE			S.F.	SQUARE FEET
BEL	BELOW	JT	JOINT	S.S.D.	SEE STRUCT'L DWGS
BET	BETWEEN			S.S.L.	STAINLESS STEEL
BLDG	BUILDING	MAT'L	MATERIAL	S.S.M.	SOLID SURFACE MATERIAL
BM	BEAM	MAX	MAXIMUM	STD	STANDARD
B.O.	BOTTOM OF	MTL	METAL	STL	STEEL
BOT	BOTTOM	MFR	MANUFACTURER	STRL	STRUCTURAL
CSWK	CASEWORK	MIN	MINIMUM	THK	THICK(NESS)
CMU	CONCRETE MASONRY UNIT	MTD	MOUNTED	THRU	THROUGH
		(N)	NEW	TME	TO MATCH EXISTING
COL	COLUMN	N	NORTH	T.O.	TOP OF
CONC	CONCRETE	NIC	NOT IN CONTRACT	T.O.P.	TOP OF PLATE
CONT	CONTINUOUS OR CONTINUE	NO.	NUMBER	TYP	TYPICAL
		NOM	NOMINAL	U.O.N.	UNLESS OTHERWISE NOTED
		NTS	NOT TO SCALE	VERT	VERTICAL
D	DEPTH OR DIAMETER	O.C.	ON CENTER	VIF	VERIFY IN FIELD
DBL	DOUBLE	OPNG	OPENING		
DEMO	DEMOLITION OR DEMOLISH	PLUMB	PLUMBING	W	WIDE, WIDTH
DET	DETAIL	PLYWD	PLYWOOD	W	WEST
DIA	DIAMETER	PTD	PAPER TOWEL DISPENSER	W/	WITH
DIM	DIMENSION	PTN	PARTITION	WD	WOOD
DR	DOOR			WNSCT	WAINSCOT
DWG	DRAWING			W/O	WITHOUT
				WT	WEIGHT
(E)	EXISTING	REINF	REINFORCE(D), (ING)		
E	EAST	REV	REVISION OR REVISED		
EA	EACH	REQ'D	REQUIRED		
ELEC	ELECTRICAL	REQMT	REQUIREMENT		
EQ	EQUAL	R.M.	ROOM		
EXT	EXTERIOR	R.O.	ROUGH OPENING		
FDN	FOUNDATION				
F.E.	FIRE EXTINGUISHER				
F.F.	FINISH FLOOR				
FRMG	FRAMING				
FT	FOOT OR FEET				
FTG	FOOTING				
FURR'G	FURRED, FURRING				
GA	GAGE, GAUGE				
GALV	GALVANIZED				
GYP. BD.	GYPSUM WALL BOARD				

SYMBOL LIST



SPECIFICATION NO. 5651
 CITY CONTRACT, W.B.S. NO. S-00793

TECTONICS
Architects
Planners
Engineers

501 W. BROADWAY, SUITE 210
 SAN DIEGO, CA 92101
 619.239.2151

IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.

SYM	DESCRIPTION	DATE

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION

T2.0

ABBREVIATIONS, SYMBOLS, NOTES

CITY OF SAN DIEGO, CALIFORNIA		W.B.S. NO. S-00793
ENGINEERING DEPARTMENT		
ALEX GARCIA SECTION HEAD		
2/1/12 JIHAD SLEIMAN PROJECT MANAGER		
DESIGN ENGINEER		
X		
LAMBERT COORDINATES		

AS-BUILT _____ DATE STARTED _____

CONTRACTOR _____ DATE COMPLETED _____

INSPECTOR _____

32848- 2 -D



C.A.C. TITLE 24 NOTES (NOT ALL NOTES APPLY)

ACCESSIBLE GENERAL

- 1) PROJECT SHALL COMPLY TO CAC TITLE 24 ACCESSIBILITY STANDARDS.
 - 2) THE PROJECT SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT.
 - 3) PRIMARY BUILDING ENTRANCES SHALL BE IDENTIFIED BY INTERNATIONAL SYMBOL OF ACCESSIBILITY. WHITE FIGURE/BLUE BACKGROUND.
 - 4) AT LEAST ONE ACCESSIBLE ROUTE WITHIN THE BOUNDARY OF THE SITE SHALL BE PROVIDED FROM PUBLIC TRANSPORTATION STOPS, ACCESSIBLE PARKING, ACCESSIBLE PASSENGER LOADING ZONE AND PUBLIC STREETS OR SIDEWALKS TO THE ACCESSIBLE BUILDING ENTRANCE THEY SERVE. WHEN MORE THAN ONE ROUTE IS PROVIDED, ALL ROUTES SHALL BE ACCESSIBLE.
- ENTRANCES & EXITS
- 1) ALL ENTRANCES AND ALL EXTERIOR GROUND-LEVEL EXITS SHALL BE ACCESSIBLE IN COMPLIANCE WITH SECTION 1133 B.1.1.1.1
 - 2) ALL BUILDING ENTRANCES THAT ARE ACCESSIBLE SHALL BE IDENTIFIED WITH AT LEAST ONE STANDARD SIGN AND WITH ADDITIONAL DIRECTIONAL SIGNS, AS REQUIRED, TO BE VISIBLE TO PERSONS ALONG APPROACHING PEDESTRIAN WAYS. SECTION 1117B5.7
 - 3) DOOR HARDWARE SHALL BE THE LEVER OR PUSH TYPE AND MOUNTED 30' TO 44' ABOVE THE FLOOR
 - 4) PER SECTION 1133 B.2.4 REGARDLESS OF THE OCCUPANT LOAD, THERE SHALL BE A LEVEL FLOOR OR LANDING ON EACH SIDE OF THE DOOR. THE FLOOR OR LANDING SHALL NOT BE MORE THAN 1/2" LOWER THAN THE THRESHOLD OF THE DOORWAY (1/4" VERTICAL AND 1/4" BEVELED AT 45). NOTE: AN EXCEPTION IS PERMITTED FOR EXTERIOR LANDINGS, WHICH MAY SLOPE UP TO 1/4" PER FOOT (2%) IN ANY DIRECTION FOR SURFACE DRAINAGE
 - 5) PER SECTION 1133 B.2.5.2, ALL HAND-ACTIVATED DOOR OPENING HARDWARE SHALL MEET THE FOLLOWING REQUIREMENTS:
 - A) SHALL BE CENTERED BETWEEN 30" AND 40" ABOVE THE FLOOR
 - B) LATCHING AND LOCKING DOORS THAT ARE IN A PATH OF TRAVEL SHALL BE OPERATED WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE PANIC BARS, PUSH PULL ACTIVATING BARS OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT THE ABILITY TO GRASP THE OPENING HARDWARE.
 - C) LOCKED DOORS SHALL EXIT IN THE DIRECTION OF TRAVEL.
 - 6) THE LOWER 10" OF ALL DOORS SHALL BE SMOOTH AND UNINTERRUPTED TO ALLOW THE DOOR TO BE OPENED BY A WHEEL CHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. NARROW FRAME DOORS MAY USE A 10" HIGH SMOOTH PANEL ON THE PUSH SIDE OF THE DOOR SEE FIG 11B-29.
 - 7) PER SECTION 1133 B.2.4.2 & FIG. 11B-39. THE LEVEL AREA AT FLOORS OR LANDINGS SHALL HAVE A LENGTH AT LEAST 60" IN THE DIRECTION OF DOOR SWING AND AT LEAST 48" (OR 44" IF DOORS DON'T HAVE LATCHES OR CLOSERS) IN THE DIRECTION OPPOSITE THE DOOR SWING.

DOORS

- 1) THE WIDTH OF THE LEVEL AREA, ON THE SIDE TO WHICH A DOOR (OR GATE) SWINGS, SHALL BE AS FOLLOWS PER SECTION 1133 B.2.4.3 & FIG. 11B-39.
 - A) EXTEND 24" PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR APPLICATIONS.
 - B) EXTEND 18" PAST THE STRIKE EDGE OF THE DOOR FOR INTERIOR CONDITIONS.
 - C) EXTEND 12" PAST THE STRIKE EDGE ON THE PUSH SIDE, IF DOOR HAS LATCH AND CLOSER.
- 2) MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS FOR EXTERIOR DOORS AND 5 POUNDS FOR INTERIOR DOORS. SUCH PUSH OR PULL EFFORT SHALL BE APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE FOR SLIDING DOORS. WHERE FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO 15 POUNDS. SEE SECTION 1004.5.1.
- 3) PER SECTION 1133 B.2.2 & FIG. 11B-33, EVERY REQUIRED PASSAGE DOOR SHALL HAVE A MINIMUM 32" CLEAR WIDTH.
- 4) EXIT DOORS TO BE OPERATED FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. IF APPLIED IN A GROUP B,F,M OR S OCCUPANCIES PROVIDE NOTE READING "THIS DOOR TO REMAIN UNLOCKED DURING BUSINESS HOURS" THIS SIGNAGE IS ONLY ALLOWED AT THE MAIN EXIT. SECTION 1003.3.1.8

TOILET ROOMS

- 1) DOORWAYS LEADING TO ACCESSIBLE SANITARY FACILITIES SHALL BE PROVIDED WITH SYMBOLS WHICH ARE 12" EQUILATERAL TRIANGLE FOR MEN, 12" DIAMETER CIRCLE FOR WOMEN, AND 1/4" THICK, CENTERED ON DOOR 60" HIGH AND CONTRASTING COLOR. UNISEX FACILITIES SHALL BE IDENTIFIED BY THE CIRCLE WITH THE TRIANGLE SUPERIMPOSED WITHIN THE CIRCLE PER SECTION 1115B.5 SEE 1117B.5.1 & 5.6.3 FOR ADDITIONAL SIGNAGE.
- 2) PROVIDE 3" HIGH x 6" WIDE PHOTO POLYMER OVER ACRYLIC SIGN WITH 5/8" HIGH RAISED WHITE HELVETICA MEDIUM CAPITAL TYPESTYLE AND RAISED CONTRACTED GRADE II BRAILLE BELOW. MATCH SIGN ON DOOR WITH "MEN", "WOMEN" OR "RESTROOM" FOR UNISEX. DARK BACKGROUND COLOR TO BE SELECTED BY ARCHITECT.
- 3) PER SECTION 1115B.A WATER CLOSET FIXTURE LOCATED IN AN ACCESSIBLE COMPARTMENT SHALL PROVIDE THE FOLLOWING:
 - A. A MINIMUM OF 28" CLEAR SPACE FROM A FIXTURE OR A MINIMUM OF 32" WIDE CLEAR SPACE FROM A WALL AT ONE SIDE.
 - B. A MINIMUM OF 48" LONG CLEAR SPACE SHALL BE PROVIDED IN FRONT OF THE WATER CLOSET IF THE COMPARTMENT HAS AN END OPENING DOOR (60" IS REQUIRED FOR SIDE OPENING DOORS).
 - C. GRAB BARS SHALL NOT PROJECT MORE THAN 3" INTO THE CLEAR SPACES INDICATED.
- 4) WATER CLOSET DOORS SHALL BE EQUIPPED WITH A SELF CLOSING DEVICE AND HAVE A MINIMUM 32" CLEARANCE WHEN LOCATED AT THE END (AND 34" WHEN LOCATED AT THE SIDE). PER SECTION 1115B.
- 5) WHEN STANDARD COMPARTMENT DOORS ARE USED, WITH MINIMUM 9" CLEARANCE OF FOOTRESTS UNDERNEATH AND A SELF CLOSING DEVICE THE CLEARANCE AT THE STRIKE EDGE AS SPECIFIED IN SECTION 1115B.7.1.3 IS NOT REQUIRED.
- 6) AS PER SECTION 1115B.7.2, THERE SHALL BE A SUFFICIENT SPACE IN THE TOILET ROOM FOR A WHEEL CHAIR MEASURING 30"x48" TO ENTER THE ROOM AND PERMIT THE DOOR TO CLOSE NO DOOR SHALL BE PERMITTED TO ENCR OACH INTO THIS SPACE. THERE SHALL BE A CLEAR FLOOR SPACE AT LEAST 60" IN DIAMETER OR A CLEAR SPACE 56"x63". DOORS ARE NOT PERMITTED TO ENCR OACH INTO THIS SPACE.
- 7) PER SECTION 1115B.7.2 THE WATER CLOSET SHALL BE LOCATED IN A SPACE WHICH PROVIDES A MINIMUM 28" CLEAR SPACE FROM A FIXTURE OR 32" CLEAR SPACE FROM A WALL ON ONE SIDE A MINIMUM OF 48" CLEAR SPACE SHALL BE PROVIDED FRONT OF THE WATER CLOSET.
- 8) WATER CLOSET:
 - A. THE HEIGHT OF THE WATER CLOSET SEAT SHALL BE BETWEEN 17" AND 19",
 - B. THE CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PITCHING OR TWISTING OF THE WRIST.
 - C. THE CONTROLS FOR FLUSH VALVES SHALL BE MOUNTED ON THE SIDE OF THE TOILET AREA AND BE NO MORE THAN 44" ABOVE THE FLOOR.
 - D. THE FORCE REQUIRED TO ACTIVATE THE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS OF FORCE.
 - E. IN ALTERATIONS WHERE THE EXISTING FIXTURE IS LESS THEN 15" HIGH, A 3" SEAT SHALL BE PERMITTED.
- 9) URINALS IN ACCESSIBLE RESTROOMS SHALL MEET THE FOLLOWING REQUIREMENTS PER SECTION 115B.34 AND 1503.1.2
 - A. THE RIM OF AT LEAST ONE URINAL SHALL PROJECT 14" FROM THE WALL AND BE LOCATED 17" MAXIMUM ABOVE THE FLOOR.
 - B. THE FORCE REQUIRED TO ACTIVATE THE FLUSH VALVE SHALL BE A MAXIMUM OF 5 POUNDS OF FORCE.
 - C. THE CONTROL MECHANISM SHALL BE LOCATED A MAXIMUM OF 44" ABOVE THE FLOOR.
 - D. A MINIMUM OF 30"x48" CLEAR FLOOR SPACE SHALL BE PROVIDED IN FRONT OF THE URINAL.
- 10) LAVATORIES SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS PER SECTION 1115B.9.1, 1115B.9.1.1, 1504.1.2,3.
 - A. A MINIMUM OF 30"x48" CLEAR SPACE SHALL BE PROVIDED IN FRONT OF THE LAVATORY FOR FORWARD APPROACH. THE CLEAR SPACE MAY INCLUDE KNEE AND TOE SPACE BENEATH THE FIXTURE.
 - B. THE CLEAR SPACE BENEATH LAVATORIES SHALL BE A MINIMUM OF 29" HIGHx30" WIDEx8" DEEP AT THE TOP AND 9" HIGHx30" WIDE AND 17" DEEP AT THE BOTTOM FROM THE FRONT OF THE FIXTURE THE MAXIMUM HEIGHT OF THE COUNTER TOP SHALL BE 34".
 - C. ALL HOT WATER AND DRAIN PIPES UNDER THE LAVATORY SHALL BE INSULATED.
 - D. THE FAUCET CONTROLS AND OPERATING MECHANISM SHALL BE OF THE TYPE NOT REQUIRING TIGHT GRASPING, PINCHING OR TWISTING OR THE WRIST AND HAVE AN OPERATING FORCE OF NOT GREATER THAN 5 POUNDS. IF SELF-CLOSING VALVES ARE USED, THEY SHALL REMAIN OPEN FOR AT LEAST 10 SECONDS.

- 11) GRAB BARS SHALL COMPLY WITH THE FOLLOWING PER SECTION 1115B.8:
 - A. GRAB BARS SHALL BE LOCATED ON EACH SIDE OR ONE SIDE AND THE BACK OF THE PHYSICALLY DISABLED ACCESSIBLE TOILET STALL OR COMPARTMENT. THEY SHALL BE SECURELY ATTACHED 33" ABOVE THE FLOOR AND PARALLEL EXCEPT WHERE A TANK-TYPE TOILET IS USED WHICH OBSTRUCTS PLACEMENT AT 33". THE GRAB BAR MAY BE INSTALLED AS HIGH AS 36" PER SECTION 1115B.8.1
 - B. GRAB BARS AT THE SIDE SHALL BE AT LEAST 42" LONG WITH THE FRONT END POSITIONED 24" IN FRONT OF THE STOOL. TOTAL LENGTH OF BARS AT THE BACK SHALL NOT BE LESS THAN 36" PER SECTION 1115B.8.1
 - C. THE DIAMETER OR WIDTH OF THE GRAB BAR GRIPPING SURFACE SHALL BE 1-1/4" TO 1-1/2" OR THE SHAPE SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE. IF MOUNTED ADJACENT TO A WALL, THE SPACE BETWEEN THE WALL AND THE GRAB BAR SHALL BE 1-1/2" PER SECTION 1115B.8.2
- 12) PER SECTION 1115B.9.2 WHERE TOWEL, SANITARY NAPKINS, WASTE DISPOSAL AND OTHER SIMILAR DISPENSING AND DISPOSAL FIXTURES ARE PROVIDED, AT LEAST ONE OF EACH TYPE SHALL BE LOCATED WITH ALL OPERABLE PARTS WITHIN 40" OF THE FLOOR. PER SECTION 1115B.9.1.2 MIRRORS SHALL BE MOUNTED WITH THE BOTTOM EDGE NO HIGHER THAN 40" ABOVE THE FLOOR. TOILET TISSUE DISPENSERS SHALL BE LOCATED ON THE WALL WITHIN 12" OF THE FRONT EDGE OF THE TOILET SEAT PER SECTION 1115B.9.3

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

 <p>TECTONICS Architects Planners Engineers 501 W. BROADWAY, SUITE 210 SAN DIEGO, CA 92101 619.239.2151</p>	IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.		PLANS FOR THE CONSTRUCTION OF											
			ALTERATIONS TO MISSION BEACH LIFEGUARD STATION											
		TITLE 24 NOTES		T3.0										
		CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT		W.B.S. NO. S-00793										
		 2/1/12 FOR CITY ENGINEER DATE		ALEX GARCIA SECTION HEAD										
		<table border="1"> <tr> <th>DESCRIPTION</th> <th>BY</th> <th>APPROVED</th> <th>DATE</th> <th>FILMED</th> </tr> <tr> <td>ORIGINAL</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		DESCRIPTION	BY	APPROVED	DATE	FILMED	ORIGINAL					 PROJECT MANAGER
DESCRIPTION	BY	APPROVED	DATE	FILMED										
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				DESIGN ENGINEER										
				X LAMBERT COORDINATES										
		AS-BUILT _____ DATE STARTED _____ CONTRACTOR _____ DATE COMPLETED _____ INSPECTOR _____		32848- 3 -D										

C.A.C. TITLE 24 NOTES (NOT ALL NOTES APPLY)

DRINKING FOUNTAINS

- 1) WHERE WATER FOUNTAINS ARE PROVIDED THEY SHALL COMPLY WITH SECTION 1117B.1.
 - A. WATER FOUNTAINS SHALL BE LOCATED COMPLETELY IN AN ALCOVE OR OTHERWISE SO POSITIONED SO AS TO NOT ENROACH INTO PEDESTRIAN WAYS.
 - B. THE ALCOVE IN WHICH THE WATER FOUNTAIN IS LOCATED SHALL NOT BE LESS THAN 32" IN WIDTH AND 18" IN DEPTH.
 - C. SEE SECTION 809.0 OF THE CALIFORNIA PLUMBING CODE FOR ADDITIONAL REQUIREMENTS. NOTE: SEE FIGURE 31-3 OF TITLE 24 FOR SPECIFIC DIMENSION REQUIREMENTS.

SPECIAL HAZARDS

- 1) OBJECTS PROJECTING FROM WALLS WITH THEIR LEADING EDGES BETWEEN 27" AND 80" ABOVE THE FINISHED FLOOR SHALL PROTRUDE NO MORE THAN 4" INTO WALKS, HALLS, CORRIDORS, PASSAGeways OR AISLES. OBJECTS MOUNTED AT OR BELOW 27" ABOVE THE FINISHED FLOOR MAY PROTRUDE ANY AMOUNT. FREESTANDING OBJECTS MOUNTED ON POSTS OR PYLONS MAY OVERHANG 12" MAXIMUM FROM 27" TO 80" ABOVE THE GROUND SURFACE OR FINISHED FLOOR PER SECTION 1121B.1
- 2) IF CARPET OR CARPET TILE IS USED ON A GROUND OR FLOOR SURFACE IN A COMMON USE AREA, IT SHALL HAVE FIRM BACKING OR NO BACKING. THE MAXIMUM PILE HEIGHT SHALL BE 1/2". EXPOSED EDGES OF CARPET SHALL BE FASTENED TO FLOOR SURFACES AND HAVE TRIM ALONG THE ENTIRE EDGE OF THE EXPOSED EDGE AND TRIM SHALL COMPLY WITH THE REQUIREMENTS FOR CHANGES IN LEVEL PER SECTION 1124B2&3

FIRE DEPARTMENT NOTES

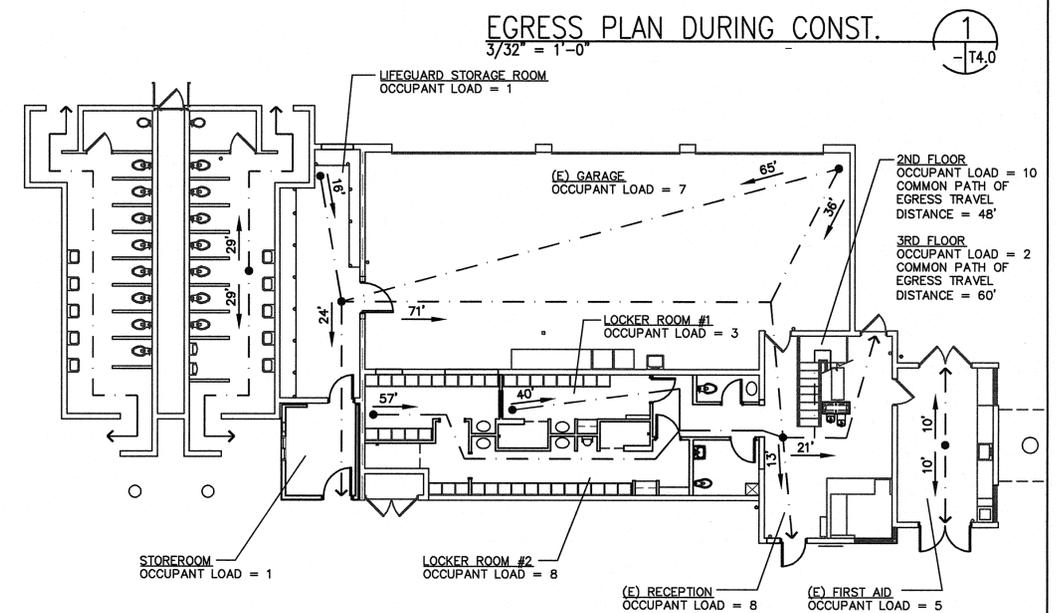
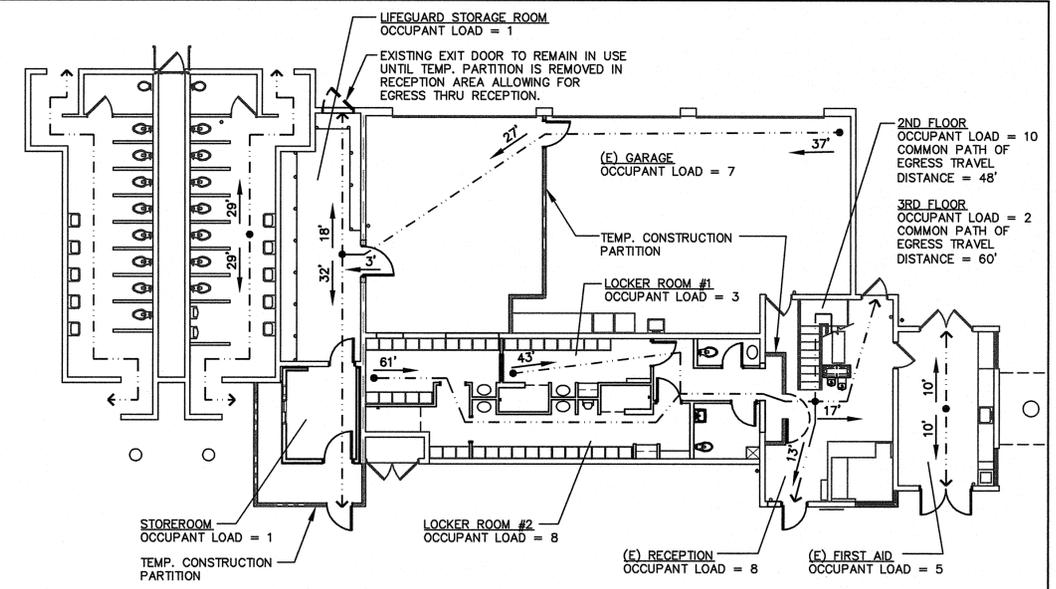
- 1) BUILDINGS UNDERGOING CONSTRUCTION, ALTERATION OR DEMOLITION SHALL BE IN ACCORDANCE WITH CFC ARTICLE 87 (UFC/CFC SEC. 8701).
- 2) ADDRESS SHALL BE PROVIDED FOR ALL NEW AND EXISTING BUILDINGS IN A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY (UFC/CFC SEC. 901.4.4, FHPS POLICY P-00-6).
- 3) DECORATIVE MATERIALS SHALL BE MAINTAINED IN A FLAME RETARDANT CONDITION. (CAL CODE REGS., TIT. 19, SEC. 3.08, 3.21, UFC/CFC SEC. 2501.5).
- 4) AT LEAST ONE FIRE EXTINGUISHER WITH A MINIMUM RATING OF 2A10BC SHALL BE PROVIDED WITHIN 75' MAXIMUM TRAVEL DISTANCE FOR EACH 6000 SQ. FT. OR PORTION THEREOF ON EACH FLOOR. (UFC/CFC SEC. 1002, UFC STANDARD 10-1, CAL. CODE REGS., TIT. 19, 3.29).
- 5) COMPLETE PLANS AND SPECIFICATIONS FOR FIRE ALARM SYSTEMS; FIRE-EXTINGUISHING SYSTEMS, INCLUDING AUTOMATIC SPRINKLERS AND WET & DRY STANDPIPES; HALON SYSTEMS AND OTHER SPECIAL TYPES OF AUTOMATIC FIRE-EXTINGUISHING SYSTEMS; BASEMENT PIPE INLETS; AND OTHER FIRE-PROTECTION SYSTEMS AND APPURTENANCES THERETO SHALL BE SUBMITTED TO FIRE AND HAZARD PREVENTION SERVICES FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. (UFC/CFC SEC. 1001.3)
- 6) FIRE-EXTINGUISHING SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH UBC/CBC SEC. 904 AND COMPLY WITH UBC STANDARDS 9-1 AND 9-2.
- 7) ALL VALVES CONTROLLING THE WATER SUPPLY FOR AUTOMATIC SPRINKLER SYSTEMS AND WATER FLOW SWITCHES ON ALL SPRINKLER SYSTEMS SHALL BE ELECTRONICALLY MONITORED WHERE THE NUMBER OF SPRINKLERS IS 100 OR MORE. (UBC/CBC SEC. 1003.3.1)
- 8) FIRE ALARM SYSTEMS SHALL BE IN ACCORDANCE WITH UFC/CFC SEC. 1007.
- 9) AT LEAST ONE FIRE EXTINGUISHER WITH A MINIMUM RATING OF 4-A-20BC SHALL BE PROVIDED OUTSIDE EACH MECHANICAL, ELECTRICAL, OR BOILER ROOM. (UFC/CFC SEC. 1002, UFC STANDARD 10-1, CAL. CODE REGS., TIT 19, SEC. 3.29)
- 10) FIRE PROTECTION, INCLUDING FIRE APPARATUS ACCESS ROADS AND WATER SUPPLIES FOR FIRE PROTECTION, SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING TIME OF CONSTRUCTION. (UFC/CFC SEC. 901.3, 8704.2, 8704.3)

ELECTRICAL NOTES

- 1) ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2004 CALIFORNIA ELECTRICAL CODE.
- 2) ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE CITY OF CHULA VISTA LIGHTING POLLUTION ORDINANCE.
- 3) ALL INTERIOR LIGHTING SYSTEMS SHALL COMPLY WITH CALIFORNIA ENERGY COMMISSION STANDARDS.

MECHANICAL NOTES

- 1) LAVATORY FAUCETS IN RESTROOMS OF COMMERCIAL PROJECTS SHALL BE THE SELF-CLOSING TYPE.
- 2) SHOWERS AND TUB/SHOWER COMBINATIONS SHALL BE PROVIDED WITH MIXING VALVES PER CPC SEC. 420.0.
- 3) EACH FAUCET SHALL NOT EXCEED A WATER FLOW RATE OF 2.2 GPM.
- 4) EACH SHOWERHEAD SHALL NOT EXCEED A WATER FLOW RATE OF 2.5 GPM.
- 5) EACH TOILET SHALL BE THE ULTRA LOW FLUSH TYPE.
- 6) EACH URINAL SHALL HAVE A WATER CONSUMPTION OF NOT MORE THAN 1 GALLON PER FLUSH.
- 7) VACUUM BREAKERS SHALL BE PROVIDED AT ALL HOSE BIBBS.
- 8) FLOOR DRAINS OR SIMILAR TRAPS DIRECTLY CONNECTED TO THE DRAINAGE SYSTEM AND SUBJECT TO INFREQUENT USE SHALL BE PROVIDED WITH AN APPROVED AUTOMATIC MEANS OF MAINTAINING THEIR WATER SEALS.
- 9) INSULATION MATERIAL SHALL MEET THE CALIFORNIA QUALITY STANDARDS PER ENERGY EFFICIENCY STANDARDS SEC. 118.
- 10) DOORS AND WINDOWS SHALL MEET THE MINIMUM INFILTRATION REQUIREMENTS PER ENERGY EFFICIENCY STANDARDS SEC. 116.
- 11) ALL PIPING AND DUCTWORK SHALL BE INSULATED CONSISTENT WITH THE REQUIREMENTS OF ENERGY EFFICIENCY STANDARDS SEC. 118, 123, 124 AND CMC TABLE 6-D AS APPLICABLE.
- 12) ALL HVAC SYSTEMS SHALL MEET THE CONTROL REQUIREMENTS OF ENERGY EFFICIENCY STANDARDS SEC. 112, 122 AS APPLICABLE.
- 13) ALL HVAC EQUIPMENT AND APPLIANCES SHALL MEET THE REQUIREMENTS OF ENERGY EFFICIENCY STANDARDS SEC. 111, 115, 120-129 AS APPLICABLE.
- 14) SERVICE WATER HEATING SYSTEMS AND EQUIPMENT SHALL COMPLY WITH ENERGY EFFICIENCY STANDARDS SEC. 113.
- 15) SMOKE DETECTORS SHALL BE PROVIDED AT SUPPLY AIR DUCTS OF AIR MOVING SYSTEMS EXCEEDING 2000 CFM PER CMC SEC. 608.
- 16) PERMANENT LADDER/ACCESS TO ROOF MOUNTED EQUIPMENT SHALL COMPLY WITH CMC SEC. 307.
- 17) BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH CPC SEC. 701.0.
- 18) ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
- 19) CHEMICAL WASTE PIPING SHALL COMPLY WITH CPC SEC. 811.0.
- 20) ALL STORAGE WATER HEATING EQUIPMENT SHALL BE PROVIDED WITH AN APPROVED, LISTED EXPANSION TANK OR OTHER DEVICE DESIGNED FOR INTERMITTENT OPERATION FOR THERMAL EXPANSION CONTROL PER CPC SEC. 608.3.
- 21) CROSS CONNECTION PROTECTION SHALL BE PROVIDED AT ALL POTABLE WATER SUPPLIED APPLIANCES AND EQUIPMENT EXCEPT THOSE SPECIFIC ITEMS LISTED IN INFORMATION BULLETIN 103.
- 22) WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENTS DUE TO SEISMIC MOTION PER CPC SEC. 510.5.
- 23) MATERIALS EXPOSED WITHIN A DUCT OR PLENUM SHALL COMPLY WITH CMC SEC. 601.1.3.
- 24) CHLORINATED POLYVINYL CHLORIDE (CPVC) SHALL NOT BE USED FOR INTERIOR WATER SUPPLY PIPING PER STATE HEALTH & SAFETY CODE SEC. 17921.9.
- 25) HVAC EQUIPMENT AND WATER HEATERS SHALL COMPLY WITH CMC CHAP. 3.
- 26) MEDIUM PRESSURE GAS PIPING SHALL BE LABELED EVERY FIVE FEET.



COMMON PATH OF EGRESS TRAVEL ALLOWABLE LENGTH = 75'
EXIT ACCESS TRAVEL DISTANCE ALLOWABLE LENGTH = 200'

EGRESS PLAN AFTER CONST.

SPECIFICATION NO. 5651
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		TITLE 24 NOTES		
		CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT		W.B.S. NO. S-00793
		FOR CITY ENGINEER: Alex Garcia 2/1/12		ALEX GARCIA SECTION HEAD
		DESCRIPTION BY APPROVED DATE FILMED		Jihad Sleman PROJECT MANAGER
		ORIGINAL		DESIGN ENGINEER
		AS-BUILT		X LAMBERT COORDINATES
		CONTRACTOR _____ DATE STARTED _____		32848- 4 -0
		INSPECTOR _____ DATE COMPLETED _____		



I AM THE DESIGNER/OWNER IN RESPONSIBLE CHARGE OF THIS TENANT IMPROVEMENT PROJECT; I HAVE INSPECTED THE SITE/PREMISES AND DETERMINED THAT EXISTING CONDITIONS ARE IN FULL COMPLIANCE WITH CURRENT SITE ACCESSIBILITY REQUIREMENTS TO THE EXTENT REQUIRED BY LAW.
 ANDREW C. CHEN, ARCHITECT C-10872 DATE 10/24/11 TECTONICS

IF THE BUILDING INSPECTOR DETERMINES NONCOMPLIANCE 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.

PROPERTY OF THE CITY OF SAN DIEGO

24'-0" MIN. CLEAR

STRANDWAY

VENTURA PLACE

ENLARGED SITE PLANS, SEE
 1 -A0.2
 2 -A0.2

EXISTING STRUCTURE TO REMAIN (WAVE HOUSE)

PROPERTY OF THE CITY OF SAN DIEGO

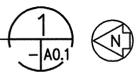
ACCESSIBLE PATH OF TRAVEL FROM THE PUBLIC STREET

OCEAN FRONT WALK ±125'-0"

ACCESSIBLE PATH OF TRAVEL

SITE PLAN
 3/32" = 1'-0"

0371BASE



NOTE: SURROUNDING PROPERTY IS OWNED BY THE CITY OF SAN DIEGO. PROPERTY LINE EXTENDS OUT BEYOND THE SCOPE OF THIS DRAWING.

SPECIFICATION NO. 5651
 CITY CONTRACT, W.B.S. NO. S-00793

GENERAL NOTES

- A. LOCATION OF UG UTILITIES IS UNKNOWN
- B. SEE SHEET A0.2 FOR REQUIRED SITE DEMOLITION
- C. SEE SHEET A0.2 FOR NEW SITING CONSTRUCTION

KEYNOTES

- 1 (E) PUBLIC PARKING
- 2 (E) PARKING STALLS TO BE RESTRIPE - SEE SHEET A0.2
- 3 (E) FENCE AND CURB
- 4 ENCLOSED LIFEGUARD VEHICLE YARD
- 5 PLANTERS W/ PALM TREES
- 6 (E) AC PAVED BOARDWALK
- 7 (E) PAINTED STRIPE AT EDGE OF BOARDWALK, RE-STRIPE AS REQ'D AFTER REPAIR OF PAVEMENT
- 8 (E) BEACH
- 9 LINE OF FALSE BLDG ABOVE
- 10 (E) COLUMN
- 11 (E) PUBLIC TOILET ROOMS W/ ACCESSIBLE FACILITIES
- 12 (E) BEACH SHOWERS
- 13 (E) SEA WALL
- 14 (N) ACCESSIBLE TOILET TO SERVE STAFF AND PUBLIC VISITORS
- 15 LOCATION OF TEMPORARY LIFEGUARD STAFF FACILITIES DURING CONSTRUCTION - CONTRACTOR TO PROVIDE WATER, SEWER AND POWER HOOK-UP, COORD. W/ CITY ENGINEER
- 16 CONTRACTOR STAGING AREA DURING CONSTRUCTION - COORD. FINAL LOCATION W/ CITY ENGINEER

LEGEND

- [Solid Grey] AREA OF NEW ADDITION
- [Dashed Line] ACCESSIBLE PATH OF TRAVEL
- [Hatched] AREA OF EXISTING CONCRETE JOINT REPAIR - SEE KEYNOTE 17
- [Stippled] AREA OF EXISTING ASPHALT REPAIR - SEE KEYNOTE 18
- [Circle with Center] (E) LIGHT POLE
- [Circle with 'x'] x 10.00 (E) ELEVATION (IN FEET) PER CITY SURVEY DATED 9/20/11

TECTONICS
 Architects
 Planners
 Engineers
 501 W. BROADWAY, SUITE 210
 SAN DIEGO, CA 92101
 619.239.2151



IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.

SYM	DESCRIPTION	DATE

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO MISSION BEACH LIFEGUARD STATION

EXISTING SITE PLAN

CITY OF SAN DIEGO, CALIFORNIA
 ENGINEERING DEPARTMENT

FOR CITY ENGINEER: *[Signature]* DATE: 2/1/12

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL				

AS-BUILT: _____ DATE STARTED: _____ DATE COMPLETED: _____

CONTRACTOR: _____ INSPECTOR: _____

W.B.S. NO. S-00793

ALEX GARCIA SECTION HEAD

Jihad Sleman PROJECT MANAGER

DESIGN ENGINEER

LAMBERT COORDINATES

32848-5 -D

- ### DEMOLITION KEYED NOTES
- LINE OF SAWCUT - VERIFY LOCATION AS REQ'D TO ALLOW FOR INSTALLATION OF (N) RAMP
 - LINE OF (E) 6" CONC. CURB. REMOVE PORTION REQ'D TO INSTALL (N) RAMP - VERIFY
 - COMPLETELY REMOVE (E) PAINTED STRIPING, SYMBOLS, ETC. BY SANDBLASTING METHOD, FROM (E) ASPHALT PAVING
 - (E) CONCRETE PAVING. REMOVE CONC. RAMP AS REQ'D FOR INSTALLATION OF (N) RAMPS AS NOTED BELOW VERIFY
 - EXISTING LIGHT TO REMAIN - PROTECT IN PLACE
 - EXISTING FENCE TO REMAIN - PROTECT IN PLACE
 - APPROX. LOCATION OF TEMP. CONSTRUCTION BARRIER, TYP. SEE GENERAL NOTE "B".

- ### NEW CONSTRUCTION KEYED NOTES
- PROVIDE (N) CONCRETE RAMP. CONCRETE TO BE 5 1/2" THICK PER REGIONAL STANDARDS.
 - NEW CONC. CURB TO MATCH (E). TOP OF CURB TO BE FLUSH W/ TOP OF (E) CONC. SIDEWALK ADJACENT - VERIFY
 - POWER WASH AND CLEAN (E) PAVEMENT AND PROVIDE (N) SEAL COAT O/ (E) ASPHALT PAVING WITHIN THIS AREA
 - PROVIDE (N) PAINTED STRIPING LETTERING & SYMBOLS THIS AREA AS SHOWN IN DETAIL 1/A0.3
 - PATCH CONCRETE PAVEMENT. SEE DETAIL 8 / S3.1 FOR JOINT OF NEW CONC. AND EXISTING CONC. SLABS. PROVIDE SURF FINISH TME.
 - BORDER GROOVING DETAIL - SEE 8/A.03.
 - VAN ACCESSIBLE LOADING AISLE
 - SIGNAGE - SEE 3/A0.3
 - WHEEL STOP - SEE 1/A0.3
 - EXISTING LIGHT TO REMAIN
 - EXISTING FENCE TO REMAIN
 - EXISTING STRUCTURE
 - DETECTABLE WARNING SURFACE - SEE DETAIL 2/A0.3
 - APPROX. LOCATION OF TEMP. CONSTRUCTION BARRIER, TYP. SEE GENERAL NOTE "B".
 - VAN ACCESSIBLE PARKING SPACE - PROVIDE SIGN PER DETAIL 4/A0.3
 - SIGNAGE - SEE 4/A0.3
 - THE SURFACE OF ACCESSIBLE PARKING SPACES AND ACCESS AISLES MUST NOT EXCEED A SLOPE OF 2% IN ALL DIRECTIONS.

- ### GENERAL NOTES
- LOCATION OF UG UTILITIES IS UNKNOWN - VERIFY LOCATION BEFORE PERFORMING ANY EXCAVATION WORK
 - PROVIDE TEMPORARY CONSTRUCTION BARRIERS NECESSARY FOR PROTECTION OF THE PUBLIC DURING CONSTRUCTION. VERIFY FINAL LOCATION - COORD. W/ CITY ENGINEER.
 - CONCRETE PAVING, GUTTERS AND ASPHALT INSTALLATION, INCLUDING JOINTING, REINFORCING, ETC. SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE SAN DIEGO REGIONAL STANDARDS FOR SIMILAR DETAILS/APPLICATIONS - VERIFY.
 - CONTRACTOR SHALL TAKE MEASURES AS REQ'D TO PREVENT CONTAMINATION OF STORM WATER RUNOFF.

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION

A0.2

ENLARGED SITE PLAN

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S. NO. S-00793

Andrew C. Chen 2/1/12
FOR CITY ENGINEER DATE

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL				

DESIGN ENGINEER
PROJECT MANAGER
X
LAMBERT COORDINATES

AS-BUILT
CONTRACTOR DATE STARTED
INSPECTOR DATE COMPLETED

32848-6-D

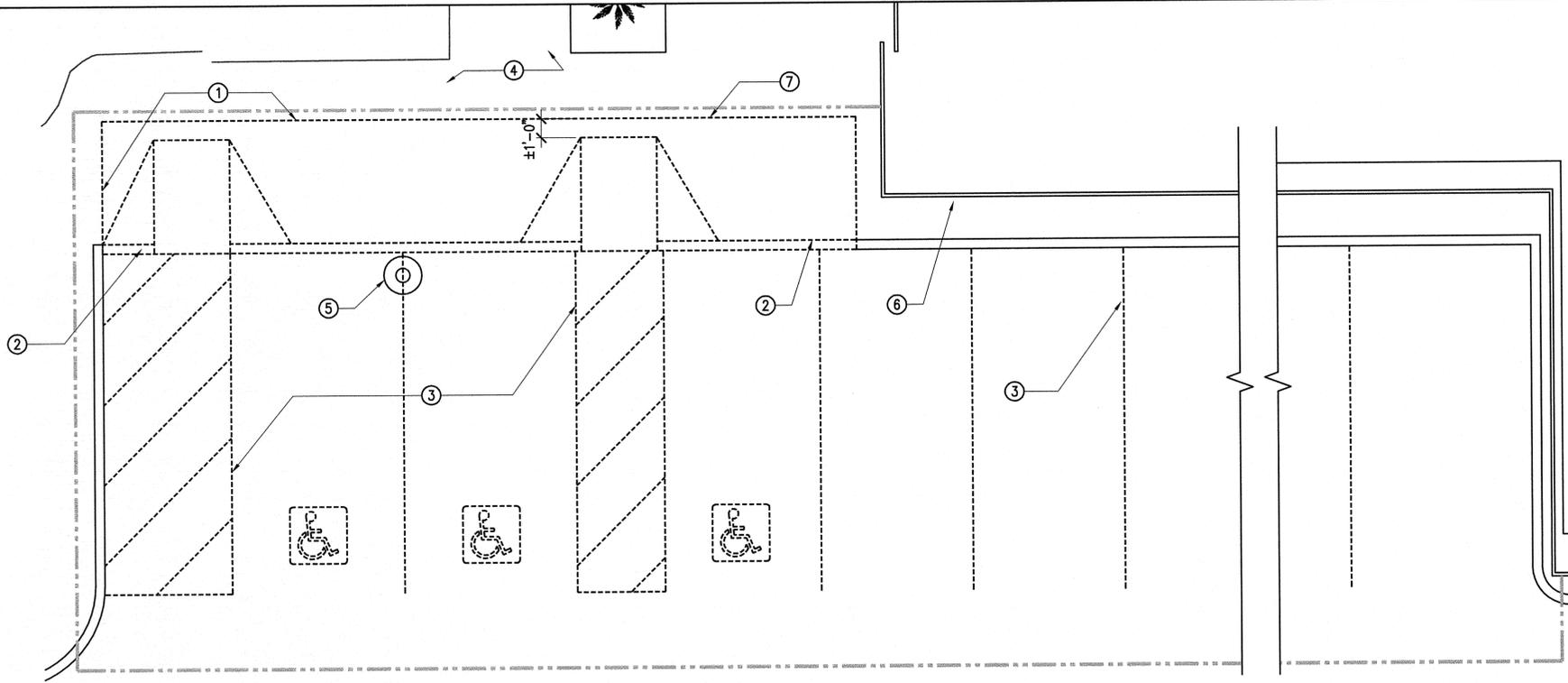
TECTONICS
Architects
Planners
Engineers

501 W. BROADWAY, SUITE 210
SAN DIEGO, CA 92101
619.239.2151

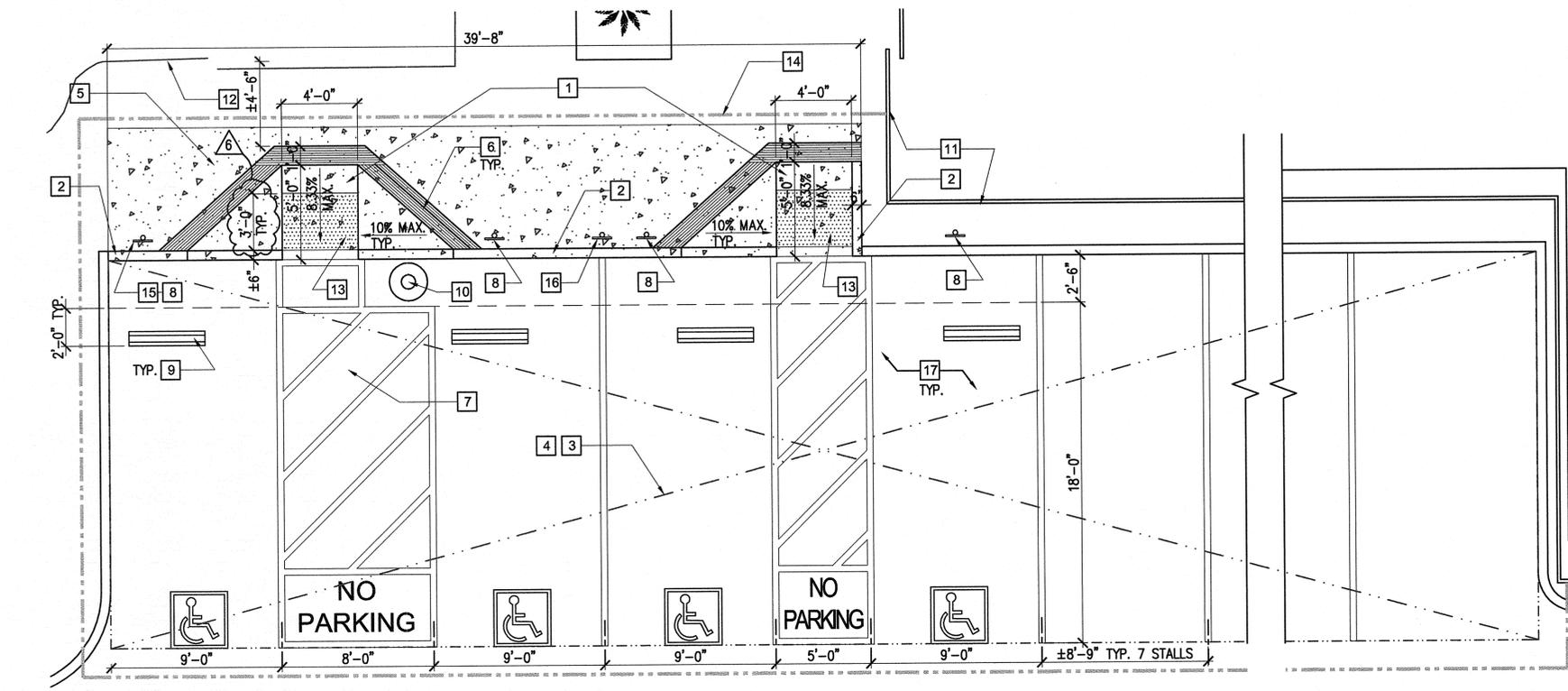
IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.

SYM	DESCRIPTION	DATE

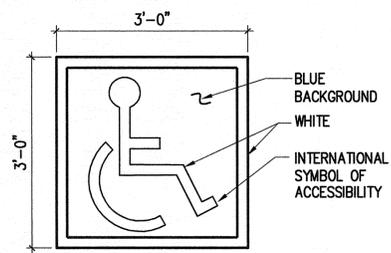
ANDREW C. CHEN
No. C 10872
REN 6/2013
STATE OF CALIFORNIA



ENLARGED SITE PLAN - REQ'D DEMOLITION AT PARKING LOT
1/4"=1'-0" 0371BASE 1 -A0.2

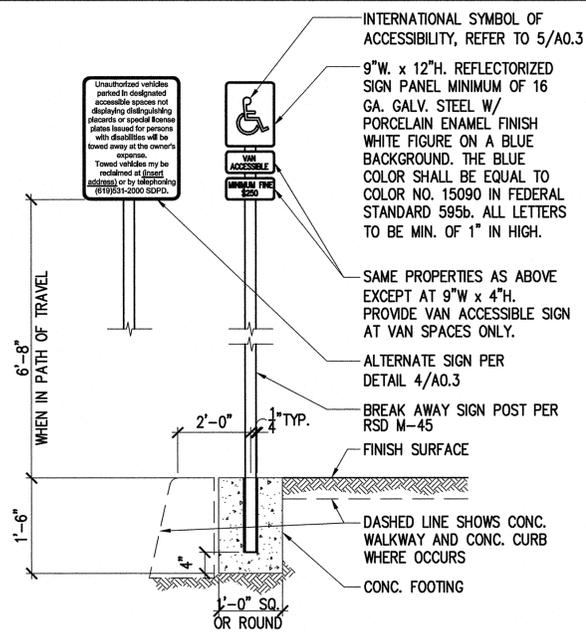


ENLARGED SITE PLAN - NEW CONSTRUCTION AT PARKING LOT
1/4"=1'-0" 0371BASE 2 -A0.2

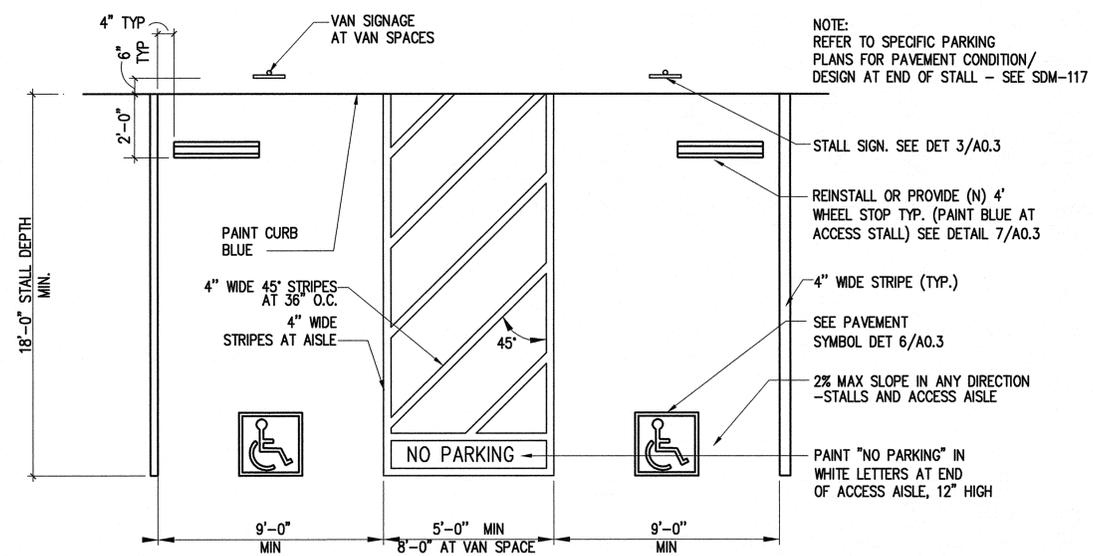


- NOTES:**
- FIGURE AND BORDER SHALL BE PAINTED WHITE ON A BLUE BACKGROUND.
 - REFER TO 5/A0.3 FOR ISA PROPORTIONS
 - SYMBOL SHALL COMPLY WITH THE CITY OF SAN DIEGO STANDARD DRAWINGS, SDM-117.

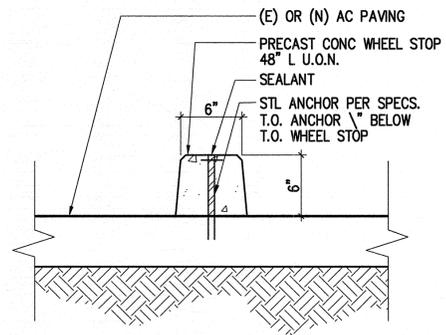
PAVEMENT SYMBOL DETAIL
 NTS A371D1L05 A0.3 | A0.3



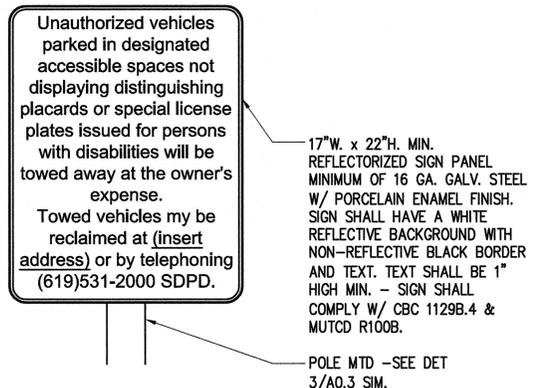
D.P. PARKING SIGN
 1" = 1'-0" A371DPPKSGN A0.3 | A0.3



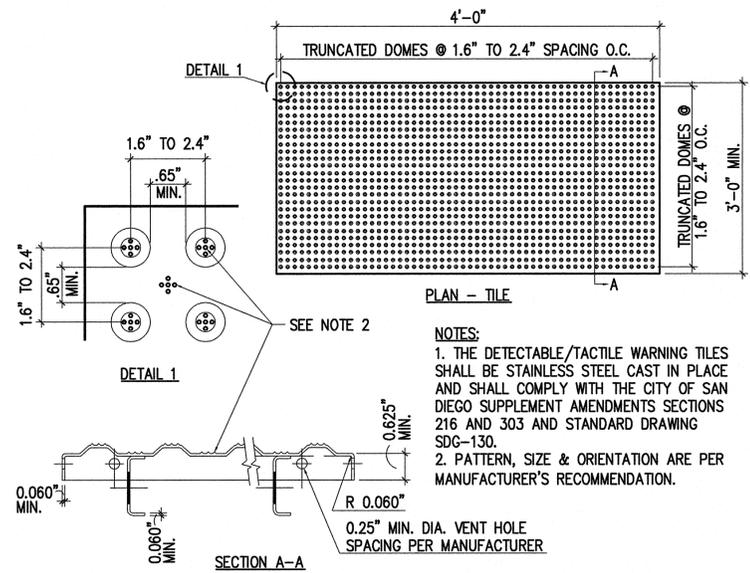
TYPICAL UNIVERSAL ACCESSIBLE PARKING STALL DETAIL
 NTS A371D1L12 A0.1 | A0.3



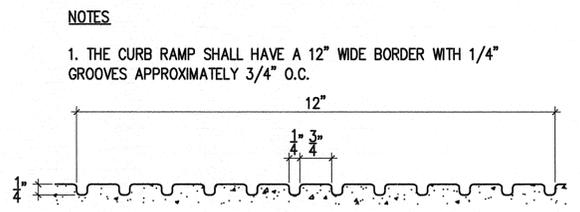
WHEEL STOP DETAIL
 SCALE: 1-1/2"=1'-0" A371D1L04 A0.3 | A0.3



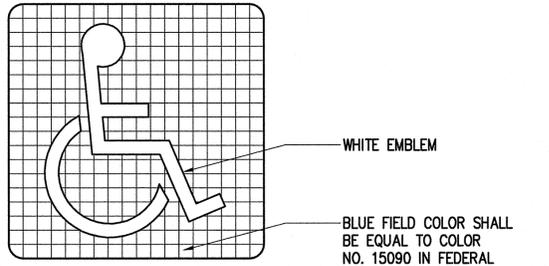
SIGN DETAIL
 NTS A371LOAD A0.3 | A0.3



DETECTABLE WARNING SURFACE DETAIL
 NTS A0371WARNING A0.3 | A0.3



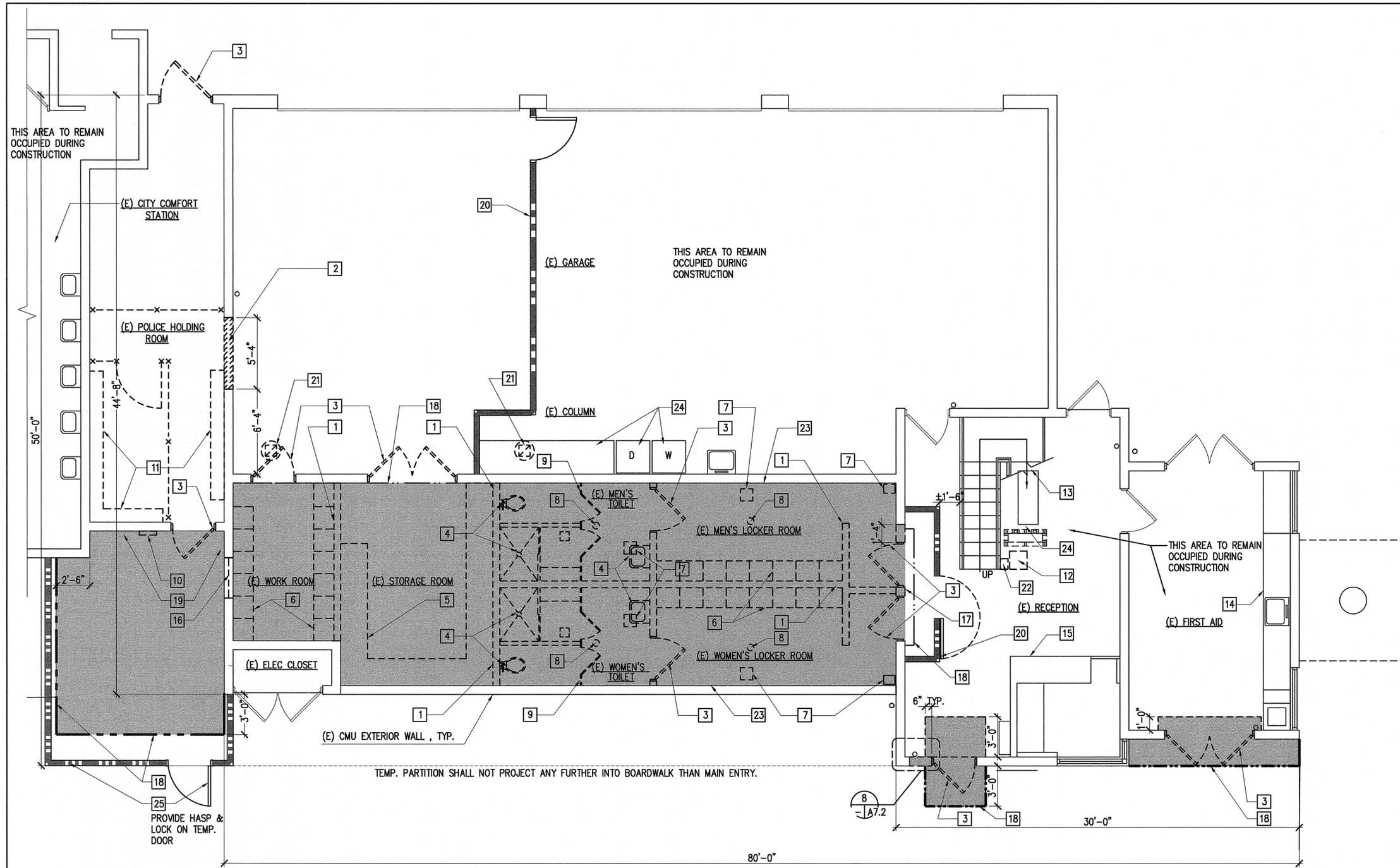
BORDER GROOVING DETAIL
 SCALE: 6"=1'-0" A0371GROOVE A0.3 | A0.3



INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA)
 1" = 1'-0" A371D1L15 A0.3 | A0.3

SPECIFICATION NO. 5651
 CITY CONTRACT, W.B.S. NO. S-00793

TECTONICS Architects Planners Engineers 501 W. BROADWAY, SUITE 210 SAN DIEGO, CA 92101 619.239.2151	IF SHEET SIZE IS LESS THAN 22" x 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.	PLANS FOR THE CONSTRUCTION OF ALTERATIONS TO MISSION BEACH LIFEGUARD STATION A0.3									
	<table border="1"> <thead> <tr> <th>SYM</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	SYM	DESCRIPTION	DATE							INTERIOR DETAILS CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT W.B.S. NO. S-00793 FOR CITY ENGINEER: <i>Abel Garcia</i> 2/1/12 DATE: 2/1/12 PROJECT MANAGER: <i>JINDO STEWART</i> DESIGN ENGINEER: <i>ALEX GARCIA</i> AS-BUILT: <input type="checkbox"/> CONTRACTOR: _____ DATE STARTED: _____ INSPECTOR: _____ DATE COMPLETED: _____
SYM	DESCRIPTION	DATE									



KEYED NOTES

- 1 REMOVE (E) PARTITION COMPRISED OF 6" H CONG CURB AND WOOD STUDS, ETC.
- 2 SAWCUT AND REMOVE 4'-8" X 7'-10" HIGH PORTION OF (E) 8" THICK CMU WALL FOR INSTALLATION OF (N) DOOR & FRAME, VERIFY LOCATION - SEE 3/S3.1
- 3 REMOVE (E) HM DOOR AND FRAME
- 4 REMOVE (E) PLUMBING FIXTURES, SPD
- 5 REMOVE (E) BUILT-IN SHELVING UNITS - TURN OVER TO LIFEGUARDS - VERIFY
- 6 REMOVE (E) LOCKER UNITS - TURN-OVER TO LIFEGUARDS FOR REUSE ELSEWHERE
- 7 REMOVE (E) EXHAUST VENTS AT CLG, SMD
- 8 REMOVE (E) FLOOR DRAINS, SPD
- 9 REMOVE (E) TOILET PARTITIONS AND SHOWER ENCLOSURES
- 10 REMOVE (E) WALL-MOUNTED LIGHT, SED
- 11 REMOVE (E) WOOD BENCH AND PIPE SUPPORTS, DISPOSE
- 12 REMOVE (E) DRINKING FOUNTAIN AND FLOOR SINK- MODIFY (E) PIPING AS REQ'D AND REROUTE INTO NEW SHORT WALL TO ACCOMMODATE (N) DRINKING FOUNTAIN - SPD.
- 13 (E) STEEL FRAME STAIRCASE TO REMAIN
- 14 (E) COUNTER W/ SINK, CABINETS, ETC. TO REMAIN
- 15 (E) RECEPTION COUNTER TO REMAIN
- 16 REMOVE (E) METAL LOUVER, PATCH OPENING IN CMU WALL TME.
- 17 REMOVE (E) 8" X 8" CMU COLUMN. PROVIDE TEMP SHORING OF STRUCTURE ABOVE TO MAINTAIN EXISTING STRUCTURAL INTEGRITY OF BUILDING - COORDINATE REMOVAL, SHORING ETC. W/ INSTALLATION ON (N) SUPPORT LINTEL. REVIEW & COORDINATE ALL SHORING W/CITY ENGR. PRIOR TO BEGINNING WORK.
- 18 APPROX. LOCATION OF SAWCUT AT AREA OF (E) 4" CONG. SLABS OR ASPHALT TO BE REMOVED - VERIFY
- 19 REROUTE (E) 2 ELECTRICAL CONDUIT MOUNTED AT FACE OF BLDG. TO CLEAR (N) CONSTRUCTION - VERIFY
- 20 PROVIDE TEMP. PARTITION W/ REQUIRED SWING DOOR(S) FOR ACCESS CONSISTING OF 8' HIGH 1/2" PLYMD ON 2X4 FRAMING BRACE AS REQ'D. - COORDINATE FINAL LOCATIONS W/ CITY ENGINEER.
- 21 EXISTING EXHAUST FAN ON ROOF ABOVE TO BE REPLACED - SMD.
- 22 REROUTE EXISTING OUTLET TO NEW SHORT WALL - SED.
- 23 REMOVE EXISTING WOOD TOWEL RACKS.
- 24 (E) CABINET / EQUIPMENT TO REMAIN.
- 25 PROVIDE TEMP. PARTITION W/ REQUIRED SWING DOOR(S) FOR ACCESS CONSISTING OF 8' HIGH 1/2" PLYMD ON 2X4 FRAMING BRACE AS REQ'D. COORDINATE LOCATION W/ CITY ENGINEER.

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

FIRST FLOOR PLAN- REQUIRED DEMOLITION
1/4"=1'-0"

GENERAL NOTES

- A. REMOVE GYP. BD. AT CEILINGS OF MEN'S & WOMEN'S LOCKER ROOMS AND MEN'S & WOMEN'S TOILET ROOMS - EXISTING 6" WOOD JOISTS TO REMAIN FOR REUSE - VERIFY CONDITION OF WOOD REMAINING.
- B. REMOVE NOTED (E) PLUMBING FIXTURES AND ASSOCIATED PIPING - CAP BEHIND WALLS OR BELOW FLOORS WHERE APPLICABLE - SPD.
- C. WHEREVER ITEMS ARE NOTED TO BE REMOVED. CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF INDICATED ITEMS OFF-SITE BY LEGALLY APPROVED METHODS.
- D. CONTRACTOR SHALL TAKE MEASURES AS REQ'D TO PREVENT CONTAMINATION OF STORM WATER RUNOFF.
- E. IN THE AREA TO BE RENOVATED, THE WORK SHALL INCLUDE REMOVAL OF ALL REQUIRED ACCESSORIES, FITTING AND ATTACHED INCIDENTAL ITEMS SO THAT THERE ARE CLEAR AND CLEAN CMU WALLS AND THE CEILING IS STRIPPED BACK TO THE BARE STRUCTURE UNLESS NOTED OTHERWISE. SEE MECH, ELEC, AND PLUMBING DRAWINGS FOR ADDITIONAL DEMOLITION WORK.
- F. CONTRACTOR TO REMOVE ALL PAINT DOWN TO THE BARE CMU AT ANY EXISTING CMU WALL SURFACE TO RECEIVE CERAMIC WALL TILE. FINAL SURFACE TO BE PREPPED PER TILE MANUFACTURER'S INSTRUCTIONS / RECOMMENDATIONS. REFER TO INTERIOR ELEVATIONS ON SHEET A5.1
- G. REMOVE WOOD GUARDRAIL AND ASSOCIATED FLASHING ON ROOF WALKWAY - REFER TO EXTERIOR ELEVATIONS ON SHEETS A3.1 AND A3.2 AND DETAIL 8/A9.1

LEGEND

- AREA OF (E) CONG. SLAB / PAVEMENT TO BE REMOVED
- (E) CMU WALL TO REMAIN
- (E) CMU WALL TO BE REMOVED
- (E) DOOR AND FRAME TO BE REMOVED
- (E) CHAIN LINK FENCE TO BE REMOVED
- TEMPORARY PARTITION SEE NOTE 20

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SAN DIEGO, CA 92101
619.239.2151

ANDREW C. CHEN
No. C 10872
REN 6/2013
STATE OF CALIFORNIA

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SYM	DESCRIPTION	DATE

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION

A1.1

FIRST FLOOR DEMOLITION PLAN

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S. NO. S-00793

ALEX GARCIA
SECTION HEAD

FOR CITY ENGINEER: *[Signature]* DATE: 2/1/12

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL				

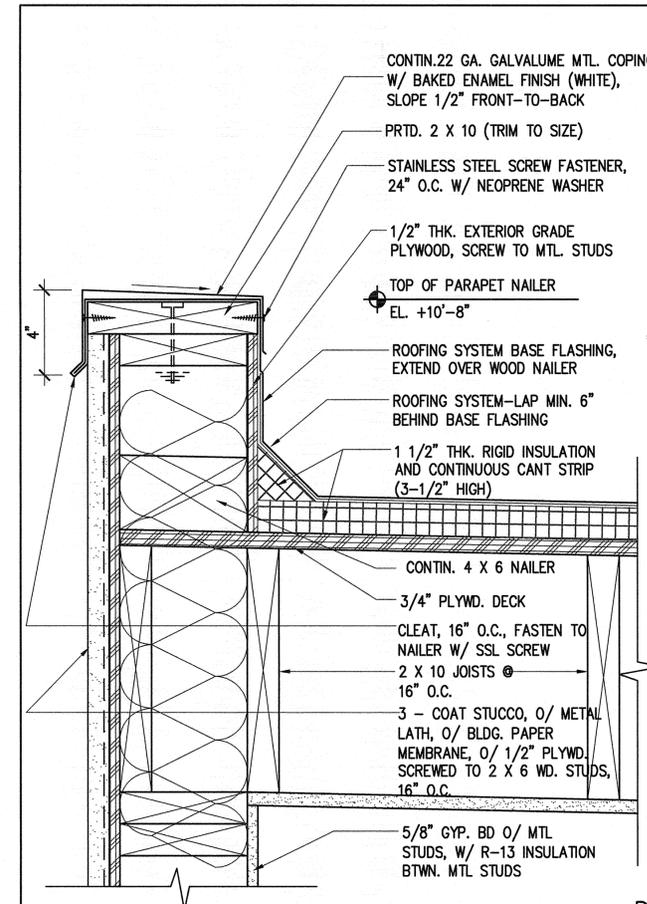
PROJECT MANAGER: JIHAD SLEIMAN

DESIGN ENGINEER: X

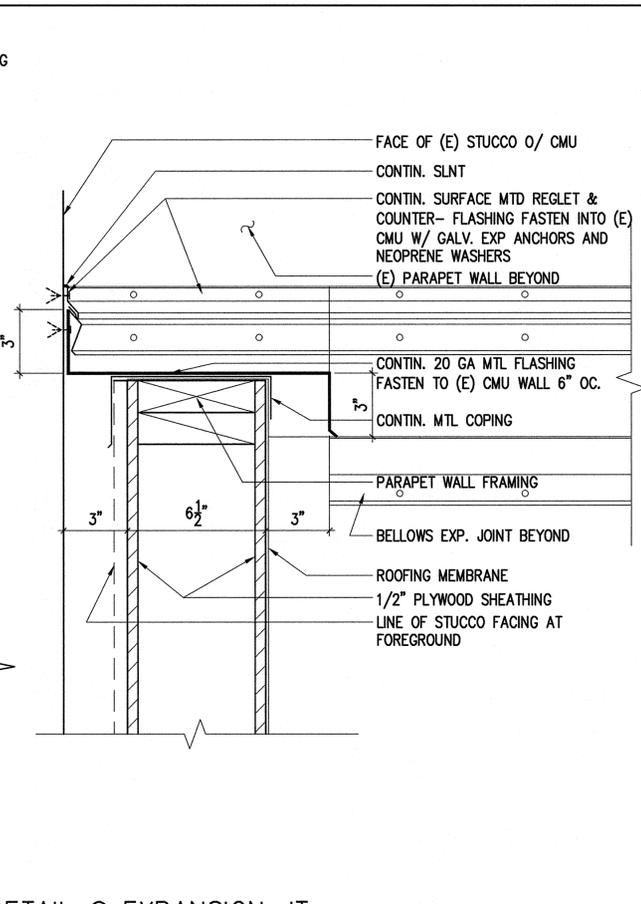
AS-BUILT: LAMBERT COORDINATES

CONTRACTOR: DATE STARTED: 32848-8-D

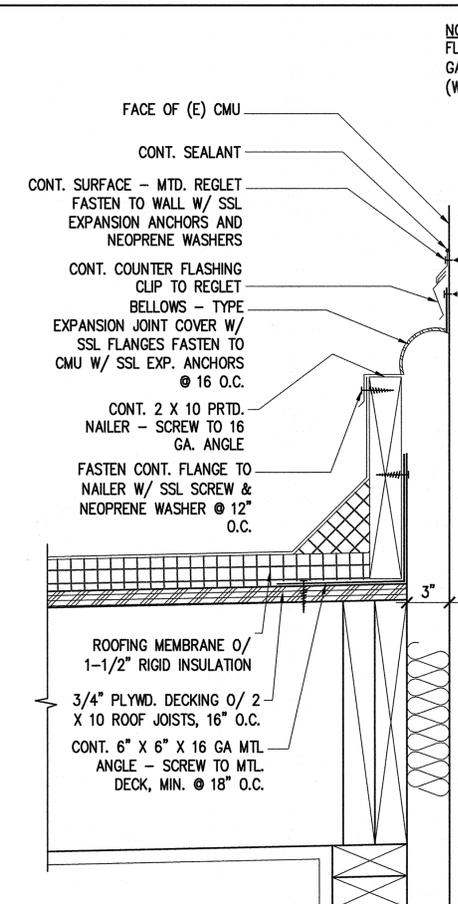
INSPECTOR: DATE COMPLETED:



DETAIL AT ROOF PARAPET
3" = 1'-0"
A371PARPET
4
-A2.1

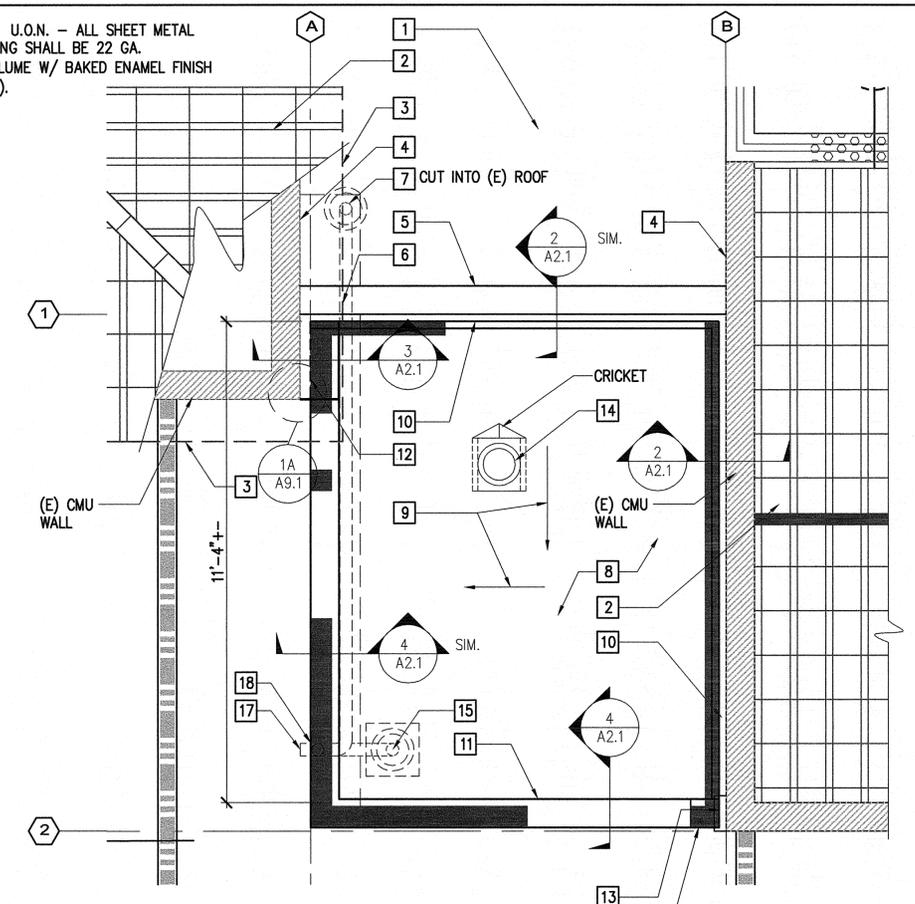


DETAIL @ EXPANSION JT COVER @ PARAPET WALL
3" = 1'-0"
A371EXPJT
3
-A2.1

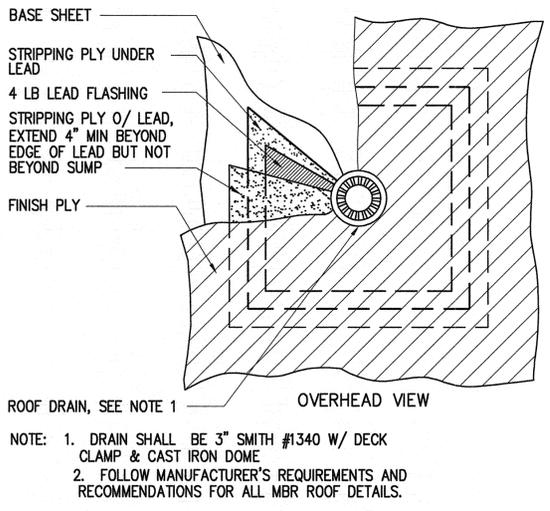


DETAIL AT ROOF EXPANSION JOINT
3" = 1'-0"
A371EXPJT-ROOF
3
-A2.1

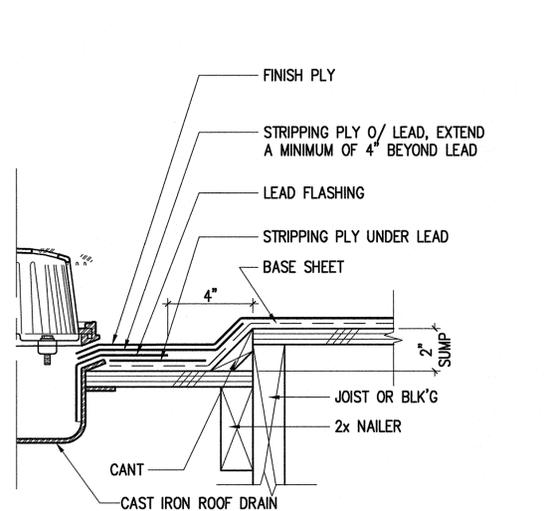
NOTE: U.O.N. - ALL SHEET METAL FLASHING SHALL BE 22 GA. GALVALUME W/ BAKED ENAMEL FINISH (WHITE).



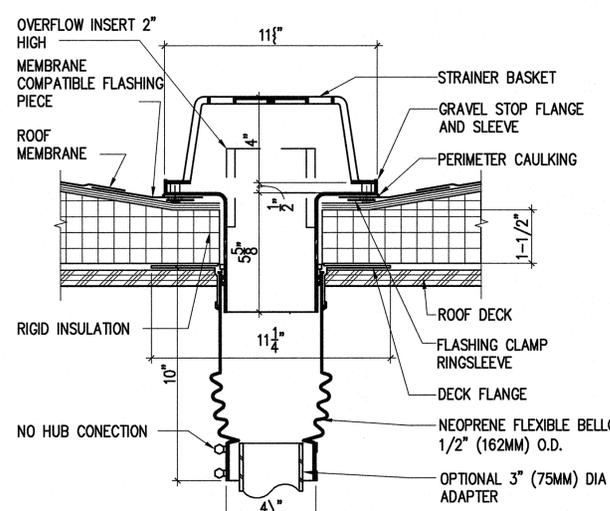
ROOF PLAN - NEW ADDITION
1/2" = 1'-0"
A371BASE
2
-A2.1



ROOF DRAIN
3" = 1'-0"
A371RFDR
6
-A2.1



ROOF DRAIN
3" = 1'-0"
A371RFDR
6
-A2.1



ROOF DRAIN
3" = 1'-0"
A371-RFDR
5
-A2.1

KEYED NOTES

- | | |
|---|--|
| 1 (E) ASPHALT ROOFING SYSTEM, TO REMAIN | 9 SLOPE OF ROOF, 1/4" / FT EACH WAY TO DRAIN |
| 2 (E) CLAY TILE ROOF AT ADJACENT STRUCTURE | 10 ROOF EXPANSION JOINT COVER AT (E) CMU WALLS, SEE 2/A2.1 |
| 3 LINE OF ROOF OVERHANG FROM ADJACENT STRUC. | 11 (N) PARAPET WALLS W/ GALV. MTL. COPING |
| 4 WALL OF ADJACENT STRUCTURE (CUTAWAY VIEW, FOR CLARITY) | 12 EXPANSION JOINT COVER AT TOP OF PARAPET FASTENED TO (E) CMU WALLS - SEE 3/A2.1 |
| 5 (E) CMU PARAPET WALL | 13 TRIM (E) CLAY TILE TO ALLOW (N) WATER TIGHT INSTALLATION OF EXPANSION JOINT COVER |
| 6 CLOSE OFF (E) SCUPPER & FILL IN OPENING - PROVIDE WEATHERTIGHT SEAL | 14 ROOF-MOUNTED EXHAUST FAN O/ 8" PRTD WOOD CURB -SMD. |
| 7 PROVIDE (N) ROOF DRAIN AT (E) ROOF, SEE 6/A2.1. STRIP IN (N) PLYS OF ROOFING TO PROVIDE FULLY WORKING & WATER TIGHT ROOF DRAIN WITH LINE ROUTED AS HIGH AS POSSIBLE INTO THE NEW ADDITION AS SHOWN ON DETAIL 1/A3.2 | 15 (N) ROOF DRAIN - SEE 5/A2.1 |
| 8 BUILT UP ASPHALT ROOFING SYSTEM AS SPECIFIED | 16 STEP DOWN TOP OF PARAPET WALL TO ACCOMMODATE CLAY TILE ROOF ADJACENT |
| | 17 PROVIDE DS. OUTLET AT 12" AFF. AT EXT. WALL BELOW |
| | 18 EMERGENCY OVERFLOW SCUPPER - 4x4 OPENING - CONTRACTOR SHALL FOLLOW SMACNA STANDARDS FOR SCUPPER CONSTRUCTION - SCUPPER TO BE FABRICATED FROM 22 GA GALV. MTL. |

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Pioneers
Engineers

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SYM	DESCRIPTION	DATE

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO MISSION BEACH LIFEGUARD STATION

A2.1

ROOF PLAN & DETAILS

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S. NO. S-00793

FOR CITY ENGINEER: Alex Garcia, 2/1/12

DATE: 2/1/12

SECTION HEAD: Alex Garcia

PROJECT MANAGER: Jirad Sleiman

DESIGN ENGINEER: X

LAMBERT COORDINATES: X

CONTRACTOR: _____ DATE STARTED: _____

INSPECTOR: _____ DATE COMPLETED: _____

32848-10 -D

KEYED NOTES

- 1 (E) WINDOW TO REMAIN
- 2 (N) ALUMINUM - FRAMED WINDOW PER SCHEDULE
- 3 (E) DOOR TO REMAIN
- 4 (N) FIBERGLASS DOOR & FRAME PER SCHEDULE - PATCH
(E) CMU & STUCCO FIN. AS REQ'D TME.
- 5 (E) STUCCO TO REMAIN
- 6 (N) 8" THICK CMU INFILL WALL W/ STUCCO FACING TME - SEE DETAIL 4/A7.2
- 7 REPLACE GLAZING AT (E) WINDOWS W/ 1/4" POLY-CARBONATE
- 8 (N) WALL-MOUNTED REMOVABLE WHITE BOARD W/ 3 SIDED WOOD FRAME SECURED TO (E) CMU WALL - SEE DETAIL 3/A9.1
- 9 WALL MOUNTED ISA SIGN - SEE DETAIL 5/A0.3.
- 10 NEW GUARDRAIL - SEE DETAIL 8/A9.1
- 11 (E) CLAY - TILE ROOF SYSTEM TO REMAIN
- 12 (N) STUCCO - FACED WALL AT (N) ADDITION - SEE SHEET A3.2
- 13 STUCCO - FACED TRIM, PRD. 2 X 6 ALIGN BOTTOM W/ (E) SOFFIT AT ADJACENT BLDG.
- 14 GALV. MTL. COPING AT TOP OF (N) PARAPET WALL
- 15 TOP OF (E) PARAPET WALL BEYOND
- 16 2" VERTICAL EXPANSION JOINT - SEE DETAIL 1B/A9.1
- 17 2" VERTICAL EXPANSION JOINT BEYOND - SEE DETAIL 1A/A9.1
- 18 TOP OF (E) CONC. PAVEMENT PATCH CONC. TME.
- 19 PROVIDE 5/8" GYP. BD. O/ UNDERSIDE OF (E) & (N) 2 X 6" CLG. JOISTS @ 16" O.C. AT NEW CLG. JOISTS, PROVIDE CONT. 2 X 8 WD. LEDGERS AT (E) CMU WALLS SECURED W/ 1/2" WEDGE ANCHORS @ 16" O.C. SET INTO CMU SOLID-GROUTED CELLS. IF (E) CELLS ARE NOT SOLID GROUTED, DRILL AND FILL W/ GROUT. SUPPORT CLG. JOISTS FROM LEDGERS W/ PRE-FAB. GALV. SADDLE FASTENERS
- 20 (N) LOCKER UNITS - PROVIDE 4" HIGH CONC. CURB UNDER UNITS, SEE DETAIL 7/A10.1
- 21 (N) 4" CONC. FLOOR SLAB. W/ #3 REBAR @ 12" EACH WAY - SSD.
- 22 CONTIN. (E) CONC. FOUNDATION - VERIFY
- 23 (E) 2 X 10 ROOF JOISTS @ 16" O.C. W/ BRIDGING @ MIDSPAN
- 24 ROOF DRAIN DOWNSPOUT OUTLET - SPD.
- 25 RE-ROUTE EXISTING DOWNSPOUT TO DAYLIGHT AT GRADE. NEW DOWNSPOUT TO MATCH EXISTING SIZE, SHAPE AND MATERIAL.
- 26 16x16 BACKDRAFT DAMPER - SEE MECHANICAL DRAWINGS
- 27 SECURE LOOSE ROOF TILES AND REPLACE ALL MISSING ROOF TILES IN AREA INDICATED - MATCH EXISTING
- 28 EMERGENCY OVERFLOW SCUPPER - BOTTOM OF SCUPPER OPNG TO BE 2" ABOVE RIM OF ROOF DRAIN.
- 29 (N) SURFACE MOUNTED LIGHT FIXTURE, SED.
- 30 DOWNSPOUT HANGER - SEE DETAIL 7/A9.1
- 31 REMOVED DAMAGED PORTIONS OF STUCCO IN THIS AREA AND PATCH TO MATCH EXISTING - PAINT ENTIRE AREA TME.
- 32 REMOVE PAINT AND RUST FROM (E) COLUMNS AND ASSOCIATED PLATES & FASTENERS (4 LOCATIONS). USE WIRE BRUSH TO CAREFULLY REMOVE RUST DOWN TO BARE METAL AS MUCH AS POSSIBLE. REPAINT AS SCHEDULED.

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

GENERAL NOTES

EXTERIOR FINISH COLORS:
COLOR OF NEW MATERIALS SHALL MATCH THE COLOR OF (E).

STUCCO - MATCH (E) WHITE STUCCO FINISH.

ALUMINUM DOOR FRAMES - MATCH (E) BLUE PAINTED FINISH.

FIBERGLASS DOORS - WHITE, FRP.

WINDOW FRAMES - PROVIDE HIGH PERFORMANCE ORGANIC FINISH, COLOR TO MATCH (E) BLUE.

IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.

SYM	DESCRIPTION	DATE

TECTONICS
Architects
Pioneers
Engineers

501 W. BROADWAY, SUITE 210
SAN DIEGO, CA 92101
619.239.2151



PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION
A3.1

ELEVATIONS

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

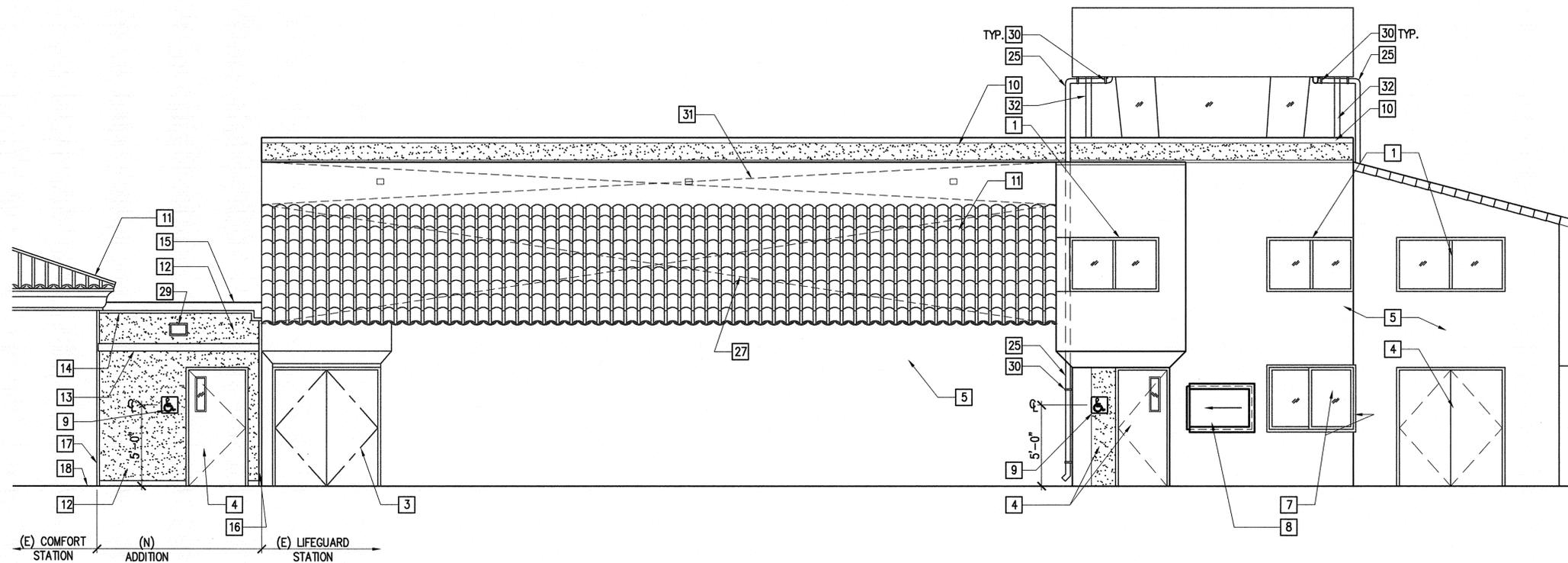
FOR CITY ENGINEER: *[Signature]* DATE: 2/1/12

SECTION HEAD: ALEX GARCIA

PROJECT MANAGER: JIRAD SLEMAN

DESIGN ENGINEER: X

LAMBERT COORDINATES: X



WEST ELEVATION

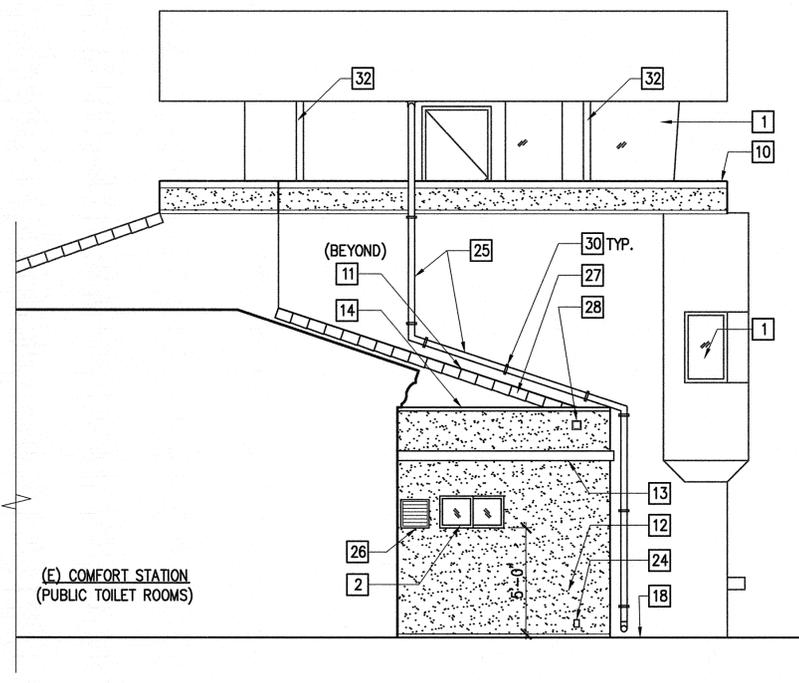
1/4"=1'-0"

TOP OF STATION
EL. 40.31

OBSERVATION TOWER
EL. 28.81

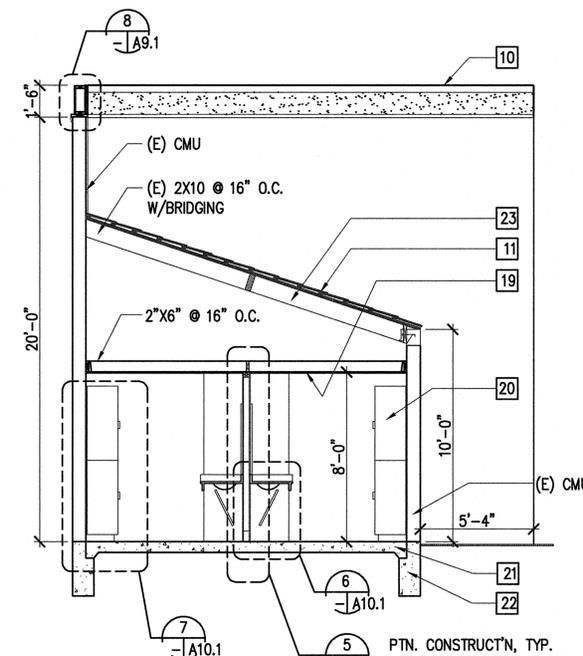
SECOND FLOOR
EL. 19.81

FIRST FLOOR DATUM
EL. 10.81
(FIRST FLOOR EL. VARIES)



NORTH ELEVATION

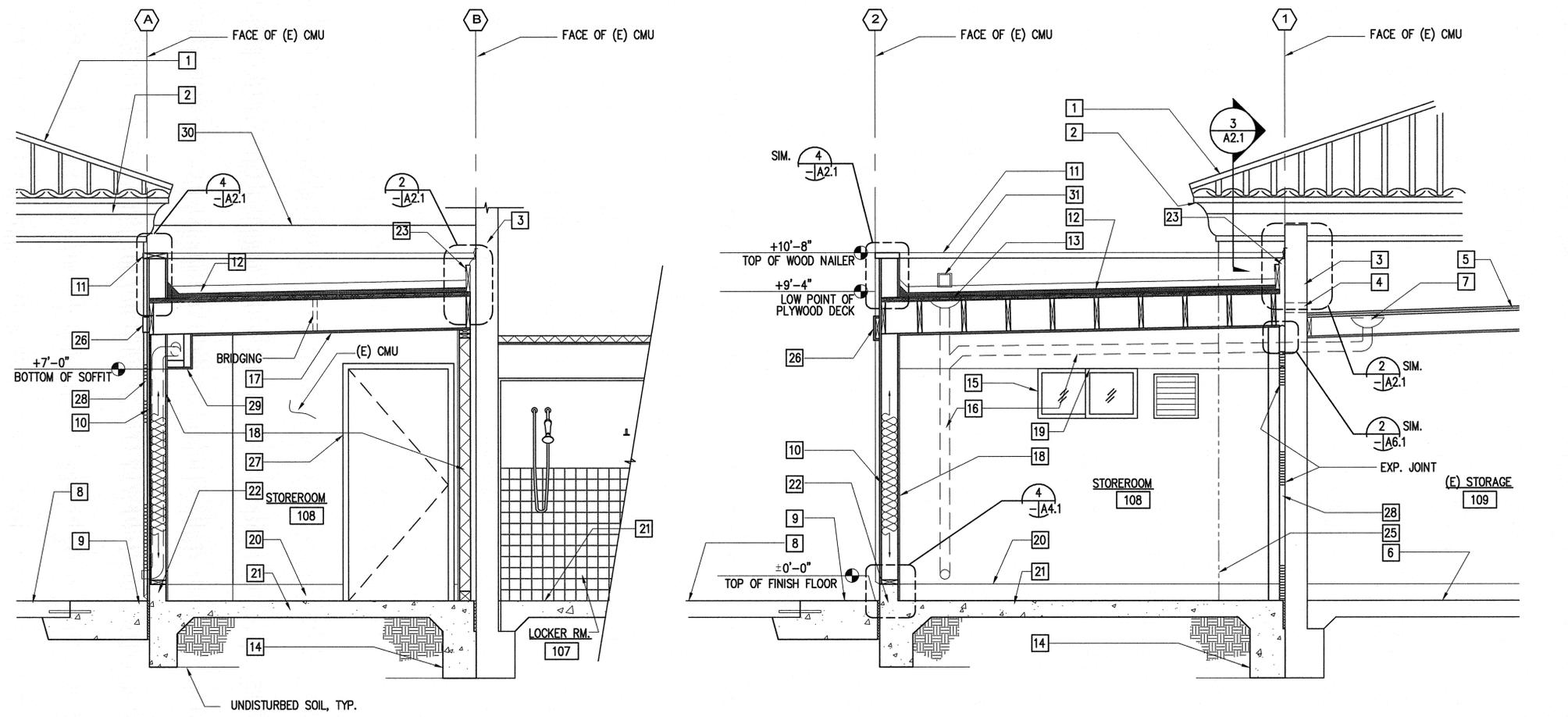
1/4"=1'-0"



SECTION

1/4"=1'-0"

PTN. CONSTRUCT'N, TYP.

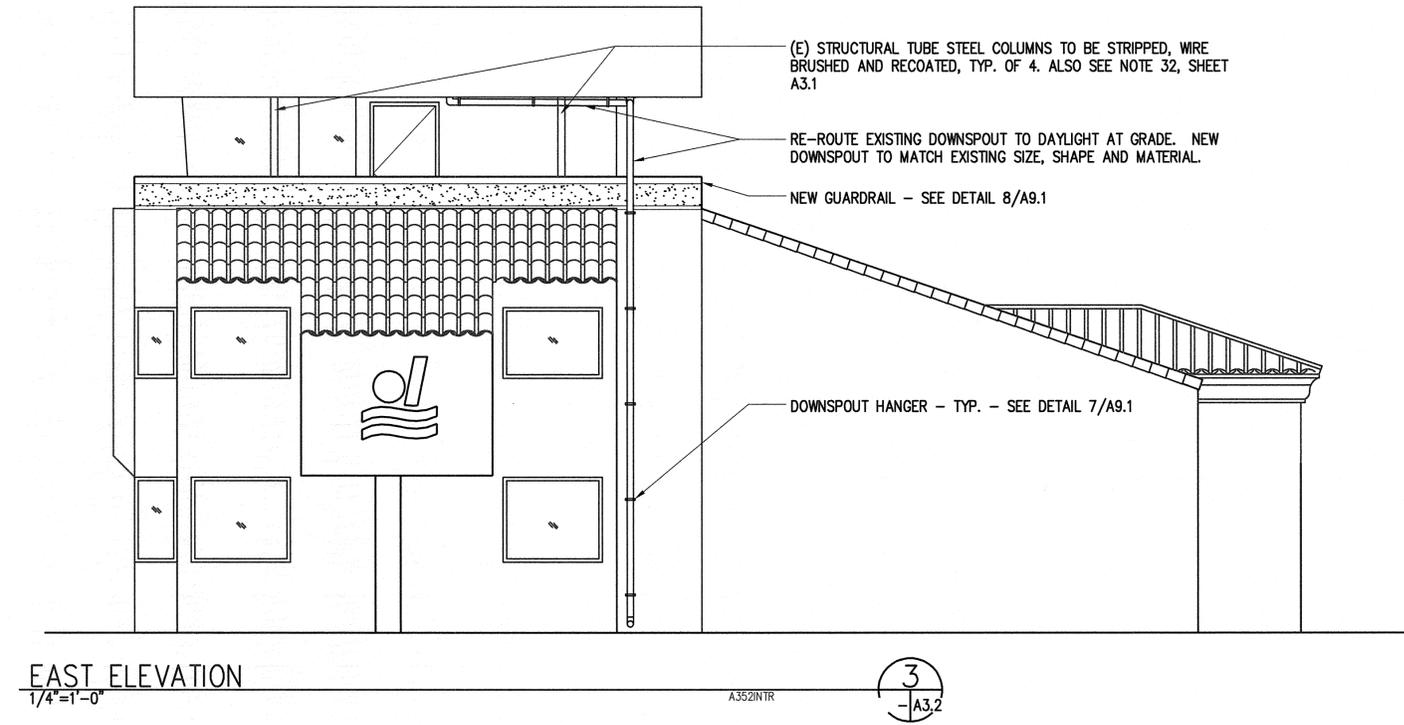


- ### KEYED NOTES
- 1 OUTLINE OF (E) SLOPING CLAY TILE ROOF BEYOND
 - 2 OUTLINE OF (E) TRIM AT FACE OF (E) BLDG BEYOND
 - 3 (E) 8" CMU WALL TO REMAIN
 - 4 REMOVE (E) SCUPPER OUTLET, FILL W/ MASONRY, TME
 - 5 TOP OF (E) ASPHALT ROOF AT (E) BLDG TO REMAIN
 - 6 TOP OF (E) CONC SLAB AT (E) BLDG
 - 7 PROVIDE (N) ROOF DRAIN AT (E) ROOF DECK, ROUTE DOWNSPOUT THROUGH (E) CMU WALL AND CONNECT TO (N) ROOF DRAIN. SPD.
 - 8 TOP OF (E) EXTERIOR CONC SLAB TO REMAIN
 - 9 PATCH PORTION OF (E) CONC SLAB W/ (N) CONC TME, SEE DETAIL 8/S3.1
 - 10 3-COAT STUCCO 0/ METAL LATH 0/ 15# ASPHALT IMPREGNATED FELT, 0/ 1/2" PLYWOOD, 0/ 2 X 6 WD. STUDS @ 16" O.C.
 - 11 METAL COPING AT TOP OF (N) PARAPET WALL
 - 12 ASPHALT ROOFING SYSTEM 0/ 1 1/2" THICK RIGID ROOF INSULATION 0/ PLYWOOD DECK'G 0/ 10" ROOF JOISTS
 - 13 (N) ROOF DRAIN, SPD
 - 14 (N) CONT. CONC. FOOTINGS - SSD.
 - 15 ALUM-FRAMED WINDOW UNIT PER SCHEDULE
 - 16 OUTLINE OF ROOF DRAIN DOWNSPOUT AT (N) WALL BEYOND, SPD
 - 17 5/8" GYP BD 0/ 2 X 10 ROOF JOISTS, 16" O.C.
 - 18 5/8" GYP BD 0/ 2X WOOD STUDS
 - 19 LINE OF GYP. BD. BULKHEAD AT REROUTED ROOF DRAIN BEYOND
 - 20 LINE OF 6" RESILIENT BASE BEYOND
 - 21 (N) REINF CONC SLAB, SSD
 - 22 6" HIGH REINF CONC CURB
 - 23 CONT ROOF EXPANSION JOINT AT (E) CMU WALL
 - 24 CONT INTERIOR EXPANSION JOINT
 - 25 LINE OF FACE OF (E) BLDG BEYOND
 - 26 STUCCO - CLAD 2 X 6 WOOD TRIM
 - 27 NEW HOLLOW METAL DOOR AND FRAME BEYOND
 - 28 (N) CONT VERTICAL EXPANSION JOINT BETWEEN (N) & (E) BLDG BEYOND, SEE DETAIL 2/A6.1
 - 29 FORM ENCLOSURE AT ROOF DRAIN LINE W/ 5/8" GYP BD 0/ 2X WD. FRAMING @ 16" O.C.
 - 30 TOP OF (E) CMU. PARAPET WALL AT STRUCTURE BEYOND
 - 31 EMERGENCY OVERFLOW SCUPPER - 4x4 OPENING, BTM. OF OPNG TO BE 2" ABOVE RIM OF ROOF DRAIN - CONTRACTOR SHALL FOLLOW SMACNA STANDARDS FOR SCUPPER CONSTRUCTION - SCUPPER TO BE FABRICATED FROM 22 GA GALV. MTL.

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

SECTION THRU ADDITION (LOOKING EAST)
1/2" = 1'-0"

SECTION THRU ADDITION (LOOKING NORTH)
1/2" = 1'-0"



EAST ELEVATION
1/4" = 1'-0"

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION
A3.2

BUILDING SECTIONS & ADDITION

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

FOR CITY ENGINEER: *[Signature]* DATE: 2/1/12

DESCRIPTION: ORIGINAL BY: APPROVED: DATE: FILMED: 8-6-12

DESIGN ENGINEER: ALEX GARCIA SECTION HEAD

CONTRACTOR: _____ DATE STARTED: _____ PROJECT MANAGER: JIM SLEMAN

INSPECTOR: _____ DATE COMPLETED: _____ DESIGN ENGINEER: _____ LAMBERT COORDINATES: X

TECTONICS
Architects
Planners
Engineers
501 W. BROADWAY, SUITE 210
SAN DIEGO, CA 92101
619.239.2151



IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.

SYM	DESCRIPTION	DATE

AS-BUILT
CONTRACTOR: _____ DATE STARTED: _____
INSPECTOR: _____ DATE COMPLETED: _____

W.B.S. NO. S-00793

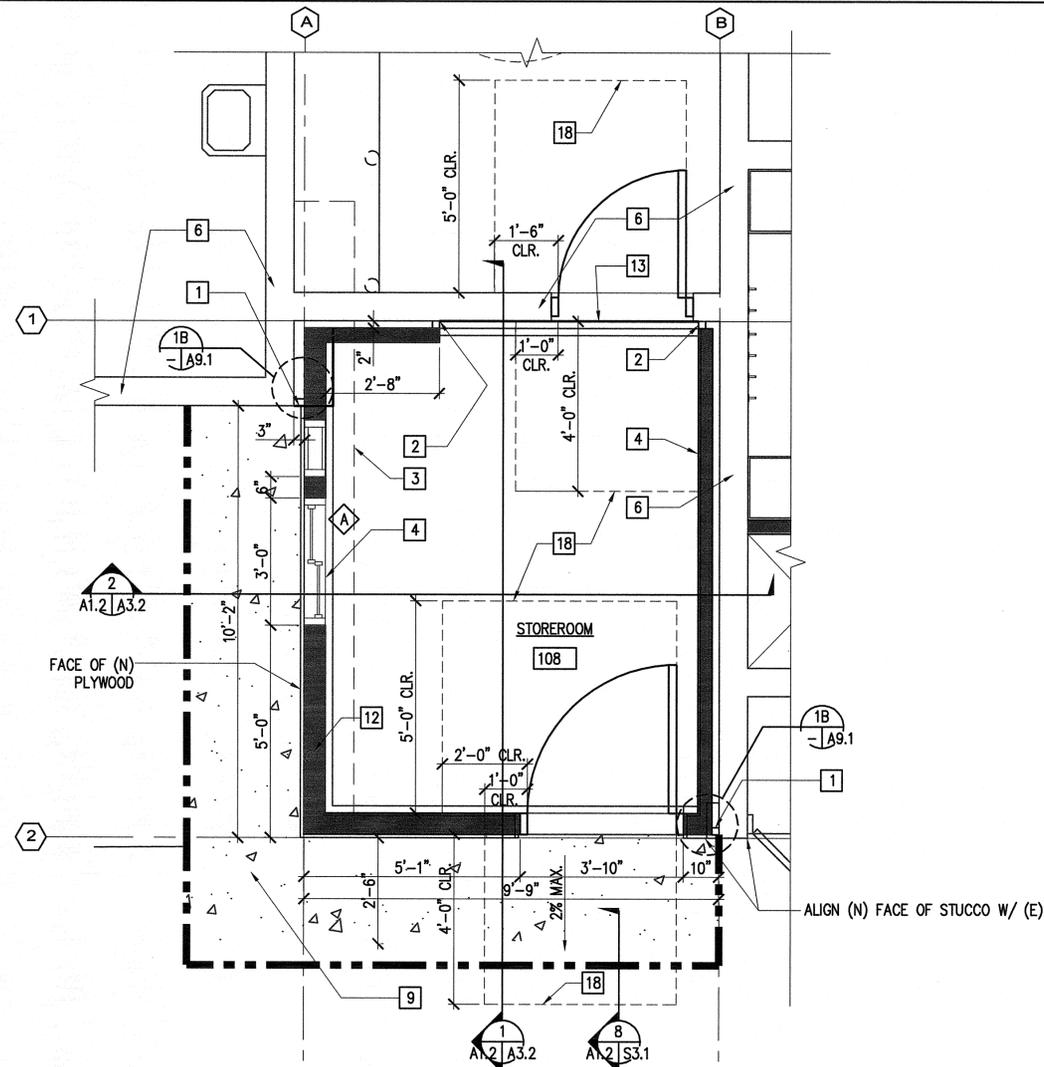
ALEX GARCIA SECTION HEAD

JIM SLEMAN PROJECT MANAGER

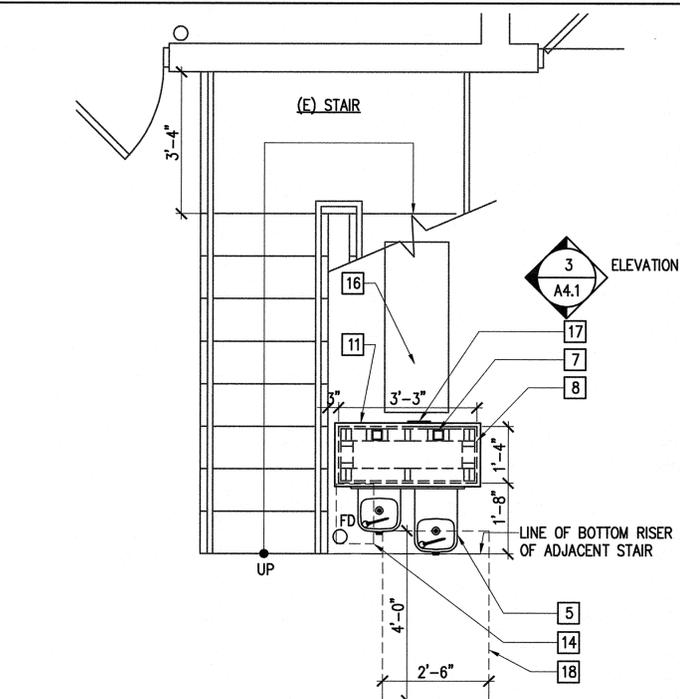
DESIGN ENGINEER

X LAMBERT COORDINATES

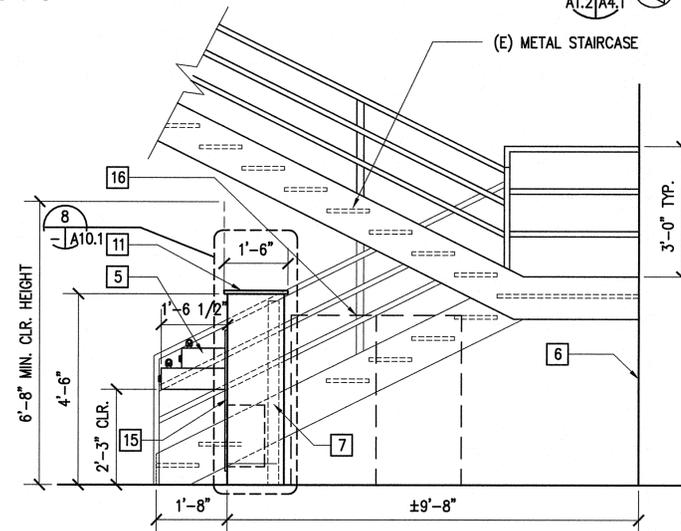
32848-12 -D



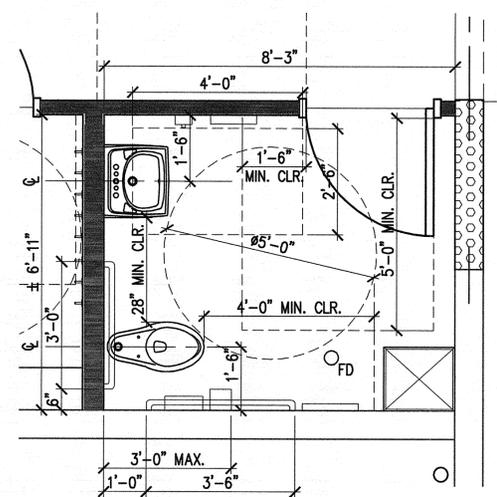
ENLARGED FLOOR PLAN - ADDITION
1/2" = 1'-0"



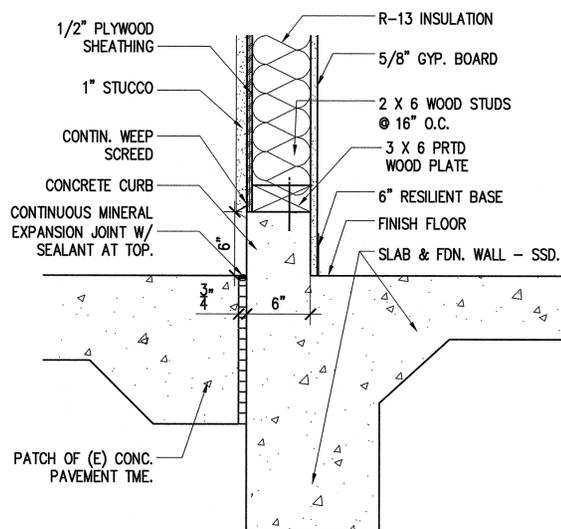
DRINKING FOUNTAIN BENEATH STAIRWAY
1/2" = 1'-0"



ELEV. @ SHORT WALL
1/2" = 1'-0"



ENLARGED RESTROOM PLAN
1/2" = 1'-0"



DETAIL @ CURB
1" = 1'-0"

KEYED NOTES

- 1 CONT. VERTICAL EXTERIOR 2" EXPANSION JOINT COVER
- 2 CONT. VERTICAL INTERIOR JOINT COVER - SEE DETAIL 2/A9.1 - VERIFY
- 3 LINE OF BULKHEAD SOFFIT AT DOWNSPOUT ENCLOSURE AT CLG. ABOVE - VERIFY
- 4 5/8" GYP. BD. 0/ 2X WD. STUDS @ 16" O.C.
- 5 ACCESSIBLE ELECTRIC WATER COOLER, DUAL HEIGHT, CONNECT TO (E) WASTE DRAIN AND DOM. WATER LINE W/ SHUT-OFF, SPD.
- 6 (E) CMU. WALL TO REMAIN
- 7 TUBE STEEL REINFORCING POST (TYPICAL OF 2) SEE DETAIL 10/A10.1
- 8 (N) SHORT WALL W/ 5/8" GYP. BD. 0/ 2X4 WOOD. STUDS AT 16" O.C. - SEE 8/A10.1
- 9 PATCH CONC. PAVEMENT TME.
- 10 (N) 6" RESILIENT BASE - TYP. BOTH SIDES OF SHORT WALL, SEE ROOM FINISH SCHEDULE
- 11 1 1/2" THICK SSM COUNTERTOP - SEE ROOM FINISH SCHEDULE.
- 12 3 1/2" ROOF DRAIN DOWNSPOUT - DAYLIGHT TO EXTERIOR ABOVE SILL PLATE
- 13 3/4" EXP. JOINT AT PAVEMENT W/SEALANT AT TOP, FLUSH W/SLAB, TYP - 2 SIDES.
- 14 REMOVE (E) FLOOR SINK AND REPLACE W/ FLOOR DRAIN. PATCH CONC. FLOOR, TME. ADJACENT FLOOR - COORD. W/PLUMBING.
- 15 5/8" GYP. BD. BOTH SIDES OF 2x WD. STUDS. - SEE DETAILS 8 & 10/A10.1
- 16 NEW STORAGE CABINET - TO BE PROVIDED BY LIFE GUARDS
- 17 PROVIDE ACCESS PANEL AS REQ'D FOR STUDOR VENT
- 18 LINE OF REQUIRED ACCESSIBLE MANEUVERING CLEARANCES AT DOORS OR CLEAR FLOOR SPACE AT PLUMBING FIXTURES.

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

GENERAL NOTES

- A. SEE SHEET A10.2 FOR TYP. MOUNTING HEIGHTS OF ALL ACCESSIBLE WALL MOUNTED ITEMS
- B. ALL DIMENSIONS ARE TO FACE OF STUD, FACE OF CMU OR TO CENTER LINES, U. O. N.

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Architects
Planners
Engineers

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SAN DIEGO, CA 92101
619.239.2151



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SYM	DESCRIPTION	DATE

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO MISSION BEACH LIFE GUARD STATION
ENLARGED FLOOR PLANS
A4.1

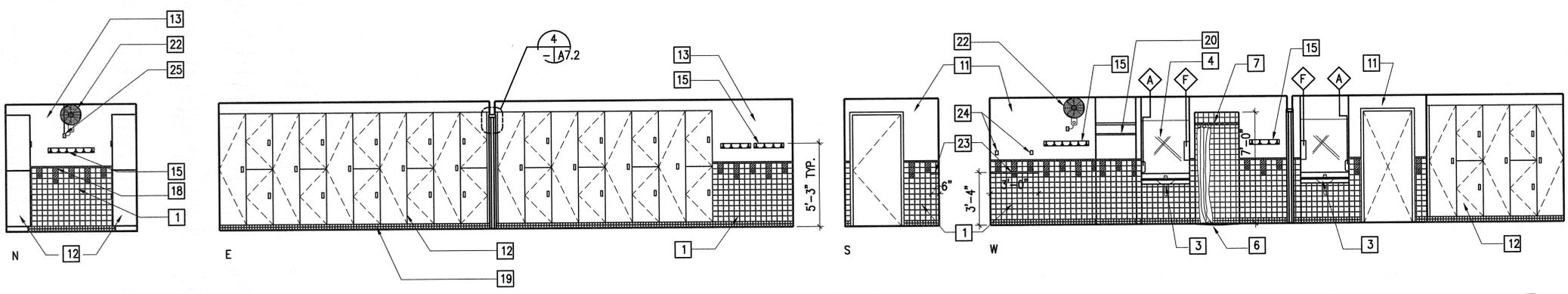
CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

FOR CITY ENGINEER: *[Signature]* 2/1/12
DATE: 2/1/12
SECTION HEAD: ALEX GARCIA
PROJECT MANAGER: JIHAD SLEMAN

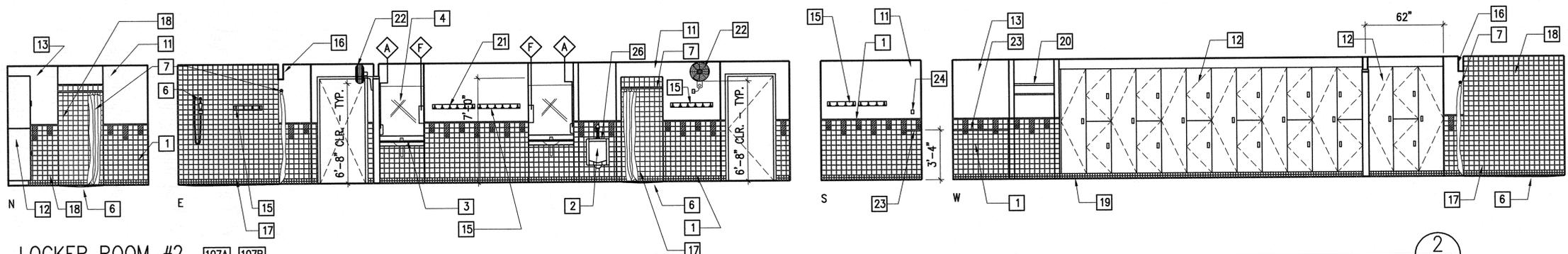
DESIGN ENGINEER: *[Signature]*

AS-BUILT: X
LAMBERT COORDINATES

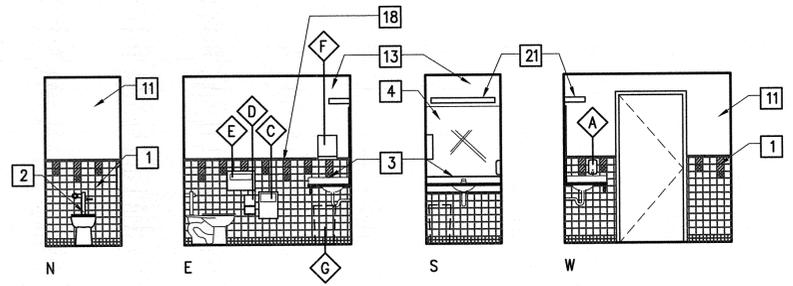
CONTRACTOR: _____ DATE STARTED: _____
INSPECTOR: _____ DATE COMPLETED: _____
32848-13 -D



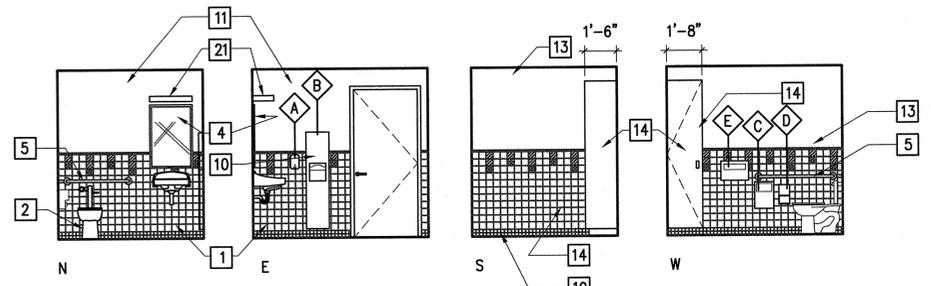
LOCKER ROOM #1 [106A] [106B]
1/4"=1'-0"



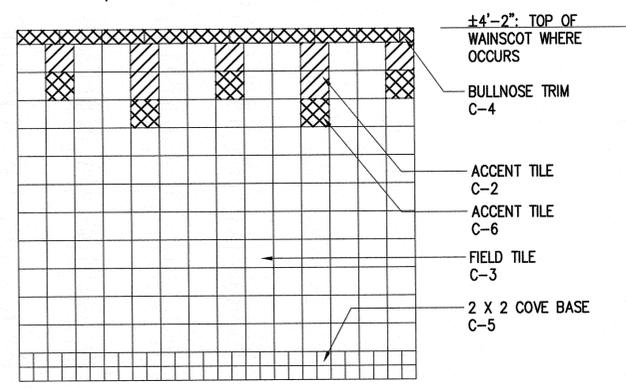
LOCKER ROOM #2 [107A] [107B]
1/4"=1'-0"



UNISEX TOILET #1 [103]
1/4"=1'-0"



UNISEX TOILET #2 [104]
1/4"=1'-0" - SEE SHEET A10.2 FOR MOUNTING HEIGHTS



C.T. WALL PATTERN, TYP.
NTS.

TOILET ACCESSORIES	
Ⓐ	SURFACE MOUNTED SOAP DISPENSER
Ⓑ	SEMI-RECESSED PAPER TOWEL DISPENSER AND WASTE RECEPTACLE
Ⓒ	SURFACE MOUNTED SANITARY NAPKIN DISPOSAL
Ⓓ	SURFACE MOUNTED MULTI-ROLL TOILET TISSUE DISPENSER
Ⓔ	SURFACE MOUNTED SEAT COVER DISPENSER
Ⓕ	SURFACE MOUNTED PAPER TOWEL DISPENSER
Ⓖ	FLOOR STANDING WASTE RECEPTACLE

GENERAL NOTES

A. SEE DETAIL 1/A10.2 FOR TYPICAL TOILET ACCESSORY MOUNTING HEIGHTS

B. SEE A7.1 FOR ADDITIONAL FINISH INFORMATION

C. PROVIDE 2"x8" WOOD BLOCKING BETWEEN FRAMING SECURED TO WOOD STUDS W/GALV. MTL ANCHORS (SIM. TO SIMPSON A35 FRAMING ANGLE) AT ALL LOCATIONS ON STUD PARTITIONS WHERE WALL-MOUNTED ITEMS ARE TO BE SUPPORTED.

D. CONTRACTOR TO REMOVE ALL PAINT DOWN TO THE BARE CMU AT ANY EXISTING CMU WALL SURFACE TO RECEIVE CERAMIC WALL TILE. FINAL SURFACE TO BE PREPPED PER TILE MANUFACTURER'S INSTRUCTIONS / RECOMMENDATIONS.

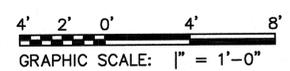
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Planners
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SAN DIEGO, CA 92101
619.239.2151

LICENSED ARCHITECT
ANDREW C. CHEN
No. C 10872
REN 6/2013
STATE OF CALIFORNIA

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SYM	DESCRIPTION	DATE



KEYED NOTES

- 1 CERAMIC TILE WAINSCOT - SEE 5/A5.1 FOR TILE PATTERN
- 2 PLUMBING FIXTURE, SPD
- 3 SINK COUNTER, SEE DETAIL 6/A10.1
- 4 MIRROR - SEE DETAIL 4/A9.1.
- 5 GRAB BARS
- 6 SHOWER STALL W/ SHOWER PLUMBING FITTINGS, SPD
- 7 PROVIDE SHOWER CURTAIN & ROD, TYP AT EACH SHOWER STALL
- 8 NOT USED
- 9 NOT USED
- 10 NOT USED
- 11 GYP BD, PAINTED. SEE FINISH SCHEDULE FOR COLORS
- 12 ALTERNATING SINGLE AND DOUBLE TIERED SOLID PLASTIC LOCKERS ON 4" HIGH CONC. BASE
- 13 (E) CMU WALL, PAINT. CLEAN & PREP WALLS AS REQUIRED SEE FINISH SCHEDULE FOR COLORS
- 14 SOLID PLASTIC LOCKER W/ ACCESSIBLE HARDWARE
- 15 WALL-MTD. SSL. HOOK STRIPS
- 16 12" DEEP GYP. BD. BULKHEAD ON WOOD STUD FRAMING.
- 17 PROVIDE FULL-HEIGHT CERAMIC TILE FINISH AT WALLS AT ALL 3 SHOWER STALLS. PROVIDE 5/8" THICK CEMENTITIOUS BACKER BOARD FOR CERAMIC TILE SUBSTRATE AT STUD WALLS OF SHOWER STALLS
- 18 PROVIDE CERAMIC TILE ON CMU. WALLS
- 19 PROVIDE CERAMIC TILE AT FACE OF CONC. LOCKER BASE, TYP.
- 20 PROVIDE 3/4" THICK PLAM-COVERED SHELF & SSL. HANGER ROD AT ALCOVE
- 21 WALL-MOUNTED FLUOR. LT. FIXTURE - SED.
- 22 WALL MOUNTED FAN W/ OUTLET AND TIMER SWITCH (4 LOCATIONS) - FAN TO BE AIR KING COMMERCIAL GRADE OSCILLATING WALL MOUNT #9012. TIMER SWITCH TO BE INTERMATIC FF12HC OR APPROVED EQUAL. PROVIDE SUBMITTAL TO ARCHITECT FOR APPROVAL.
- 23 SSL SHELF. 6" DEEP IN LOCKER ROOM #1, 12" DEEP IN LOCKER ROOM #2
- 24 OUTLET MOUNTED ABOVE WAINSCOT - SED.
- 25 SURFACE MOUNTED ELECTRICAL OUTLET - SED.
- 26 ACCESSIBLE URINAL - SEE 1/A10.2 FOR MOUNTING HEIGHTS

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION

A5.1

INTERIOR ELEVATIONS

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

FOR CITY ENGINEER: *Max Gano* 2/1/12

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL				

W.B.S. NO. S-00793

ALEX GARCIA
SECTION HEAD

PROJECT MANAGER: *Ujjwal S. Choudhary*
UJJWAL S. CHOUHARY

DESIGN ENGINEER: *Andrew C. Chen*
ANDREW C. CHEN

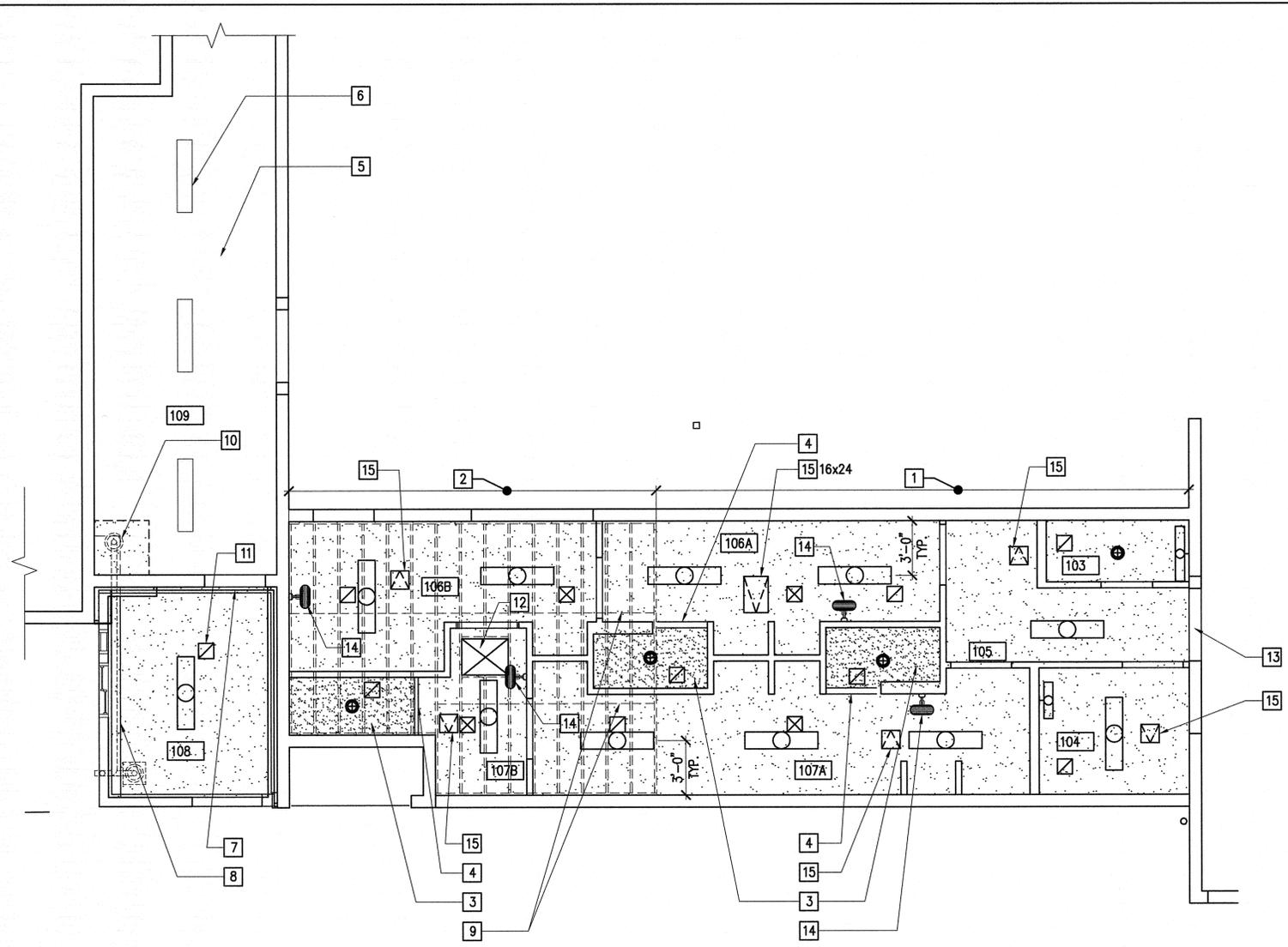
LAMBERT COORDINATES

AS-BUILT

CONTRACTOR: _____ DATE STARTED: _____

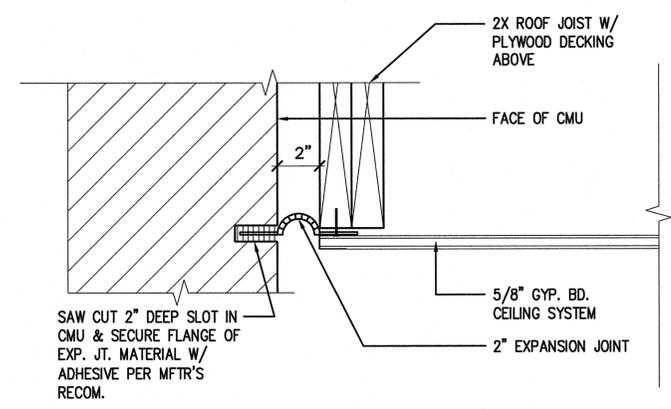
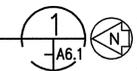
INSPECTOR: _____ DATE COMPLETED: _____

32848-14-D



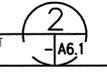
REFLECTED CEILING PLAN
1/4"=1'-0"

A371CLG.PL



CEILING EXPANSION JOINT
3"=1'-0"

A371CLGEXJOINT



GENERAL NOTES

- A. SEE RM FIN SCHED FOR CEILING HEIGHTS
- B. COORD CLG INSTALLATION W. REQ'D MECH'L EQUIP'MT AND LIGHTING FIXTURE INSTALLATIONS
- C. SEE ELECTRICAL AND MECHANICAL DRWGS FOR MORE INFORMATION
- D. REMOVE (E) GYP. BD. CEILINGS IN BOTH THE (E) MEN'S & WOMEN'S TOILET ROOM 1 AND LOCKER ROOMS. REUSE THE EXISTING 2X6 CEILING JOIST SYSTEM FOR THE CEILING SYSTEM IN THE (N) LOCKER ROOMS, ETC. VERIFY CONDITION OF (E) CEILING JOISTS AND REPORT ANY DAMAGE TO ARCHITECT BEFORE PROCEEDING. MODIFY ANY (E) FRAMING AT LOWER CEILINGS OR BULKHEADS AS REQUIRED TO ACCOMMODATE THE (N) CEILING
- E. CONTRACTOR SHALL PROVIDE REQUIRED ANY AND ALL BLOCKING BETWEEN (N) OR (E) CEILING JOISTS AS REQUIRED FOR SECURELY FASTENING NEW PARTITIONS, FINWALLS, ETC. AS SHOWN.

KEYED NOTES

- 1 (E) 2" X 6" WOOD CEILING JOISTS @ 16" O.C. TO REMAIN
- 2 PROVIDE (N) 2" X 6" THICK WOOD CEILING JOISTS @ 16" O.C. TO SUPPORT (N) CEILING SYSTEM - BOTTOM OF (N) CEILING JOISTS T.M.E. PROVIDE 1 X 3 BRIDGING BTW. JOISTS
- 3 (N) PORTLAND CEMENT PLASTER CEILING SYSTEM ON METAL RIB LATH FASTENED TO CEILING JOISTS - AT SHOWER CUBICLES PROVIDE INTERMEDIATE WOOD BLOCKING BETWEEN CEILING JOISTS AS REQUIRED TO SUPPORT NEW CEILINGS
- 4 GYP. BD. BULKHEAD - BOTTOM AT 7'-0" AFF.
- 5 (E) GYP. BD. CEILING TO REMAIN - PATCH AS REQUIRED T.M.E.
- 6 (E) FLUORESCENT LIGHT TO REMAIN - VERIFY LOCATIONS
- 7 PROVIDE EXPANSION JOINT AT CEILING - SEE 2/A6.1
- 8 FURR-OUT BULKHEAD AT DOWNSPOUT PIPING - BOTTOM AT 7'-0" AFF. CLR. MIN. PROVIDE 5/8" GYP. O/ 2X FRAMING AT 16" O.C.
- 9 LINE OF BRIDGING BTW. JOISTS
- 10 PATCH (E) CEILING AS REQ'D T.M.E. WHERE REMOVED TO INSTALL (N) ROOF DRAIN
- 11 (N) CLG. GRILLE FOR 3-SPEED EXHAUST FAN GRILLE - SMD.
- 12 PROVIDE (N) 24" X 30" HINGED METAL ACCESS DOOR
- 13 PAINT (N) LINTEL AT OPENING
- 14 WALL MOUNTED FAN - SEE ELEVATIONS ON SHEET A5.1
- 15 PAINTED METAL ACCESS PANEL, 12x12 U.O.N., SECURED TO CEILING JOISTS - VERIFY FINAL LOCATION IN FIELD AS REQ'D TO ACCESS MECH'L EQUIPMENT ABOVE CLG.

LEGEND

- GYP BD CEILING
- PORTLAND CEMENT PLASTER CEILING
- SURFACE-MOUNTED FLUORESCENT LIGHT FIXTURE, SED
- RECESSED FLUORESCENT CAN LIGHT FIXTURE, SED
- WALL-MOUNTED FLUORESCENT LIGHT FIXTURE, SED
- MECHANICAL SUPPLY DIFFUSER, SMD
- MECHANICAL RETURN GRILLE, SMD
- MECHANICAL EXHAUST GRILLE, SMD

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SYM	DESCRIPTION	DATE



SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION

A6.1

REFLECTED CEILING PLAN

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S. NO. S-00793

Andrew C. Chen 2/1/12
FOR CITY ENGINEER DATE

ALEX GARCIA
SECTION HEAD

DESCRIPTION BY APPROVED DATE FILMED
ORIGINAL

JIHAD SLEMAN
PROJECT MANAGER

DESIGN ENGINEER
X
LAMBERT COORDINATES

AS-BUILT
CONTRACTOR DATE STARTED
INSPECTOR DATE COMPLETED

32846-15 -D

ROOM FINISH SCHEDULE																															
RM. NO	ROOM NAME	FLOOR			BASE			WALLS												CEILING				REMARKS							
								N			E			S			W														
		M	F	C	M	F	C	M	F	C	M	F	C	M	F	C	M	F	C	M	F	C	M		F	C	HT				
103	UNISEX TOILET #1	CT	FF	C1	CT	FF	C5	CT	FF	PTS	①	CT	CMU	FF	PTS	①	CT	CMU	FF	PTS	①	CT	FF	PTS	①	GB	PTS	P1	8'-0"	①	
104	UNISEX TOILET #2	CT	FF	C1	CT	FF	C5	CT	FF	PTS	①	CT	CMU	FF	PTS	①	CT	CMU	FF	PTS	①	CT	FF	PTS	①	GB	PTS	P1	8'-0"	①	
105	HALL	VCT	FF	VCT1	RB	FF	RB-1	CT	FF	PTS	①	CT	CMU	FF	PTS	①	CT	CMU	FF	PTS	①	CT	FF	PTS	①	GB	PTS	P1	8'-0"		
106A	LOCKER ROOM #1	CT	FF	C1	CT	FF	C5	CT	FF	PTS	①	CT	CMU	FF	PTS	①	CT	CMU	FF	PTS	①	CT	FF	PTS	①	GB	PTS	P1	8'-0"	①	
106B	LOCKER ROOM #1	CT	FF	C1	CT	FF	C5	CT	FF	PTS	①	CT	CMU	FF	PTS	①	CT	CMU	FF	PTS	①	CT	FF	PTS	①	GB	PTS	P1	8'-0"	①	
107A	LOCKER ROOM #2	CT	FF	C1	CT	FF	C5	CT	FF	PTS	①	CT	CMU	FF	PTS	①	CT	CMU	FF	PTS	①	CT	FF	PTS	①	GB	PTS	P1	8'-0"	①	
107B	LOCKER ROOM #2	CT	FF	C1	CT	FF	C5	CT	FF	PTS	①	CT	CMU	FF	PTS	①	CT	CMU	FF	PTS	①	CT	FF	PTS	①	GB	PTS	P1	8'-0"	①	
108	STOREROOM	CON	SL	-	RB	FF	RB-1	GB	PTS	P1	STC	CMU	PTS	P1	GB	PTS	P1	GB	PTS	P1	GB	PTS	P1	GB	PTS	P1	GB	PTS	P1	8'-0"	
109	LIFEGUARD STORAGE ROOM	(E)	(E)	(E)	(E)	(E)	(E)	CMU	PTS	P1	CMU	PTS	P1	CMU	PTS	P1	CMU	PTS	P1	CMU	PTS	P1	GB	PTS	P1	GB	PTS	P1	8'-0"		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

COLOR SCHEDULE	
C1 - CERAMIC FLOOR TILE MANUFACTURER: DAL TILE; SIZE: 2"x2"; COLOR: MARBLE D325	C2 - CERAMIC WALL ACCENT TILE MANUFACTURER: DAL TILE; SIZE: 4"x4"; COLOR: MUSTARD Q012
C3 - CERAMIC WALL FIELD TILE MANUFACTURER: DAL TILE; SIZE: 4"x4"; COLOR: ALMOND K165	C4 - CERAMIC WALL TILE BULLNOSE TRIM MANUFACTURER: DAL TILE; SIZE: 2x6 S-4269; COLOR: OCEAN BLUE Q049
C5 - CERAMIC COVE BASE MANUFACTURER: DAL TILE; SIZE: 2"x2"; COLOR: MARBLE D325	C6 - CERAMIC WALL ACCENT TILE MANUFACTURER: DAL TILE; SIZE: 4"x4"; COLOR: OCEAN BLUE Q049
P1 - WALL PAINT MANUFACTURER: DUNN-EDWARDS; COLOR: POWDER PLUME SP4001	P2 - EXTERIOR FRAMES MANUFACTURER: DUNN EDWARDS; COLOR: TO MATCH (E) BLUE EXT. FRAMES.
P3 - INTERIOR DOORS & FRAMES MANUFACTURER: DUNN EDWARDS; COLOR: TO MATCH (E) BEIGE INT. DOORS & FRAMES	PL-1-PLASTIC LAMINATE (CABINETS) MANUFACTURER: NEVAMAR; COLOR: HERBAL ALLUSION AL5001T
SSM - SOLID SURFACE MATERIAL MANUFACTURER: CORIAN; COLOR: GRANOLA	RB-1-RUBBER BASE MANUFACTURER: ROPPE; SIZE: 6"; COLOR: TAUPE 124
VCT1-VINYL COMPOSITION TILE MANUFACTURER: ARMSTRONG; SIZE: 12"x12"; COLOR: EARTHSTONE GREIGE 51804	

MATERIALS			
ALUM	ALUMINUM	CC	6"H CONCRETE BASE
AP	ACOUSTIC PANEL	CT	CERAMIC TILE
CMU	CONCRETE MASONRY UNIT	HPO	HIGH PERFORMANCE ORGANIC
CON	CONCRETE	RB	RUBBER BASE, 6" HIGH
GB	GYPSON BOARD	VCT	VINYL COMPOSITION TILE
STC	STUCCO		
FINISHES			
FF	FACTORY FINISH		
PTF	PAINT EGGSHELL		
PTF	PAINT FLAT		
PTS	PAINT SEMIGLOSS		
SL	SEALED		
RM. FINISH SCHEDULE NOTES			
① PROVIDE CT WAINSCOT AT ALL 4 WALLS, COLORS C2, C3, C4, C5 & C6. SEE TILE PATTERN SHEET A5.1			
② ENSURE FLOOR IS LEVEL BEFORE INSTALLING FLOOR TILE			
③ MANUFACTURERS' PRODUCT NAMES AND DESIGNATIONS ARE USED FOR PURPOSE OF CONVENIENCE ONLY, AND ARE NOT INTENDED TO EXCLUDE PRODUCTS OF OTHER MANUFACTURERS WHOSE PRODUCTS MEET THE SPECS AND, IN THE OPINION OF THE DISTRICT ENGINEER, MATCH THE NAMED PRODUCT IN COLOR, PATTERN AND APPEARANCE.			

DOOR SCHEDULE															
DOOR NO	SIZE W x H	FIRE RATING	FRAME				DOOR				DETAIL SHEET A7.2 UON			HDWE GROUP	REMARKS
			TYPE	MAT'L	FIN	COL	TYPE	MAT'L	FIN	COL	HEAD	JAMB	SILL		
101A	PR 3'-2" x 7'-2" V.I.F.	-	1 V.I.F.	ALUM	PT	P2	A	FG	FF	-	7A	7A	7B	-	② ③
102A	3'-0" x 7'-2" V.I.F.	-	1 V.I.F.	ALUM	PT	P2	B	FG	FF	-	7A	7A	7B	5	②
103A	2'-6" x 7'-0"	-	1	MTL	PT	P3	A	MTL	PT	P3	1	1	-	1	①
104A	3'-0" x 7'-0"	-	1	MTL	PT	P3	A	MTL	PT	P3	1	1	-	1	①
105A	3'-0" x 7'-0"	-	1	MTL	PT	P3	C	MTL	PT	P3	1	1	-	2	①
105B	3'-0" x 7'-0"	-	1	MTL	PT	P3	C	MTL	PT	P3	1	1	-	2	①
106A A	3'-0" x 7'-0"	-	1	MTL	PT	P3	A	WD	PT	P3	4	4	-	-	
106B A	3'-0" x 7'-0"	-	1	MTL	PT	P3	A	WD	PT	P3	4	4	-	-	
108A	3'-6" x 7'-0"	-	1	ALUM	PT	P2	B	FG	FF	-	2	2	7B SIM.	3	
109A	3'-0" x 7'-0"	-	2	MTL	PT	P3	A	MTL	PT	P3	3 SIM.	3 SIM.	-	-	④
110A	3'-8" x 7'-0"	1-hr	2	MTL	PT	P3	A	MTL	PT	P3	3	3	-	4	

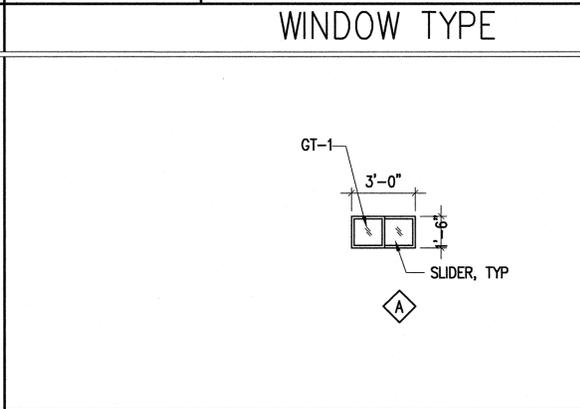
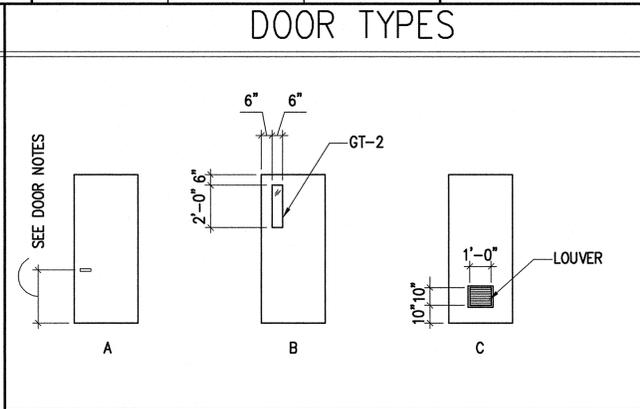
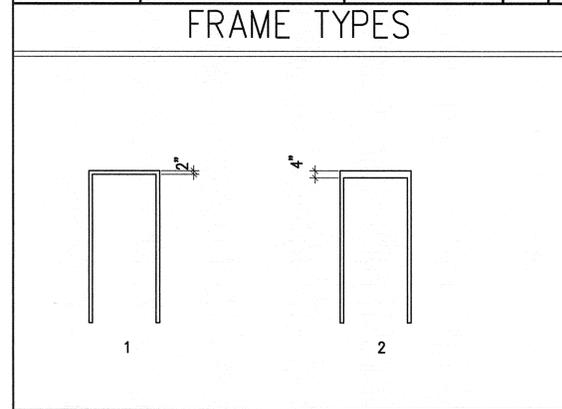
DOOR/ WINDOW ABBREVIATIONS	
MTL	METAL
FG	FIBERGLASS
GL	GLASS
FF	FACTORY FINISH
OBS	OBSCURE
PC	POLYCARBONATE
PT	PAINT
ALUM	ALUMINUM
HPO	HIGH PERFORMANCE ORGANIC
WD	WOOD
DOOR REMARKS	
① UNDERCUT DOOR 3/4"	
② DOOR AND FRAME SIZE TO FIT WITHIN EXISTING OPENING - VERIFY DIMS.	
③ PROVIDE (N) HARDWARE TME, WITH SSL FINISH EXCEPT PROVIDE CONTIN. ALUM. PIANO TYPE DOOR HINGES U.O.N.- VERIFY (E).	
④ PROVIDE (N) HARDWARE TME, W/ SSL FINISH, VERIFY.	

DOOR NOTES	
[A] ALL HARDWARE INSTALLATIONS SHALL COMPLY W/REQUIREMENTS OF TITLE 24. CBC.	
① LATCHING HARDWARE SHALL BE CENTERED BETWEEN 30" & 44" AFF.	
[B] ADAAG 4.13.11 DOOR OPENING FORCE.	
THE MAXIMUM FORCE FOR PUSHING OR PULLING OPEN A DOOR SHALL BE AS FOLLOWS:	
① FIRE DOORS SHALL HAVE THE MINIMUM OPENING FORCE ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY.	
② OTHER DOORS.	
(a) EXTERIOR HINGED DOORS: (RESERVED).	
(b) INTERIOR HINGED DOORS: (22.2N)	
(c) SLIDING OR FOLDING DOORS: 5lb (22N)	
THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT MAY HOLD THE DOOR IN A CLOSED POSITION.	
[C] DOOR OPENING FORCE APPENDIX:	
FORCES FOR PUSHING OR PULLING DOORS OPEN ARE MEASURED WITH A PUSH-PULL SCALE UNDER THE FOLLOWING CONDITIONS.	
① HINGED DOORS: FORCE APPLIED PERPENDICULAR TO THE DOOR AT THE DOOR OPENER OR 30 INCHES (760mm) FROM THE HINGED SIDE, WHICHEVER IS FARTHER FROM THE HINGE.	
② SLIDING OR FOLDING DOORS: FORCE APPLIED PARALLEL TO THE DOOR AT THE DOOR PULL OR LATCH.	
③ APPLICATION OF FORCE: APPLY FORCE GRADUALLY SO THAT THE APPLIED FORCE DOES NOT EXCEED THE RESISTANCE OF THE DOOR. IN HIGH-RISE BUILDINGS, AIR-PRESSURE DIFFERENTIALS MAY REQUIRE A MODIFICATION OF THIS SPECIFICATION IN ORDER TO MEET THE FUNCTIONAL INTENT.	

WINDOW SCHEDULE									
TYPE	SIZE W x H	SILL HT AFF	MTL	FIN	DETAILS SHT A7.2 UON			GLAZING	REMARKS
					HEAD	JAMB	SILL		
Ⓐ	3'-0" x 1'-6"	5'-0"	ALUM	HPO	5A	5A	5B	GT-1	FRAME COLOR, C-
Ⓑ	(E)	(E)	(E)	(E)	-	-	-	GT-4	REPLACE (E) GLAZING

(VERIFY ALL DIMENSIONS IN FIELD)

GLAZING TYPES	
GT-1	1" INSULATED, TINTED GLASS
GT-2	1/4" TEMPERED GLASS
GT-3	1/4" TINTED, LAMINATED GLASS
GT-4	1/4" THICK POLYCARBONATE GLAZING

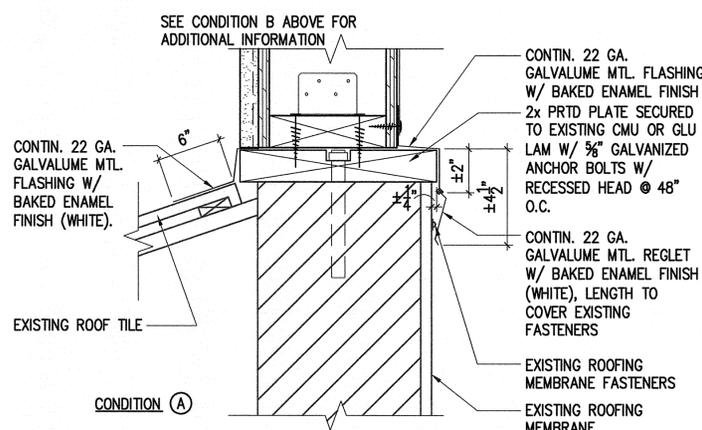
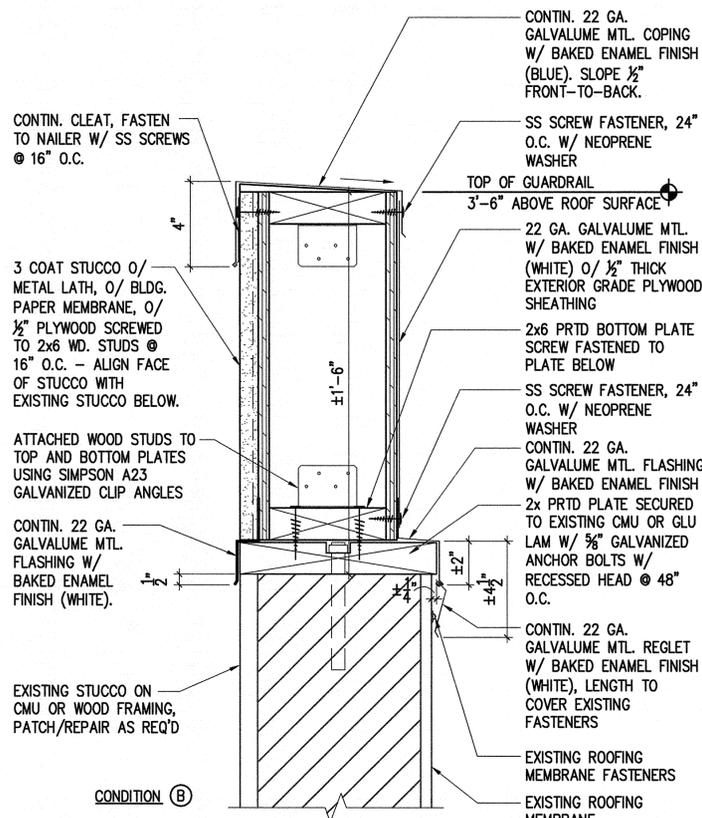


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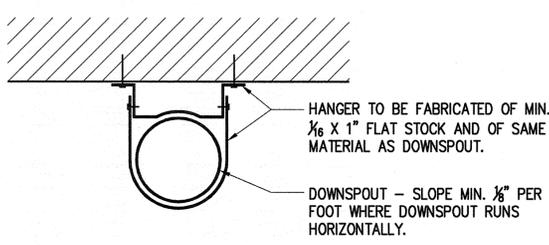
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ANDREW C. CHEN
No. C 10872
REN 6/2013
STATE OF CALIFORNIA

IF SHEET SIZE IS LESS THAN 22" x 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.			PLANS FOR THE CONSTRUCTION OF	
			ALTERATIONS TO MISSION BEACH LIFEGUARD STATION	
			A7.1	
			FINISH, DOOR & WINDOW SCHEDULES	
			CITY OF SAN DIEGO, CALIFORNIA	
			ENGINEERING DEPARTMENT	
			W.B.S. NO. S-00793	
			ALEX GARCIA	
			SECTION HEAD	
			Jihad Sleiman	
			PROJECT MANAGER	
			DESIGN ENGINEER	
			X	
			LAMBERT COORDINATES	
			32848-16 -D	

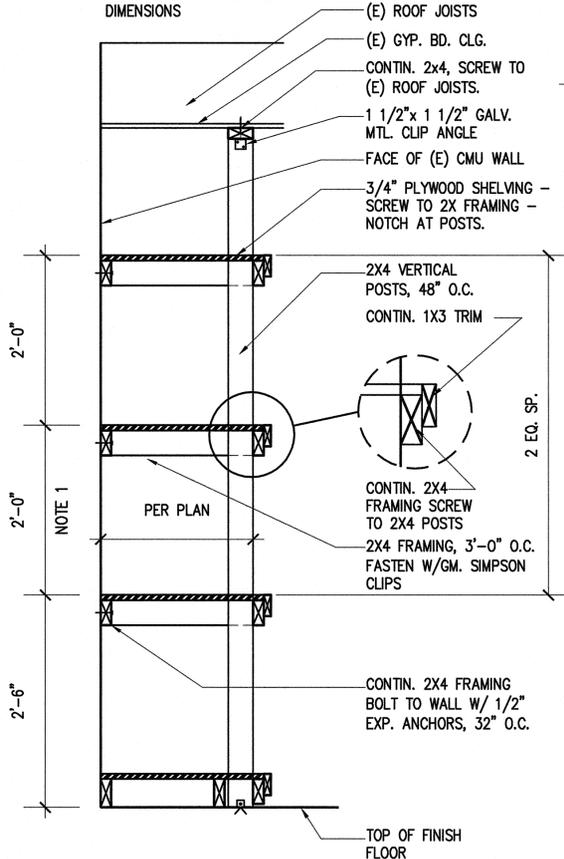


GUARDRAIL SECTION
3"=1'-0" A0371RAILING -A9.1

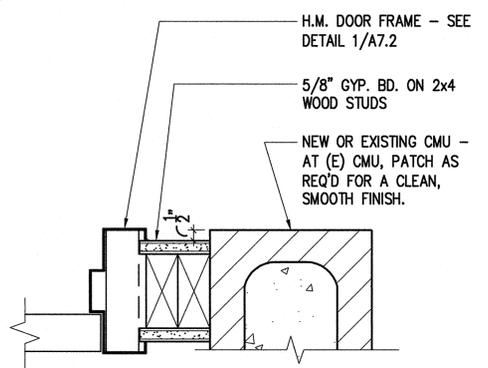


DOWNSPOUT HANGER DETAIL
3"=1'-0" A0371DWNHNG -A9.1

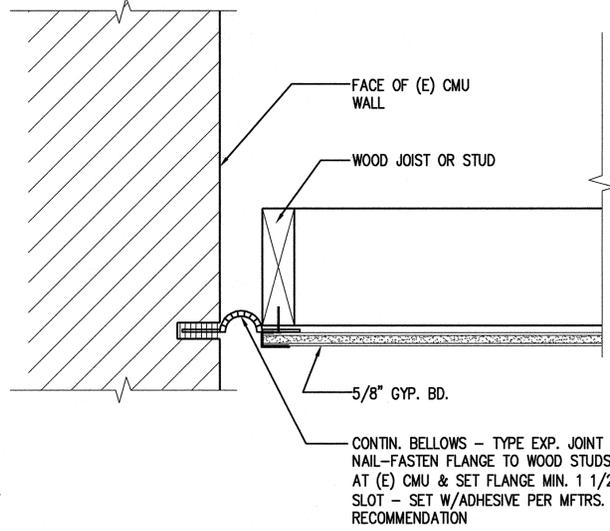
- NOTES:**
1. VERIFY SPACING OF SHELVES W/ LIFEGUARDS.
 2. PROVIDE 2 COATS SEMI-GLOSS PAINT WHITE
 3. SEE PLAN FOR SHELF DEPTH DIMENSIONS



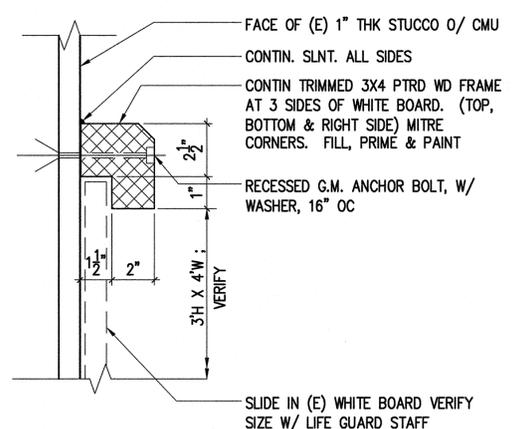
DETAIL AT WOOD SHELVING
3"=1'-0" A371WDSHLV -A9.1



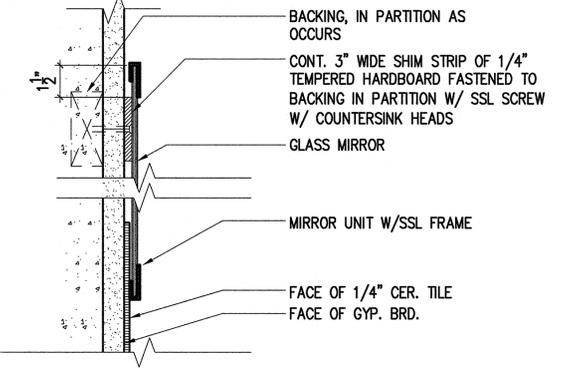
PLAN DETAIL
3"=1'-0" A0371PLAN-DTL01 -A9.1



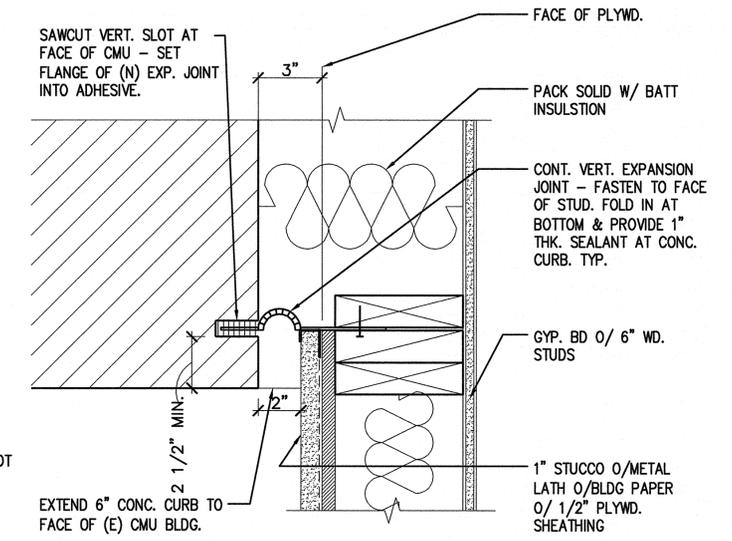
INT. EXPANSION JOINT COVER
3"=1'-0" A371WALL FLASH-INT -A9.1



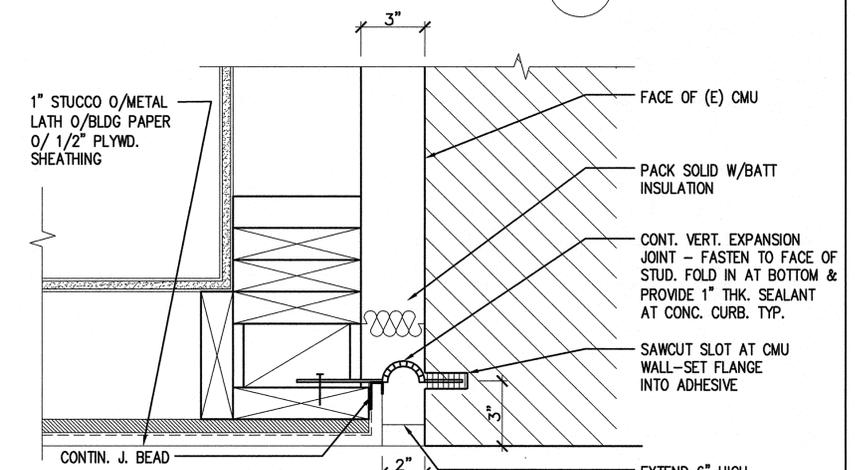
DETAIL AT WHITE BOARD FRAME
3"=1'-0" A371WHBD -A9.1



DETAIL-BACKING SHIM AT MIRROR
3"=1'-0" A371WNTILE -A9.1



AT NORTH WALL - PLAN VIEW
A



AT SOUTH WALL - PLAN VIEW
B

EXPANSION JOINT DETAILS
3"=1'-0" A371CLGEXJOINT -A9.1

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

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ANDREW C. CHEN
No. C 10872
REN 6/2013
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IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.

SYM	DESCRIPTION	DATE

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO MISSION BEACH LIFEGUARD STATION **A9.1**

EXTERIOR DETAILS

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S. NO. S-00793

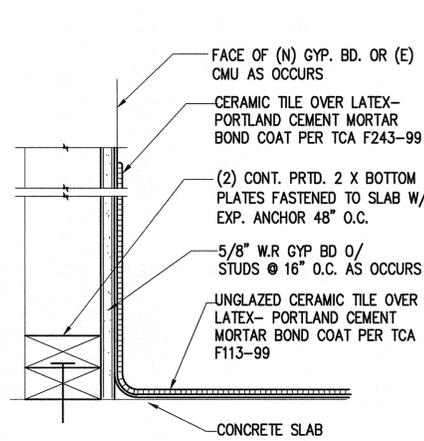
ALEX GARCIA
SECTION HEAD

Jihad Sleiman
PROJECT MANAGER

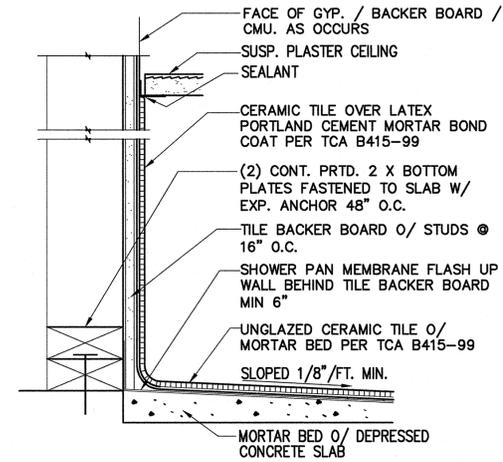
DESIGN ENGINEER

LAMBERT COORDINATES

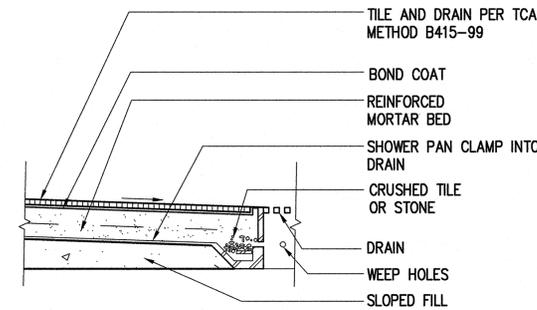
32848- 18 -D



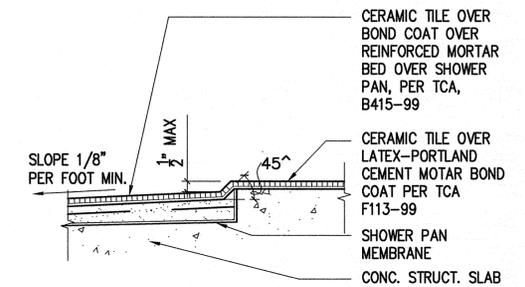
SECTION AT WAINSCOT
3'-1'-0" A371SCWS 4 -A10.1



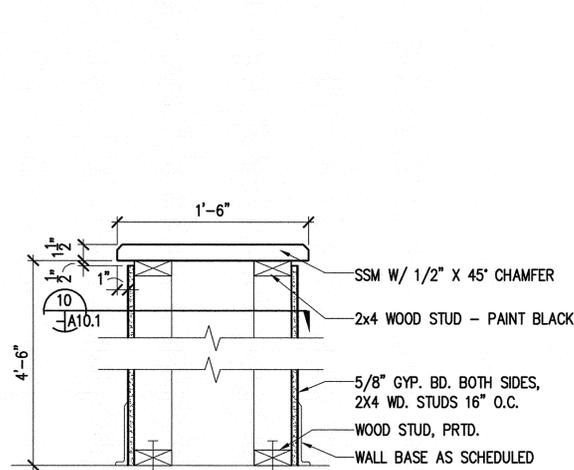
SECTION THRU SHOWER
3'-1'-0" A371SCSW-SHRWL 3 -A10.1



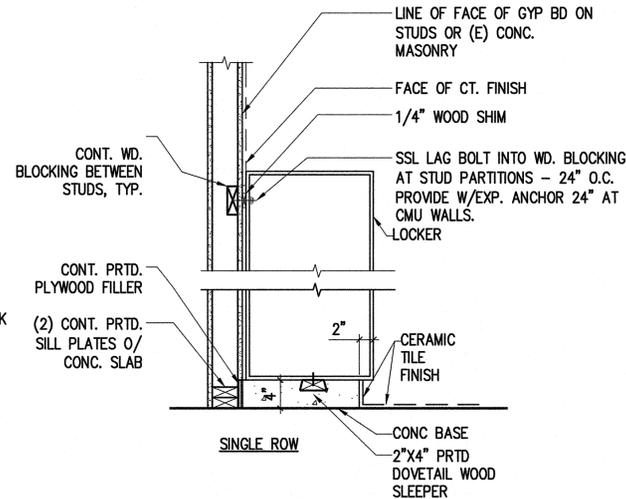
FLOOR DRAIN @ SHOWER
3'-1'-0" A371FLDR 2 -A10.1



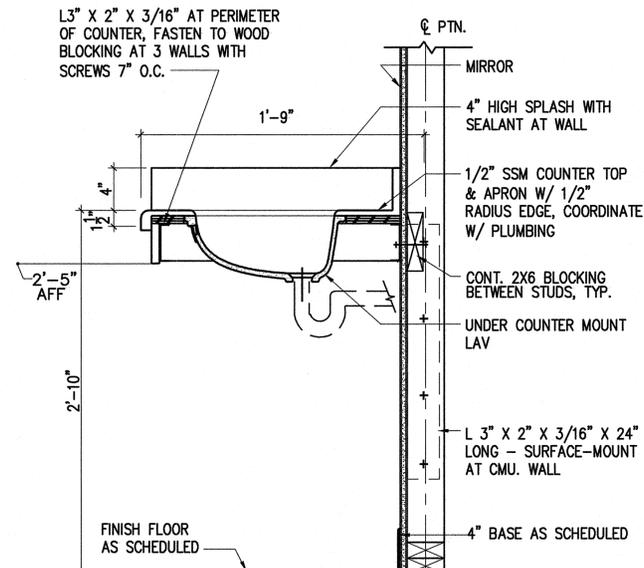
SHOWER THRESHOLD
3'-1'-0" A371SWTS 1 -A10.1



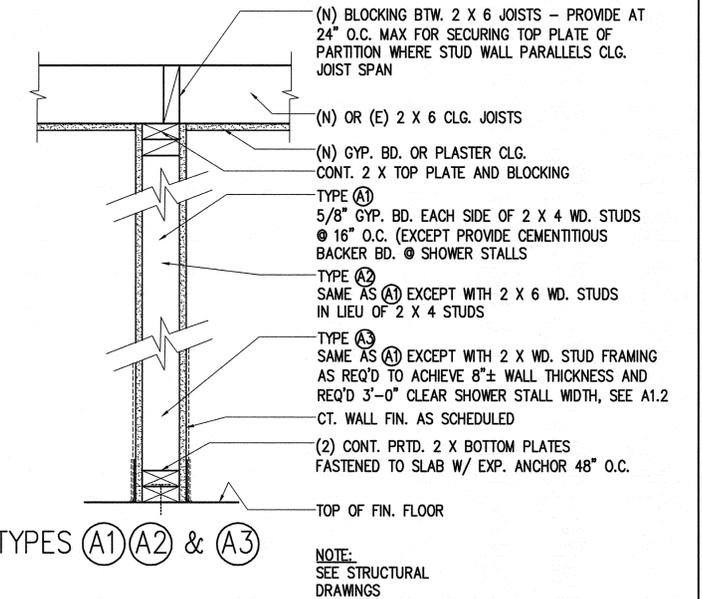
PARTITION TYPE
1 1/2" = 1'-0" A371PRTN 8 -A10.1



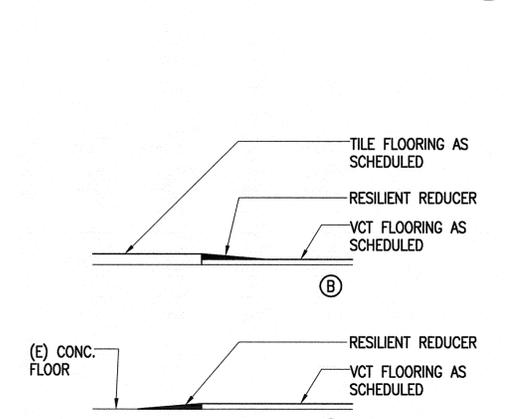
LOCKER INSTALLATION (TYPICAL)
1' = 1'-0" A371LKBS 7 -A10.1



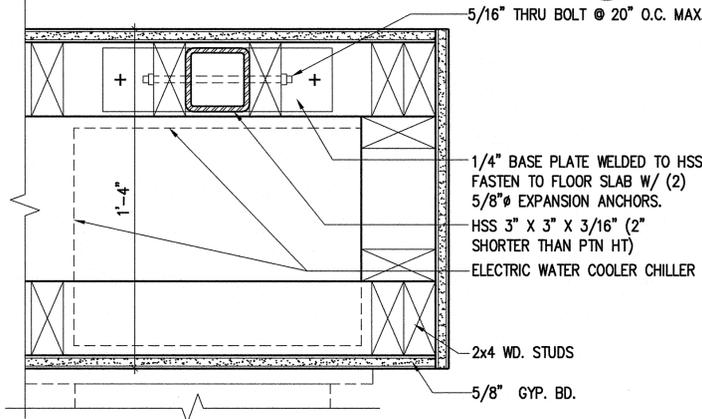
SECTION THRU SINK COUNTER
1 1/2" = 1'-0" A371SINK 6 -A10.1



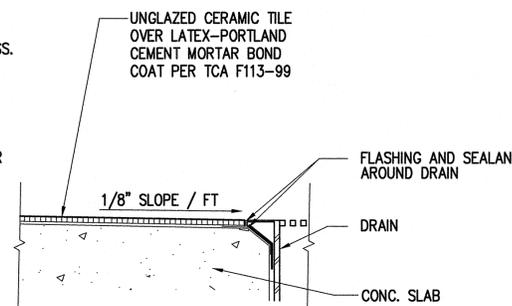
INTERIOR PARTITION CONSTRUCTION
1 1/2" = 1'-0" A371-PARTITION 5 -A10.1



INT THRESHOLD DETAILS
6" = 1'-0" A371TRN 11 -A10.1



PARTITION REINFORCING DET.
3' = 1'-0" A371BRACNG 10 -A10.1



FLOOR DRAIN DETAIL
3'-1'-0" A371-FD 9 -A10.1

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SYM	DESCRIPTION	DATE

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION

A10.1

INTERIOR DETAILS

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S. NO. S-00793

ALEX GARCIA
SECTION HEAD

JIHAD SLEMAN
PROJECT MANAGER

DESIGN ENGINEER

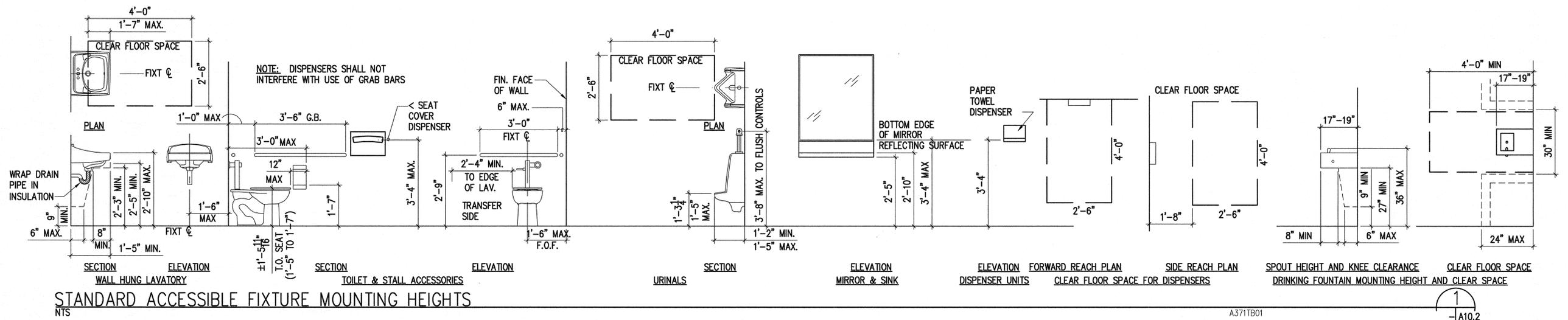
LAMBERT COORDINATES

AS-BUILT

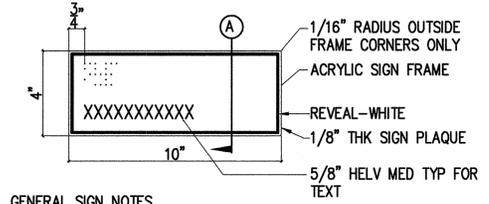
CONTRACTOR _____ DATE STARTED _____

INSPECTOR _____ DATE COMPLETED _____

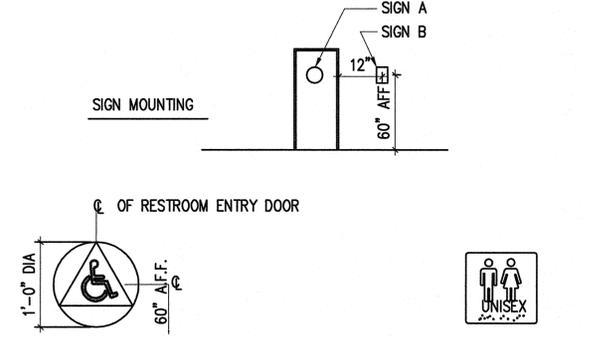
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- NOTE:**
1. ALL DRAINPIPES AND ALL HOT WATER PIPES ACCESSIBLE UNDER LAVATORIES ARE TO BE INSULATED OR OTHERWISE COVERED.
 2. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.



- GENERAL SIGN NOTES**
- * RIGHT OR LEFT JUSTIFY TEXT DEPENDING ON WHICH SIDE IS ADJACENT TO DOOR LATCH
 - * ALL SIGN TYPES SHALL HAVE FRAME AND PLAQUE BACKGROUND FINISH TO MATCH COLOR C16. ALL LETTERS SHALL BE WHITE.
 - * BRAILLE TEXT REQUIRED FOR ALL INTERIOR SIGNS
 - * SEE SPECIFICATIONS FOR TEXT AT EACH LOCATION.



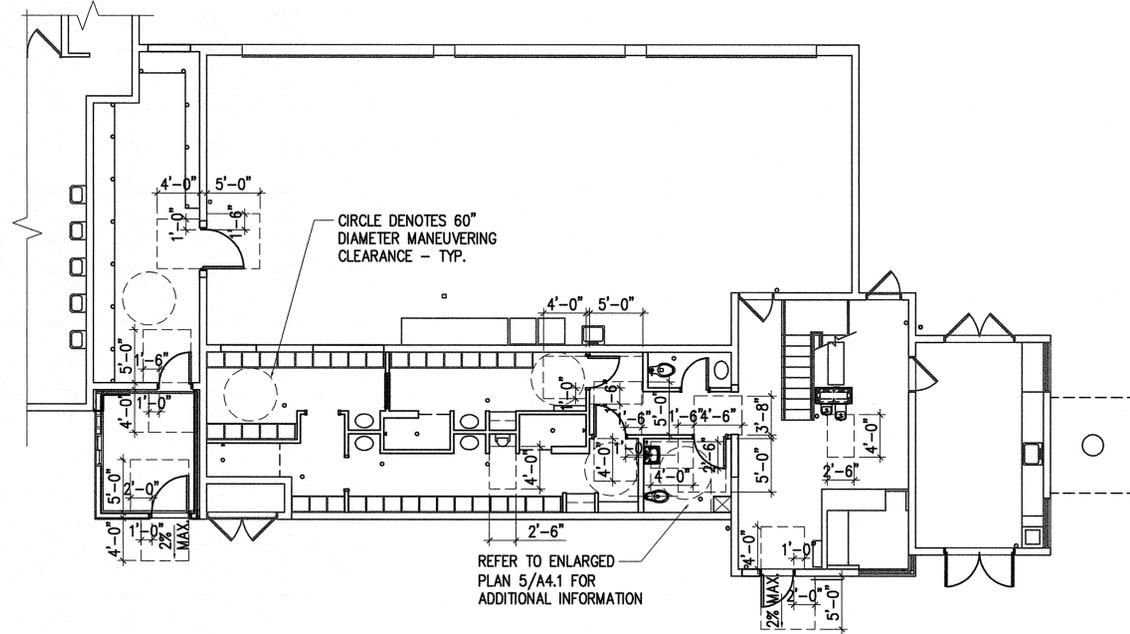
IDENTIFICATION SYMBOLS SHALL BE 1/4" THICK WITH 1" LETTERS. ALL CAPS. STYLE: OPTIMA BOLD. BORDER DIMENSION TO BE 6" HIGH. COLOR OF GRAPHICS TO CONTRAST WITH BACKGROUND, BACKGROUND COLOR TO CONTRAST WITH DOOR COLOR PER CODE REQUIREMENTS.

SYMBOLS SHALL BE CENTERED ON DOOR AT A HEIGHT OF 60" A.F.F. AND ATTACHED WITH ADHESIVE.

SIZE: 10" X 10". THESE SIGNS HAVE 1/32" RAISED LETTERS AND PICTORGRAMS IN ACCORDANCE WITH A.D.A. GRADE 2 BRAILLE IS PLACED BENEATH THE RAISED LETTERS

Title 24 Signage **A** ADA Signage **B**

ACCESSIBLE SIGNAGE FOR TOILET RMS
A0371ADAP



FIRST FLOOR PLAN - REQUIRED MANEUVERING CLEARANCES
1/8" = 1'-0"

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

TECTONICS
Architects
Planners
Engineers
501 W. BROADWAY, SUITE 210
SAN DIEGO, CA 92101
619.239.2151

PLANS FOR THE CONSTRUCTION OF
ALTERATIONS TO MISSION BEACH LIFEGUARD STATION
A10.2

INTERIOR DETAILS

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

FOR CITY ENGINEER: *Alex Garcia* 2/1/12
DATE: 2/1/12

SECTION HEAD: ALEX GARCIA
PROJECT MANAGER: JIHAD SLEIMAN
DESIGN ENGINEER: X
LAMBERT COORDINATES: X

CONTRACTOR: _____ DATE STARTED: _____
INSPECTOR: _____ DATE COMPLETED: _____

32848- 20 -0

GENERAL

- THESE GENERAL NOTES APPLY UNLESS SPECIFICALLY NOTED OTHERWISE. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE APPLICABLE BUILDING CODES AND ORDINANCES.
- CONTRACTOR SHALL COMPARE THE STRUCTURAL WITH THE ARCHITECTURAL DRAWINGS AS TO LAYOUT, DIMENSIONS AND ELEVATIONS BEFORE COMMENCING WORK. ANY DISCREPANCIES FOUND SHALL BE PROMPTLY REPORTED TO THE CONTRACTING OFFICER BEFORE PROCEEDING WITH THE WORK.
- CONTRACTOR SHALL VERIFY ALL SITE DIMENSIONS, CONDITIONS AND UNDERGROUND UTILITIES BEFORE COMMENCING WORK. VERIFY EQUIPMENT FOUNDATIONS AND ANCHORAGE WITH EQUIPMENT MANUFACTURER.
- INTENT: IF CERTAIN FEATURES ARE NOT FULLY OR SPECIFICALLY SHOWN OR CALLED FOR IN THE DRAWINGS OR SPECIFICATIONS, THEN THEIR CONSTRUCTION SHALL BE DEEMED TO BE THE SAME OR SIMILAR CHARACTER AS THE CONDITIONS SHOWN OR CALLED FOR, AND SHALL BE USED SUBJECT TO REVIEW.
- SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ITEMS AND/OR DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS. COORDINATE THIS WORK WITH THE STRUCTURAL WORK. OPENINGS IN SLABS, OPENINGS IN WEBS OF RAFTERS, GIRDERS OR BEAMS, AND LOADINGS NOT SHOWN ON STRUCTURAL DRAWINGS, SHALL BE SUBMITTED TO AND REVIEWED BY THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH THE WORK.
- SEE ARCHITECTURAL AND/OR MECHANICAL DRAWINGS FOR FINISHES, SIZE AND LOCATION OF OPENINGS IN WALLS FOR DOORS, WINDOWS, DUCTS AND VENTS, AND FOR LOCATIONS OF NON-BEARING PARTITIONS, MISCELLANEOUS RECESSES, DEPRESSED OR SLOPED SLAB AREAS, EXTERIOR GRADE ELEVATIONS, FLASHING INSERTS, MISCELLANEOUS IRON ITEMS, ELEVATIONS OF SLOPING ROOF SURFACES, AND LOCATION OF FLOOR DRAINS. SIZE OF OPENINGS SHOWN BUT NOT DIMENSIONED IN THE STRUCTURAL DRAWINGS SHALL BE TAKEN FROM ARCHITECTURAL AND/OR MECHANICAL DRAWINGS.
- ALL CONSTRUCTION, TESTING AND INSPECTION SHALL CONFORM TO THE 2000 UNIFORM BUILDING CODE (UBC), AND THE PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL ADEQUATELY SHORE ROOF, BRACE WALL PANELS AND SUPPORT FRAMING MEMBERS AS REQUIRED DURING CONSTRUCTION TO RESIST ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECT.
- FURNISH COPIES OF SHOP DRAWINGS FOR ALL SHOP AND FACTORY MANUFACTURED ITEMS PER SPECS.
- PROVIDE ALL NECESSARY BARRIERS, FENCES, WARNING SIGNS AND LIGHTS FOR PROTECTION OF PERSONS NEAR THE WORK AREA.
- REMOVE FROM SITE ALL DEBRIS AS PRODUCED EXCEPT MATERIALS AND EQUIPMENT TO BE SALVAGED FOR OWNER.
- CONTROL DUST ON OR ABOUT THE SITE TO PREVENT ANY DUST NUISANCE.
- PROJECT DATUM ELEVATION + 0'-0" = 10.81' AT FIRST FLOOR.

SAFETY NOTE:

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS OF THE "CONSTRUCTION SAFETY ORDERS" ISSUED BY THE STATE OF CALIFORNIA, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
- THE ARCHITECT, STRUCTURAL ENGINEER, AND THE OWNER DO NOT ACCEPT ANY RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THESE REQUIREMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE DESIGN AND CONSTRUCTION OF ALL FORMS AND SHORING REQUIRED.

DESIGN LOADS

LIVE LOADS:		
ROOF	20 PSF REDUCIBLE	
TYP. FLOOR	50 PSF REDUCIBLE	(PLUS 20 PSF PARTITION)
LOBBIES, CORRIDORS & STAIRS	100 PSF REDUCIBLE	

LATERAL LOADS:

WIND	BASIC WIND SPEED 75 MPH EXPOSURE 'C'
SEISMIC	PER 1997 CALIFORNIA BUILDING CODE, CHP. 16, ZONE 4, Z=4, I = 1.0, N _s = 1.0, N _v = 1.2, SEISMIC SOURCE TYPE = B, DISTANCE < 5 KM, SUBGRADE CLASS = S _d , R _w = 4.5 NS, MASONRY, $V = 0.244 \times W$ (STRENGTH / LRFD) R _w = 2.8 EW, STEEL STUD, $V = 0.393 \times W$ (STRENGTH / LRFD)

EARTHWORK:

- WITHIN THE PROPOSED BUILDING AND PAVING AREAS, REMOVE ALL VEGETATION TOPSOIL, PAVING AND DEBRIS FROM THE SITE.
- WITHIN THE PROPOSED BUILDING ADDITION AND FOR 5 FEET BEYOND THE BUILDING PERIMETER, REMOVE ALL VEGETATION TOPSOIL, PAVING AND DEBRIS FROM THE SITE, AND EXCAVATE 0'-6" INCHES BELOW NATIVE GRADE, OR 0'-6" INCHES BELOW BOTTOM OF FOOTINGS OR BOTTOM OF CRUSHED ROCK BASE COURSE, WHICHEVER IS DEEPER, AND SCARIFY REMAINING GROUND SURFACES 6" DEEP (MINIMUM).
- RECOMPACT SCARIFIED SOIL AT OPTIMUM MOISTURE CONTENT.
- FILL AND BACKFILL SHALL BE PLACED IN 6" MAX WELL COMPACTED LAYERS AT OPTIMUM MOISTURE CONTENT USING POWER COMPACTION EQUIPMENT. EARTH FILL SHALL BE IMPORTED GRANULAR EARTH FREE OF ORGANIC MATERIAL AND DEBRIS. COMPACT TO AT LEAST 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557-78.
- CUT AND FILL SLOPES SHALL BE NO STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL.
- CRUSHED ROCK BASE COURSE:
CONFORM TO STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION, SECTION 200 (1" CRUSHED ROCK). COMPACT TO 95%. AFTER COMPACTION, BASE SHALL BE WELL WATERED.

FOUNDATION

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SHORE AND BRACE EXCAVATIONS AND FORMS.
- SIDES OF FOUNDATIONS SHOWN STRAIGHT ARE FORMED SIDES OF FOUNDATIONS. SIDES SHOWN "ROUGH" ARE FORMED OR NOT FORMED AT CONTRACTOR'S OPTION.
- FOUNDATIONS POURED AGAINST THE EARTH REQUIRE THE FOLLOWING PRECAUTIONS; SLOPE SIDES OF EXCAVATIONS AS APPROVED BY SOILS ENGINEER AND BE RESPONSIBLE FOR CLEAN-UP OF SLOUGHING BEFORE, DURING AND AFTER PLACING CONCRETE.
- ADEQUATE COVER MUST BE PROVIDED FOR ALL REBAR.
- CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATION FOR SURFACE WATER, GROUND WATER OR SEEPAGE, IF REQUIRED.
- STEP CONTINUOUS WALL FOOTINGS AT VARYING ELEVATIONS. SLOPING BOTTOM OF FOOTING IS PROHIBITED.
- BACKFILL OVER-EXCAVATED FOOTINGS WITH CONCRETE OF SAME DESIGN STRENGTH AS FOOTING CONCRETE.
- FOR WATERPROOFING ON HORIZONTAL AND VERTICAL SURFACES BELOW GRADE (WALLS, SLABS, FOOTINGS, ETC.) SEE SPECIFICATIONS AND ARCHITECTURAL DRAWINGS.
- ELEVATION OF BOTTOM FOOTINGS IS TO MATCH BOTTOM OF ADJACENT EXISTING FOOTINGS. FOOTINGS TO BE POURED AGAINST FIRM COMPACTED FILL, AS DESCRIBED IN EARTHWORK, ABOVE. NO EXCAVATION SHALL BE MADE BELOW AND ADJACENT TO THE EDGE OF ANY FOOTING AT A SLOPE GREATER THAN 1 VERTICAL ON 2 HORIZONTAL.

CONCRETE

- WORK TO BE DONE PER AMERICAN CONCRETE INSTITUTE SPECIFICATIONS 301. ALL CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH ACI 318. USE MIXES WITH MAXIMUM AGGREGATE SIZE APPROPRIATE FOR FORM AND REBAR CLEARANCES TO BE ENCOUNTERED. (SEE A.C.I.).
- MAXIMUM SIZE OF AGGREGATE IS 3/4" IN SLABS, AND 1 1/2" IN OTHER CONCRETE, WHERE ALLOWED PER ACI.
- SPECIAL INSPECTION IS REQUIRED OF ALL CONCRETE EXCEPT NON-STRUCTURAL CONCRETE SUCH AS CURBS, SIDEWALKS, ETC.
- THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE TESTING LABORATORY. RESPONSIBILITY FOR OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S. SUBMIT TEST DATA ON EACH PROPOSED MIX FOR REVIEW.
- ALL CONCRETE SHALL HAVE THE FOLLOWING 28 DAY STRENGTHS (MINIMUM F'C):

SLABS	2500 PSI NORMAL WEIGHT
FOUNDATIONS AND WALLS	3000 PSI NORMAL WEIGHT
ALL OTHER CONCRETE	2500 PSI NORMAL WEIGHT
- SCHEDULING OF WORK MAY REQUIRE DESIGN STRENGTHS IN SHORTER PERIODS OF TIME (LESS THAN 28 DAYS).
- CONSTRUCTION JOINTS SHALL BE THOROUGHLY ROUGHENED BY SAND BLASTING OR MECHANICAL MEANS TO 1/4" MINIMUM AMPLITUDE. CLEAN BEFORE NEW POUR. LOCATION TO BE APPROVED BY THE STRUCTURAL ENGINEER. PROVIDE KEYS AT ALL WALL TO FOOTING AND SLAB TO WALL CONSTRUCTION JOINTS.
- ALL CONCRETE TO BE REINFORCED UNLESS SPECIFICALLY NOTED "NOT REINFORCED".
- PORTLAND CEMENT SHALL CONFORM TO A.S.T.M. C-150 TYPE I.
- AGGREGATE FOR HARDBLOCK CONCRETE SHALL CONFORM TO ALL REQUIREMENTS AND TESTS OF A.S.T.M. C-33 AND PROJECT SPECIFICATIONS.
- PROVIDE 3/4" CHAMFER ON ALL EXPOSED EDGES OF CONCRETE. S.A.D.
- PROJECTING CORNERS OF WALLS, ETC., SHALL BE FORMED WITH A 3/4" CHAMFER, UNLESS OTHERWISE NOTED ON ARCHITECTURAL DRAWINGS.
- AFTER CONCRETE IS PLACED, IN NO CASE SHALL THE SUPERIMPOSED CONSTRUCTION LOADS BE GREATER THAN SPECIFIED DESIGN LIVE LOADS.
- NO LOADS SHALL BE PLACED ON CONCRETE SLABS WITHIN 7 DAYS AFTER CONCRETE IS POURED.
- CONTINUOUSLY CURE ALL SLABS AND PAVING FOR 7 DAYS MINIMUM WITH SPRAYED ON CURING COMPOUND. REPLY IF DISTURBED. COVER FOOTING POURS WITH POLYETHYLENE SHEETING. IF POURING UNDER ADVERSE CONDITIONS OF HEAT, COLD OR WIND, MEASURES SHALL BE TAKEN TO PREVENT UNEVEN OR RAPID DRYING OF SLABS (PROTECT FROM CURLING).
- CONCRETE SHALL BE VIBRATED TO PRECLUDE ROCK POCKETS AND VOIDS.
- WA = HILTI 'KMK' BOLT WEDGE ANCHOR OR APPROVED EQUAL

REINFORCING STEEL

- REINFORCING STEEL TO BE A.S.T.M. A615, GRADE 60 DEFORMED BARS TYPICAL, GRADE 40 FOR #3 AND #4 BARS IS ALLOWED.
- ALL REINFORCING STEEL AND EMBEDMENTS TO BE HELD SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO ALLOW WALKING ON BARS WITHOUT DISPLACING REINFORCEMENT.
- WELDING OF REINFORCING IS PROHIBITED.
- PROVIDE DOWELS AT ALL CONSTRUCTION JOINTS (I.E., WALL TO FOOTING) OF SAME SIZE AND SPACING AS INTERRUPTED BARS, MINIMUM U.O.N.
- PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE, PLACE ONLY AS SHOWN OR APPROVED, STAGGER SPLICES WHERE POSSIBLE.
- REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER, BUT NOT LESS THAN ONE (1) BAR DIAMETER UNLESS OTHERWISE NOTED:
- | | |
|--|------|
| CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, NOT FORMED.. | 3" |
| CONCRETE FORMED AND EXPOSED TO EARTH OR WEATHER - #6 AND LARGER BARS.. | 2" |
| #5 BAR, W31 OR D31 WIRE AND SMALLER.. | 1.5" |
| CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND: | |
| BEAMS AND COLUMNS | 1.5" |
| OTHER MEMBERS | 3/4" |
- DETAIL ACCORDING TO A.C.I. STANDARD 315, MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.
- DO NOT DAMAGE EXISTING REINFORCING STEEL WHEN DRILLING WHERE NEW EMBEDS ARE TO BE INSTALLED IN CONCRETE. IF NECESSARY, USE A PACHOMETER TO VERIFY EXISTING REINFORCING STEEL LOCATIONS. IF REINFORCING IS ENCOUNTERED, ADJUST LOCATIONS TO AVOID CUTTING REINFORCING.

MASONRY (CONCRETE MASONRY UNITS, CONCRETE BLOCK (CMU))

- CONCRETE BLOCK SHALL BE NORMAL WEIGHT, HOLLOW LOAD-BEARING CONCRETE NORMAL WEIGHT MASONRY UNITS CONFORMING TO ASTM C90, GRADE N, TYPE 1, WITH A MINIMUM NET-AREA COMPRESSIVE STRENGTH OF 1900 psi. USE UNITS OPEN ONE END AT VERTICAL REINFORCING, AND BOND BEAM UNITS AT HORIZONTAL REINFORCEMENT. ALL BLOCK SHALL BE FROM THE SAME SOURCE.
- MORTAR MIX SHALL CONFORM TO REQUIREMENTS FOR TYPE S AND PROJECT SPECIFICATIONS.
- GROUT SHALL CONFORM TO REQUIREMENTS FOR COARSE GROUT. GROUT SHALL ATTAIN A COMPRESSIVE STRENGTH OF 2000 psi AT 28 DAYS.
- ALL CELLS IN CONCRETE BLOCKS SHALL BE FILLED WITH GROUT. MAXIMUM FREE FALL FOR GROUTING OF VERTICAL CELLS SHALL BE 4'-0".
- PROVIDE A MINIMUM OF 1/2" GROUT BETWEEN REINFORCING AND MASONRY UNITS. REINFORCING SHALL BE SECURED AGAINST DISPLACEMENT.
- MINIMUM COMPRESSIVE STRENGTH OF COMPLETED MASONRY WALL IS 1500 psi FOR FULLY GROUTED WALLS, UON.
- EPOXY EMBEDS SHALL BE INSTALLED PER THE SPECIFICATIONS. HOLES SHALL BE NYLON-BRUSHED AND VACUUMED OUT.
- DRILLED HOLES SHALL NOT CUT EXISTING REINFORCING. IF REINFORCING IS ENCOUNTERED, ADJUST LOCATIONS TO AVOID CUTTING REINFORCING.
- SEE CONCRETE NOTES FOR REINFORCING REQUIREMENTS. SECURE ALL REINFORCEMENT AGAINST MOVEMENT.

CARPENTRY:

- FRAMING LUMBER SHALL BE DOUGLAS FIR, LARCH, GRADE NO. 1 MIN., CONFORMING TO WEST COAST LUMBER INSPECTION BUREAU STANDARD GRADING RULES, SAS.
- PLYWOOD OR STRUCTURAL SHEATHING SHALL BE GRADE STAMPED CONFORMING TO THE GRADING REQUIREMENTS OF U.S. PRODUCT STANDARD PS-1, OR PS-2, FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD OR STRUCTURAL SHEATHING. NAILING OF ROOF DIAPHRAGM TO BE INSPECTED PRIOR TO APPLICATION OF ROOFING. STAGGER PLYWOOD OR STRUCTURAL SHEATHING JOINTS. MIN. DIMENSION OF ANY SHEATHING PIECE IS 2'-0".
 - ROOF SHEATHING - 5/8" C-D EXTERIOR (EXTERIOR GLUE)
- MINIMUM NAILING SCHEDULE: ALL NAIL SHALL BE COMMON WIRE FULL HEAD NAILS. WHERE NAILS TEND TO SPLIT WOOD, HOLES SHALL BE SUBDRILLED. DO NOT DRIVE NAILS CLOSER TO THE EDGE OF THE MEMBER THAN A QUARTER THEIR LENGTH, EXCEPT EDGES OF SHEATHING, WHERE MINIMUM DISTANCE IS 3/8 INCH. UNLESS OTHERWISE NOTED, NAILING SHALL NOT BE LESS THAN THE FOLLOWING:

JOISTS TO BEARING - TOE NAIL EACH SIDE	2-16d
DOUBLE JOISTS:	
NOT BLOCKED APART - INTERNAL STAG	16d at 12" o.c.
BLOCK APART - EACH BLOCK, EACH SIDE	2-16d
BLOCKING BETWEEN JOISTS:	
TO BEARING - TOE NAIL EACH SIDE	2-16d
TO JOISTS 10" IN DEPTH AND GREATER:	
THROUGH NAIL, ONE END	3-20d
TOE NAIL EACH, OPPOSITE END	3-16d
TO JOISTS 8" IN DEPTH AND LESS:	
THROUGH NAIL, ONE END	3-16d
TOE NAIL EACH, OPPOSITE END	2-16d
- 1/2", 5/8" OR 3/4" SHEATHING 10d at 6" o.c. at PANEL EDGES
- BOLTS IN WOOD FRAMING SHALL BE STANDARD MACHINE BOLTS (MB) CONFORMING TO ASTM A307, INSTALLED WITH MALLEABLE IRON WASHERS OR PLATE WASHER UNDER HEAD AND NUT.
- SILL AND ANCHOR BOLTS (AB) SHALL CONFORM TO ASTM A307, AND BE INSTALLED WITH A MALLEABLE OR PLATE WASHER UNDER NUT.
- LAG BOLTS: INSTALL WASHER UNDER HEAD OF LAG BOLTS. DRILL LEAD HOLES OF SAME DIAMETER AS BOLT FOR UNTHREADED LENGTH OF SHANK, FOLLOW WITH A LEAD HOLE OF 3/16" DIAM SMALLER THAN SHANK FOR THE THREADED LENGTH. USE LUBRICANT ON LAG BOLT. TURN LAG BOLT WITH WRENCH. DO NOT DRIVE IT WITH HAMMER.
- EXPANSION BOLTS (WA): AS MANUFACTURED BY HILTI, TO BE 'KMK BOLT', OR APPROVED EQUAL, AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- POWDER ACTUATED FASTENERS (PAF): HILTI 'DS' 0.177" DIAM PINS, OR APPROVED EQUAL, WITH 1-1/4" MIN PENETRATION INTO CONCRET, UON.
- CONNECTORS AND HANGERS SHALL BE AS MANUFACTURED BY SIMPSON STRONG-TIE CO, INC., OR APPROVED EQUIVALENT, PROVIDED IT HAS ICBO ACCEPTANCE. CONNECTORS ARE LISTED BY MODEL NUMBER, AS INDICATED IN THE SIMPSON CATALOG. USE ALL SPECIFIED NAILS OR BOLTS CORRESPONDING TO THE MODEL NUMBER LISTED. SHORT NAILS, OF SAME SHANK DIAMETER MAY BE USED WITH JOIST HANGERS AND CONNECTORS AS APPROVED BY THE MANUFACTURER.

SPECIAL INSPECTIONS:

- SPECIAL INSPECTIONS AND TESTING SHALL BE PROVIDED BY AN INDEPENDENT, CERTIFIED LABORATORY, IN ADDITION TO THE INSPECTIONS CONDUCTED BY THE CITY OR COUNTY BUILDING DEPARTMENT, THE OWNER OR BY HIS AUTHORIZED AGENT. SPECIAL INSPECTIONS SHALL BE PROVIDED IN ADDITION TO ANY OTHER INSPECTIONS. THE SPECIAL INSPECTIONS SHALL NOT BE CONSTRUED TO RELIEVE THE OWNER OR HIS AUTHORIZED AGENT FROM REQUESTING AND HAVING CONDUCTED THE PERIODIC INSPECTIONS REQUIRED BY SECTION 108 AND CHAPTER 17 OF THE UNIFORM BUILDING CODE.
- SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING WORK:

CONCRETE:

- PLACING OF REINFORCING
- DURING THE PLACING OF CONCRETE.
- HOLD-DOWNS AND HARDWARE PLACEMENT
- DURING THE TAKING OF SPECIMENS.

MASONRY:

- PLACING OF BLOCKS.
- PLACING OF REINFORCING.
- PLACING OF GROUT.

CARPENTRY:

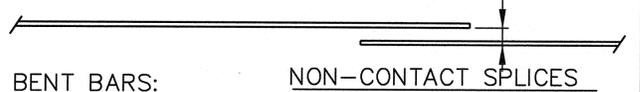
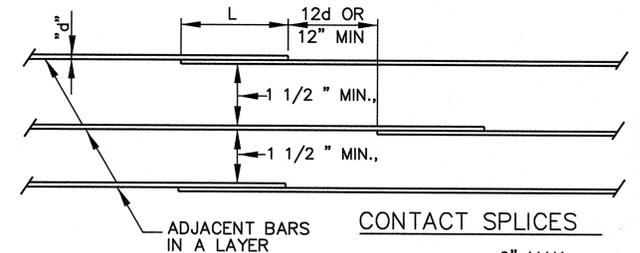
- SHEAR NAILING

POST INSTALLED ANCHORS:

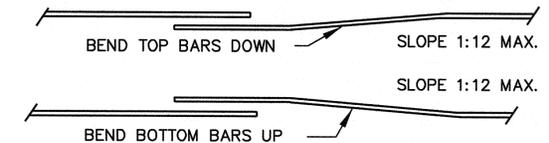
- EPOXY

BAR LAP SPLICE NOTES

- THE SCHEDULE SHOWN ON THIS SHEET APPLIES TO REGULAR WEIGHT CONCRETE @ 145 TO 150 PCF, AND TO GRADE 60 BARS TYPICAL.
- ALL SPLICES SHALL BE STAGGERED AS SHOWN BELOW. IF MORE THAN 50% OF THE REINFORCING IS LAP SPLICED WITHIN THE REQUIRED LAP SPLICE LENGTH, THE LAP SPLICE LENGTH SHALL BE INCREASED 33%.
- THE SMALLER BAR LAP LENGTH SHALL BE USED WHEN SPLICING DIFFERENT SIZE BARS.
- TOP BARS ARE HORIZONTAL BARS PLACED SO THAT 12" OR MORE OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR. USE TOP BAR LAP LENGTHS FOR BARS IN SLABS WHERE MORE THAN 12" OF CONCRETE IS CAST BELOW THEM.
- ALL DETAILING AND PLACING OF REINFORCING SHALL COMPLY WITH THE LAP SPLICE SCHEDULE AND DETAILS, UNLESS SPECIFICALLY DETAILED OTHERWISE ON THE DRAWINGS. LAP LENGTHS DETAILED OTHERWISE ON THE DRAWINGS SHALL GOVERN.
- SPLICED BARS SHALL BE WIRED IN CONTACT TYPICAL. IF ANY NON-CONTACT SPLICES OCCUR IN THE FIELD, THE CENTERLINE SPACING SHALL NOT BE GREATER THAN 6".



AT BEAM CORNER BARS, AND WHERE LAPPED BARS WOULD REDUCE BAR CLEAR SPACING TO LESS THAN 1 1/2", BEND SPLICED BARS UP OR DOWN AS SHOWN:

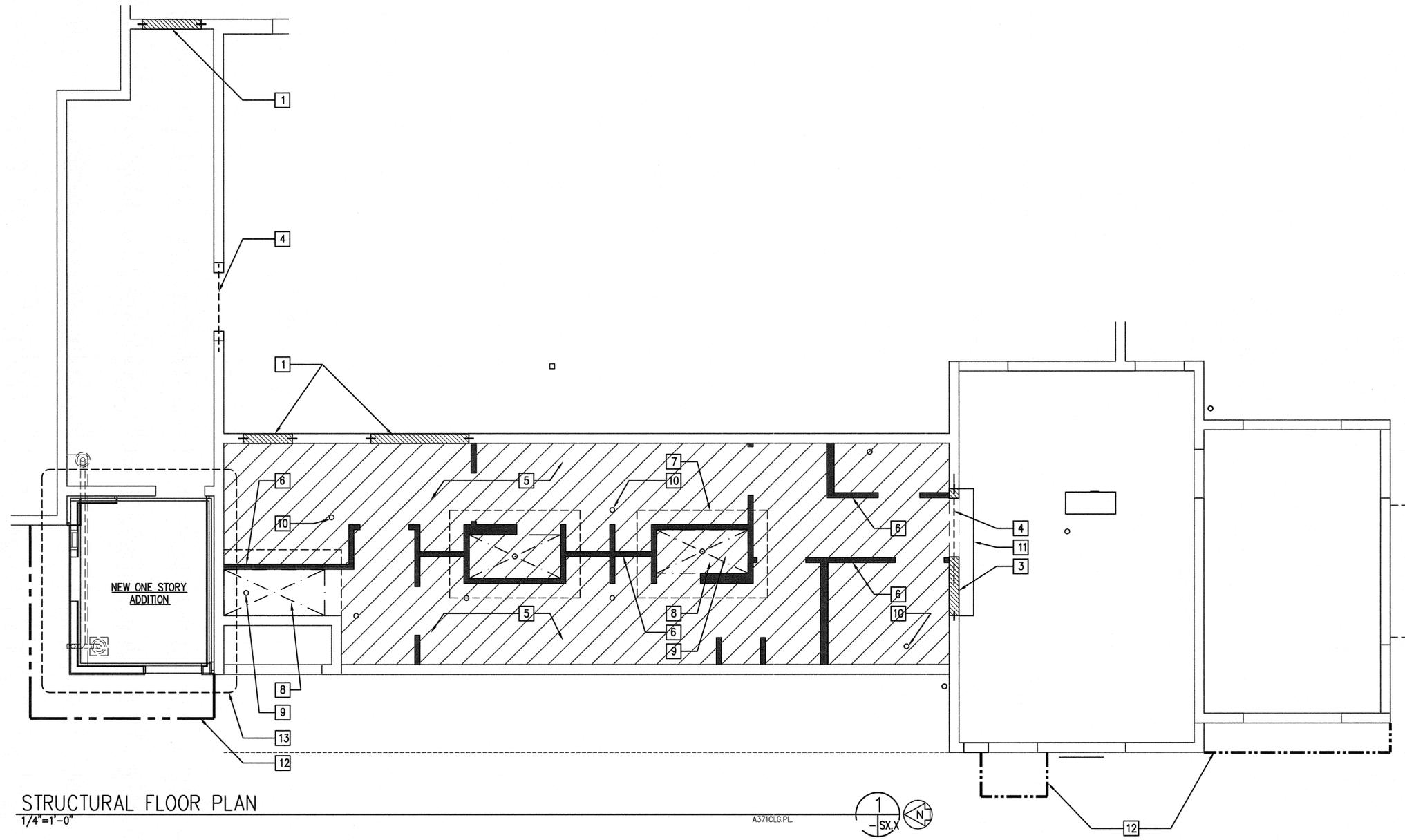


BAR LAP SPLICE SCHEDULE AND DETAILS

N.T.S. 1
S-001

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

 501 W. BROADWAY, SUITE 210 SAN DIEGO, CA 92101 619.239.2151	IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.	PLANS FOR THE CONSTRUCTION OF ALTERATIONS TO MISSION BEACH LIFEGUARD STATION S0.1												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SYM</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	SYM	DESCRIPTION	DATE										STRUCTURAL NOTES
SYM	DESCRIPTION	DATE												
CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT		W.B.S. NO. S-00793												
		FOR CITY ENGINEER: <i>Michael J. Ross</i> 2/1/12 DATE: 2/1/12	ALEX GARCIA SECTION HEAD JIHAD SLEIMAN PROJECT MANAGER											
AS-BUILT CONTRACTOR: _____ DATE STARTED: _____ INSPECTOR: _____ DATE COMPLETED: _____		DESIGN ENGINEER: _____ LAMBERT COORDINATES: _____ 32848-21-D												



GENERAL NOTES

- A. AT (E) DOOR OPENINGS TO BE FILLED - IN W/ CMU, REMOVE CONC. SLAB TO TOP OF (E) CONC. FOUNDATION WALL AND INSTALL (N) CMU IN-FILL TO MATCH (E) COURSING
- B. ALL (N) CMU USED FOR INFILL SHALL MATCH (E) CMU AT ADJACENT WALLS - VERIFY
- C. WHERE (E) CMU WALLS ARE TO BE CUT TO INSTALL (N) DOORWAY REMOVE (E) CMU TO MIN 4" BELOW TOP OF FIN. FLOOR & FILL SOLID W/ CONC. TO TOP OF FIN. FLR.
- D. PROVIDE ALL NECESSARY TEMPORARY SHORING OF THE (E) STRUCTURE TO INSURE NO DAMAGE OCCURS WHERE (N) OPENINGS ARE CUT INTO (E) WALLS
- E. REFER TO ARCHITECTURAL DEMO PLAN, A1.1, FOR EXTENT OF DEMOLITION WORK. VERIFY ALL CONDITIONS IN FIELD.

KEYED NOTES

- 1 PROVIDE 8" CMU INFILL AT (E) DOOR OPENINGS TO BE FILLED - IN, INSTALL NEW INFILL W/ DOWELS INSERTED INTO (E) MASONRY PER DETAIL 3/S3.1
- 2 PROVIDE PARTIAL HT. 8" CMU INFILL PANEL, FLOOR TO SILL HEIGHT, SEE DETAIL 3/S3.1 SIM.
- 3 PROVIDE CMU INFILL AT PORTION OF (E) OPENING, SEE DETAIL 6/S3.1
- 4 PROVIDE (N) LINTEL AT (N) OPENING IN CMU WALL, SEE DETAIL 6/S3.1
- 5 PROVIDE (N) 4" REINF. CONC. SLAB AT LOCKER ROOM AND TOILET RM. AREA (SHOWN HATCHED) W/ #3 BARS @ 16" O.C.
- 6 (N) PARTITIONS, SEE 7/S3.1
- 7 THICKEN SLAB TO 6" REINF. CONC. SLAB AT AREA NOTED (16" BEYOND PERIMETER OF SHOWER STALL)
- 8 PROVIDE 1-1/2" DEEP BOX-OUT AT SHOWER STALL FOR CERAMIC TILE INSTALLATION
- 9 FLOOR DRAIN AT SHOWER STALL 3/4" BELOW FIN. FLR. ELEV. AT LOCKER RMS.
- 10 FLOOR DRAIN - SET TOP OF FLR. DRAIN 3/8" BELOW TOP OF FIN. FLR. - DISH FLOOR 14" DIAM. AROUND FLR. DRAIN & SLOPE EVENLY TO DRAIN RIM
- 11 PATCH CONC. FLR. TO MATCH (E), DOWEL INTO (E) SLAB PER DETAIL 8/S3.1
- 12 PATCH CONC. PAVING AT EXTERIOR WALKWAY, SPLICE (N) INTO (E) PER DETAIL 8/S3.1
- 13 SEE SHEET S2.1 FOR STRUCTURAL PLANS FOR NEW ADDITION

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION
S1.1

STRUCTURAL FLOOR PLAN
CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

FOR CITY ENGINEER		DATE		W.B.S. NO. S-00793	
<i>Alex Garcia</i>		2/1/12		ALEX GARCIA SECTION HEAD	
DESCRIPTION	BY	APPROVED	DATE	FILMED	PROJECT MANAGER
ORIGINAL					Jihad Sleiman
					DESIGN ENGINEER
					X LAMBERT COORDINATES
AS-BUILT					
CONTRACTOR		DATE STARTED			
INSPECTOR		DATE COMPLETED			

TECTONICS
Architects
Planners
Engineers

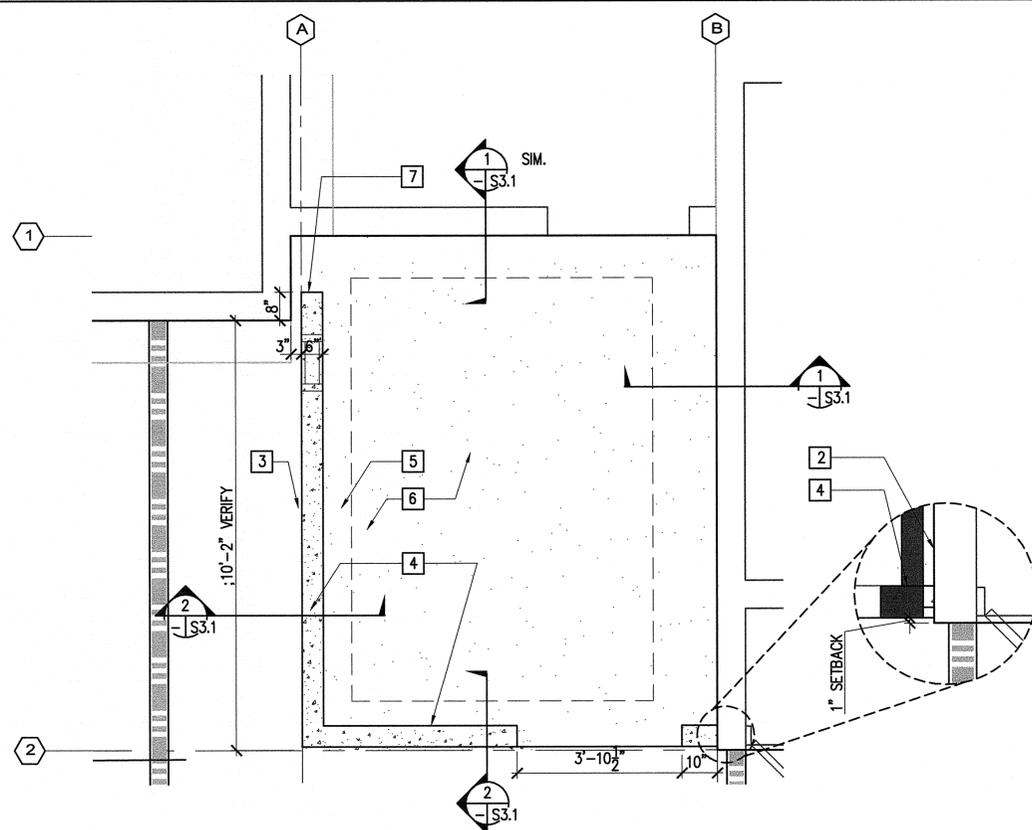
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SAN DIEGO, CA 92101
619.239.2151

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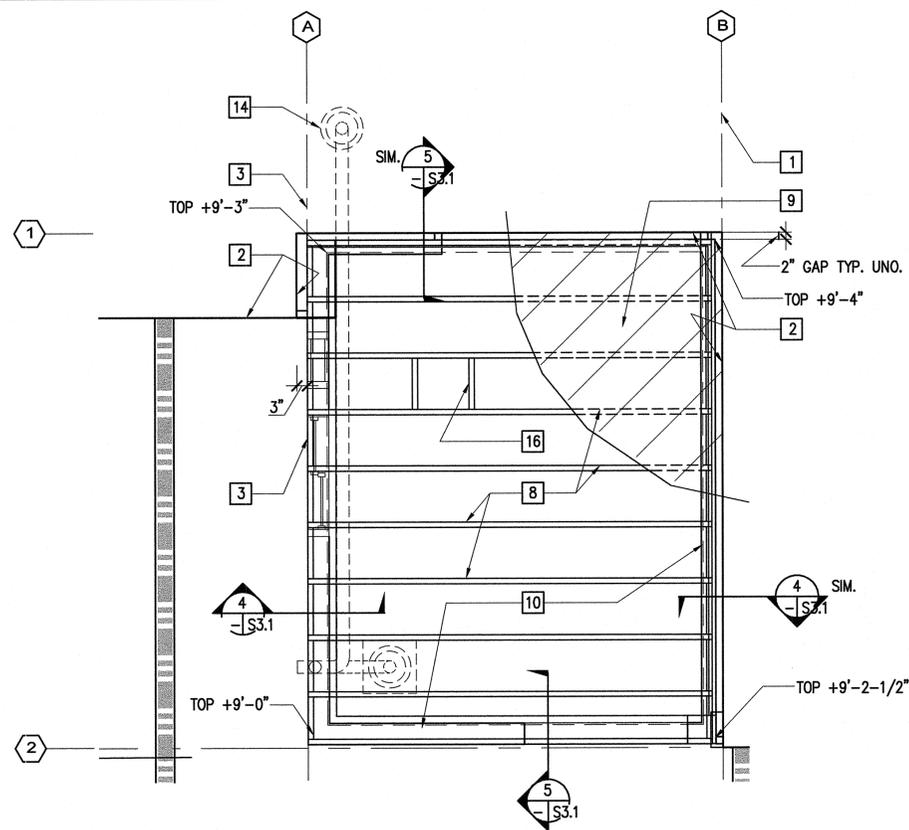
SYM	DESCRIPTION	DATE

KEYED NOTES

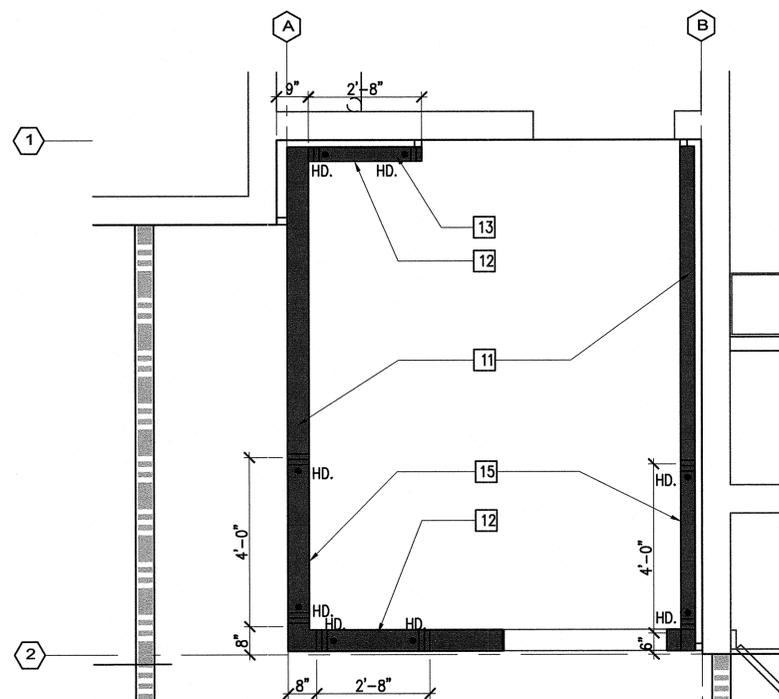
- 1 LINE OF FACE OF (E) CMU. AND GRIDLINE
- 2 LINE OF FACE OF (E) CMU.
- 3 LINE OF FACE OF (N) CONC. CURB AND PLYWD. SHEATHING
- 4 6" WIDE CONC. CURB
- 5 LINE OF CONC. FOOTING BELOW
- 6 5" CONC. FLOOR SLAB W/ #4 REINF. BARS AT 16" EACH WAY, 0/ 10 MIL VISQUEEN O/ 4" SAND
- 7 END OF 6" CONC. CURB
- 8 2 X 10 ROOF JOISTS @ 16" O.C. PROVIDE 1/4" SLOPE IN EACH DIRECTION AS SHOWN ON ROOF PLAN
- 9 3/4" THICK PLYWD. DECK
- 10 LINE OF INTERIOR WD. STUD FRAMING
- 11 INTERIOR STUD FRAMING (SHADED)
- 12 PREFABRICATED SIMPSON SW 32 X 8 STANDARD STRONG WALLS PANELS, SEE 2/S3.2
- 13 HOLD-DOWN
- 14 ROOF DRAIN LOCATIONS
- 15 PREFABRICATED SIMPSON SW 48 X 8 STANDARD STRONGWALL PANELS, SEE 2/S3.2
- 16 PROVIDE INTERMEDIATE BLOCKING AT ROOF DUCT PENETRATION / CURB - VERIFY LOCATION.



STRUCTURAL FOUNDATION PLAN
1/2"=1'-0"



ROOF FRAMING PLAN
1/2"=1'-0"



STRUCTURAL SHEAR WALL PLAN
1/2"=1'-0"

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SYM	DESCRIPTION	DATE

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION

S2.1

STRUCTURAL PLANS

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S. NO. S-00793

FOR CITY ENGINEER DATE 2/1/12

ALEX GARCIA
SECTION HEAD

DESCRIPTION BY APPROVED DATE FILMED

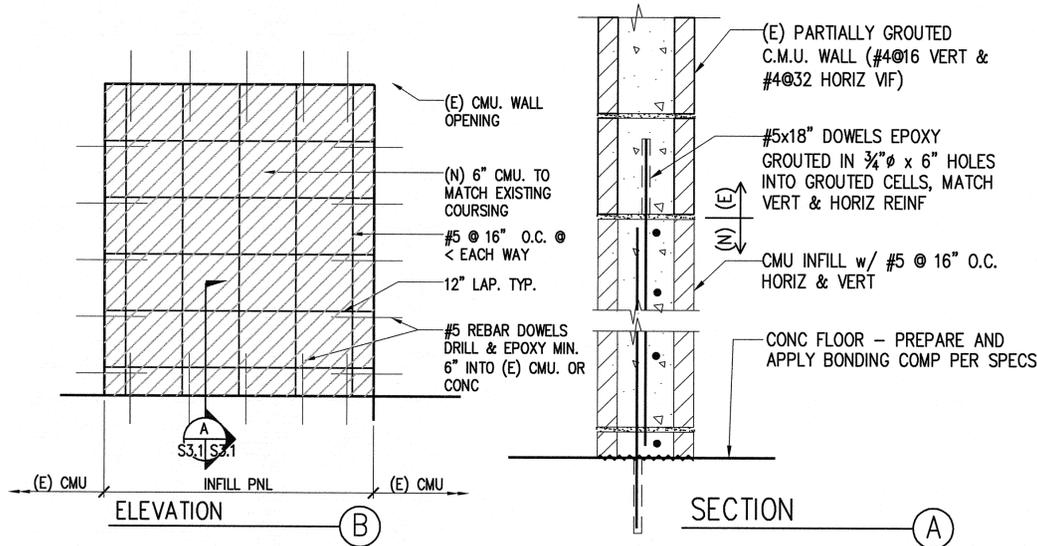
JIHAD SLEIMAN
PROJECT MANAGER

DESIGN ENGINEER

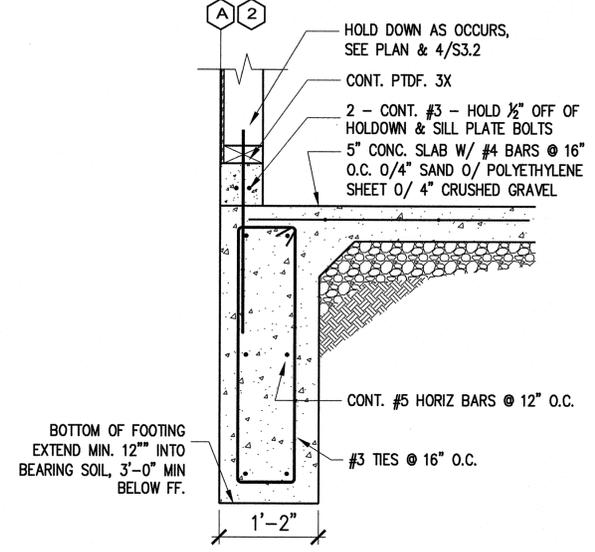
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X LAMBERT COORDINATES

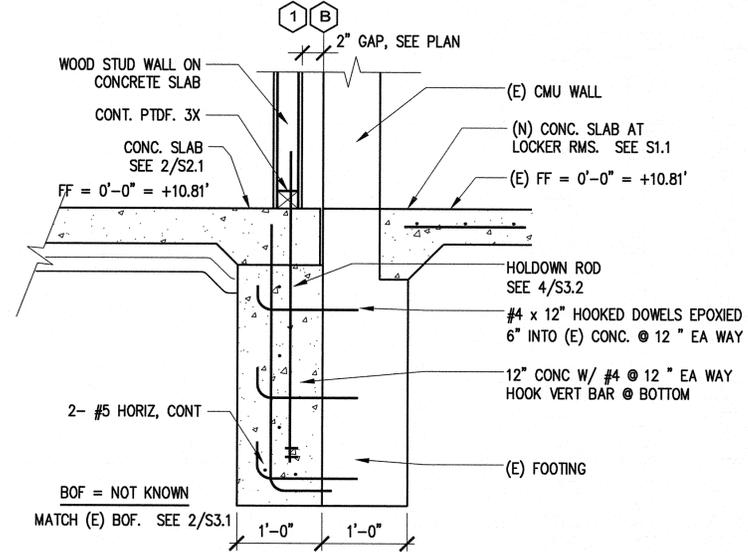
32848- 23 -D



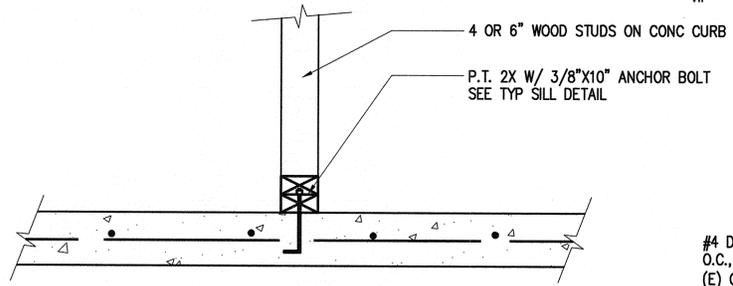
CMU INFILL PANEL REINFORCING
 3/4" = 1'-0"
 S0371-DET03



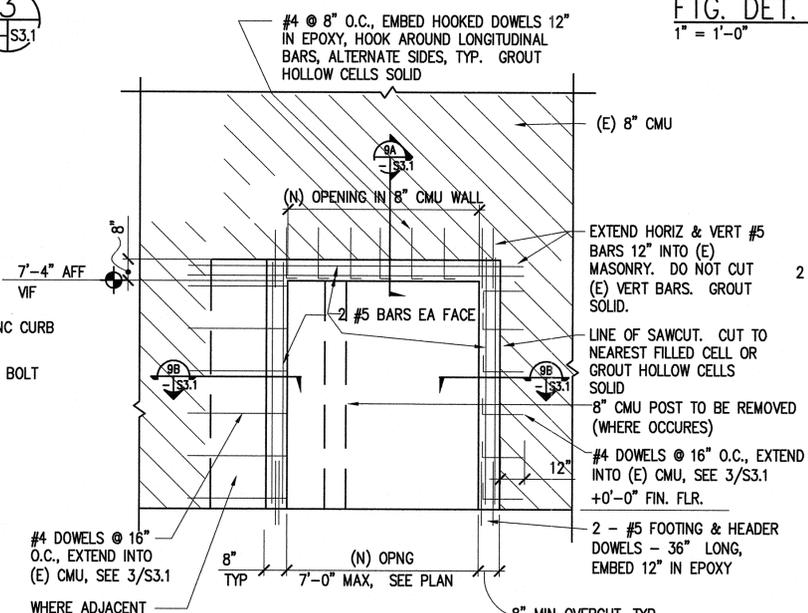
FTG. DET. @ ADDITION EXT. WALL
 1" = 1'-0"
 S371-DET02



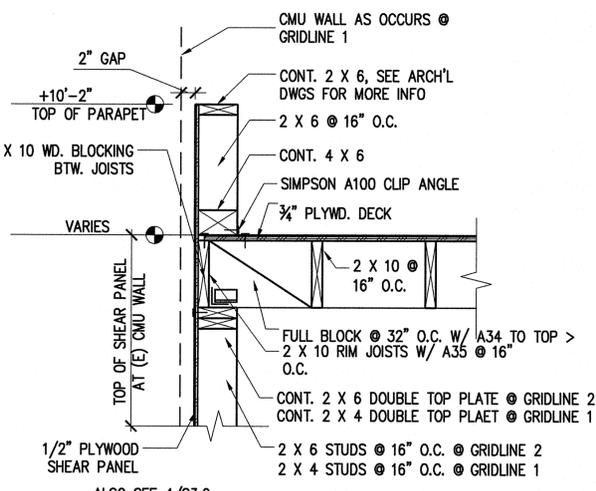
FTG & WALL @ ADJACENT BLDG
 1" = 1'-0"
 S371-DET01



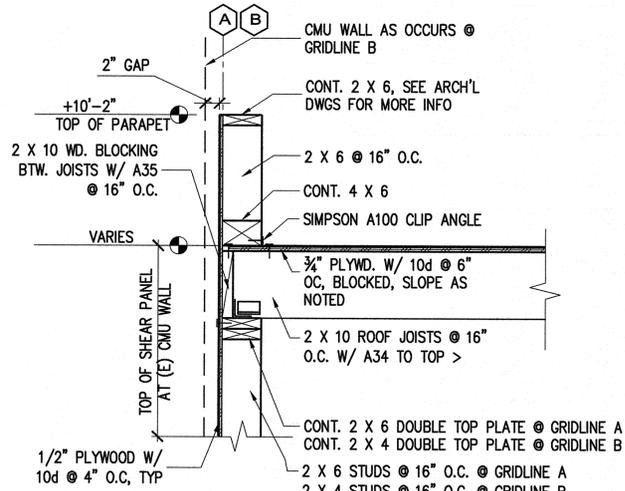
INTERIOR WALL DETAIL
 1-1/2" = 1'-0"
 S0371-DET07



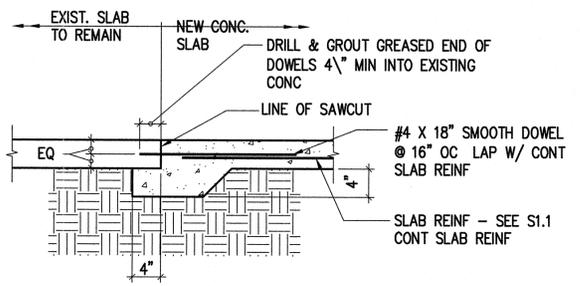
DETAIL @ NEW OPENING IN CMU
 3/8" = 1'-0"
 S0371-DET06
 NOTE: PROVIDE SHORING & DESIGN PER SPECIFICATIONS



ROOF FRAMING @ EXT. WALL
 1" = 1'-0"
 S371-DET05



ROOF FRAMING @ EXT. WALL
 1" = 1'-0"
 S371-DET04



TYP. DETAIL @ NEW/ EXIST. CONC. SLABS
 3/4" = 1'-0"
 S0371-DET08

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 Architects
 Planners
 Engineers

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 SAN DIEGO, CA 92101
 619.239.2151

Professional Engineer Seal
 MICHAEL J. HO'S
 No. 12345
 Exp. 6/30/12
 STRUCTURAL
 STATE OF CALIFORNIA

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PLANS FOR THE CONSTRUCTION OF
 ALTERATIONS TO MISSION BEACH LIFEGUARD STATION
S3.1

STRUCTURAL DETAILS

CITY OF SAN DIEGO, CALIFORNIA
 ENGINEERING DEPARTMENT

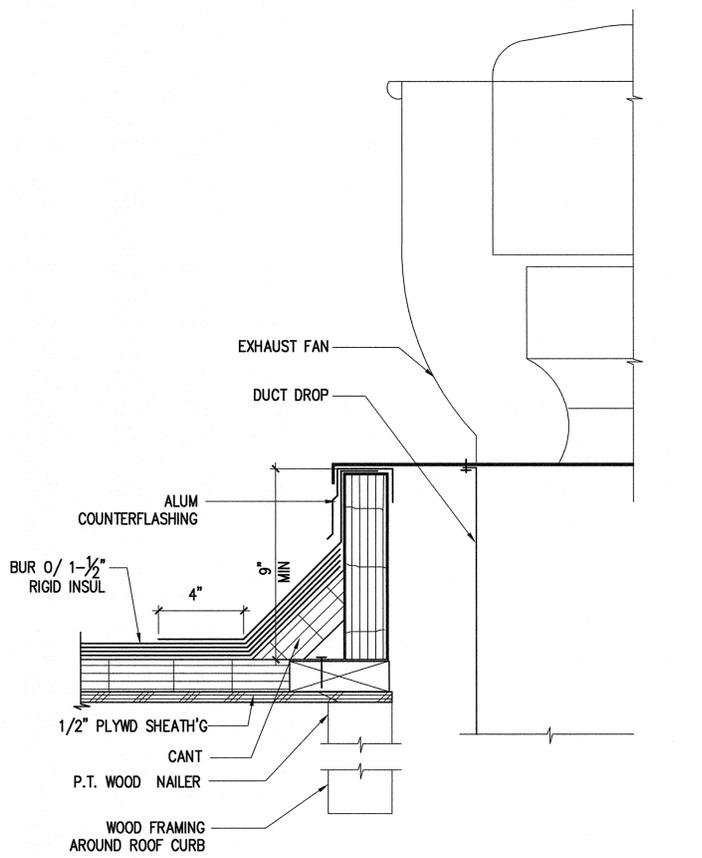
FOR CITY ENGINEER DATE 2/1/12
 ALEX GARCIA SECTION HEAD
 JIHAD SLEIMAN PROJECT MANAGER

DESIGN ENGINEER
 X
 LAMBERT COORDINATES

CONTRACTOR DATE STARTED
 INSPECTOR DATE COMPLETED

32848-24 -D

SPECIFICATION NO. 5651
 CITY CONTRACT, W.B.S. NO. S-00793



ROOF MOUNTED EXHAUST FAN
 3"=1'-0" A371RFEF MO.1

MECHANICAL SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
	10X4	NEW DUCTWORK (1ST NUMBER INDICATES SIDE SHOWN)
		ROUND ELBOW
	T.V.	SQUARE ELBOW WITH TURNING VANES
	M.V.D.	MANUAL VOLUME DAMPER
	F.C.	FLEXIBLE CONNECTOR (DUCTWORK)
		LINED DUCTWORK
		ROUND DUCT UP
		ROUND DUCT DOWN
		DUCT UP
		DUCT DOWN
		DUCT TRANSITION (RECTANGULAR OR ROUND)
		DUCT TRANSITION (RECTANGULAR TO ROUND)
	F.S.D.	FIRE SMOKE DAMPER
	R.S.	REFRIGERANT SUCTION LINE
	R.L.	REFRIGERANT LIQUID LINE
		FLEXIBLE DUCTWORK
	T*STAT	THERMOSTAT (NUMBER INDICATES UNIT SERVED)
	F.D.	FIRE DAMPER
	S.A.	SUPPLY AIR DUCT
	R.A./O.A.	RETURN AIR DUCT/OUTSIDE AIR DUCT
	E.A.	EXHAUST AIR DUCT
	C.D.	CEILING DIFFUSER
	R.R./R.G.	RETURN REGISTER/RETURN GRILLE
	TG	TRANSFER GRILLE (WALL)
	E.R./E.G.	EXHAUST REGISTER/EXHAUST GRILLE
	A.F.F.	ABOVE FINISHED FLOOR
	ABV.	ABOVE
	A.C.	AIR CONDITIONING
	BEL.	BELOW
	C.A.	COMBUSTION AIR
	CLG.	CEILING
	CONC.	CONCRETE
	CONN.	CONNECT OR CONNECTION
	CONT.	CONTINUATION
	C.F.M.	CUBIC FEET PER MINUTE
	DN.	DOWN
	F.C.	FLEX CONNECTION
	FLR.	FLOOR
	MAX.	MAXIMUM
	MIN.	MINIMUM
	O.A.	OUTSIDE AIR
	S.P.	STATIC PRESSURE
	TYP.	TYPICAL
	V.	VENT

EXHAUST FAN SCHEDULE

MARK	LOCATION	SERVICE	TYPE	CFM	S.P.	RPM	MAX. TIP SPEED	HP	V-φ-CPS	DRIVE	MANUFACTURER & MODEL NO.	OPERATING WEIGHT	REMARKS
EF 1	(E) ROOF WALKWAY	RESTROOMS, LOCKER ROOM	CENTRIFUGAL	200	4.3	1550	1800	1/60	115-1-60	DIRECT	GREENHECK G-60-D	14 LBS.	REPLACE EXISTING FAN. PROVIDE BACKDRAFT DAMPER AND INSTALLATION KIT.
EF 2	(E) ROOF WALKWAY	LOCKER ROOMS	CENTRIFUGAL	425	1/25	1550	1800	1/25	115-1-60	DIRECT	GREENHECK G-75-D	15 LBS.	REPLACE EXISTING FAN. PROVIDE BACKDRAFT DAMPER AND INSTALLATION KIT.
EF 3	NEW ROOF	NEW ADDITION	CENTRIFUGAL	250	2.5	1300	1800	1/100	115-1-60	DIRECT	GREENHECK G-70-E	15 LBS.	PROVIDE BACKDRAFT DAMPER INSTALLATION KIT.

MECHANICAL GENERAL NOTES

- CONTRACTOR SHALL CAREFULLY REVIEW THESE PLANS AND SPECIFICATIONS. CONTRACTOR SHALL ALSO REVIEW PLANS AND SPECIFICATIONS OF OTHER RELATED TRADES (INCLUDING CIVIL, STRUCTURAL, AND ELECTRICAL) TO INSURE AN ACCURATE UNDERSTANDING OF EXACT SCOPE OF WORK.
- CONTRACTOR SHALL VERIFY ALL EQUIPMENT MODEL NUMBERS, CAPACITIES, SIZES, VOLTAGES, AND ALL OTHER SCHEDULED INFORMATION WITH OTHER APPLICABLE TRADES AND WITH THE MANUFACTURER PRIOR TO INSTALLATION.
- THESE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC, AND ARE NOT INTENDED TO INDICATE ALL DETAILS AND NECESSARY OFFSETS OF PIPING. THE CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT IN A MANNER AS TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM, AND KEEP OPENINGS AND ACCESS CLEAR. CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES OR CONFLICTS THAT WOULD AFFECT THE SYSTEM PERFORMANCE. THIS NOTIFICATION SHALL BE SUBMITTED PRIOR TO INSTALLATION OF THE ITEMS CONCERNED.
- NEW EQUIPMENT INDICATED ON THIS DRAWING IS SHOWN IN APPROXIMATE POSITION(S). CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING EQUIPMENT LOCATIONS, P.O.C.'S AND STRUCTURAL MEMBERS PRIOR TO INSTALLATION. IN ALL CASES, ADEQUATE ACCESS (PER MANUFACTURER'S RECOMMENDATIONS AND CODE COMPLIANCE) FOR MAINTENANCE AND REPLACEMENT OF EQUIPMENT SHALL BE PROVIDED.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE CODES. NOTHING SHOWN ON THE PLANS OR STATED IN THE SPECIFICATIONS IS INTENDED TO INDICATE THAT THE INSTALLATIONS OR CONNECTIONS OF ANY ITEM OR DEVICE SHOULD BE DONE CONTRARY TO MANUFACTURER'S INSTRUCTIONS AND ALL APPLICABLE CODES AND REGULATIONS.
- SUBMITTALS: APPROVAL OF SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM OBLIGATIONS TO FULLY COMPLY WITH ALL REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS OR APPLICABLE CODE REGULATIONS.

SPECIFICATION NO. 5651
 CITY CONTRACT, W.B.S. NO. S-00793

TECTONICS
Architects
 Planners
 Engineers

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 SAN DIEGO, CA 92101
 619.239.2151

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SYM	DESCRIPTION	DATE

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
 MISSION BEACH LIFEGUARD STATION

MO.1

MECHANICAL NOTES, SYMBOLS & ABBREVIATIONS

CITY OF SAN DIEGO, CALIFORNIA
 ENGINEERING DEPARTMENT

W.B.S. NO. S-00793

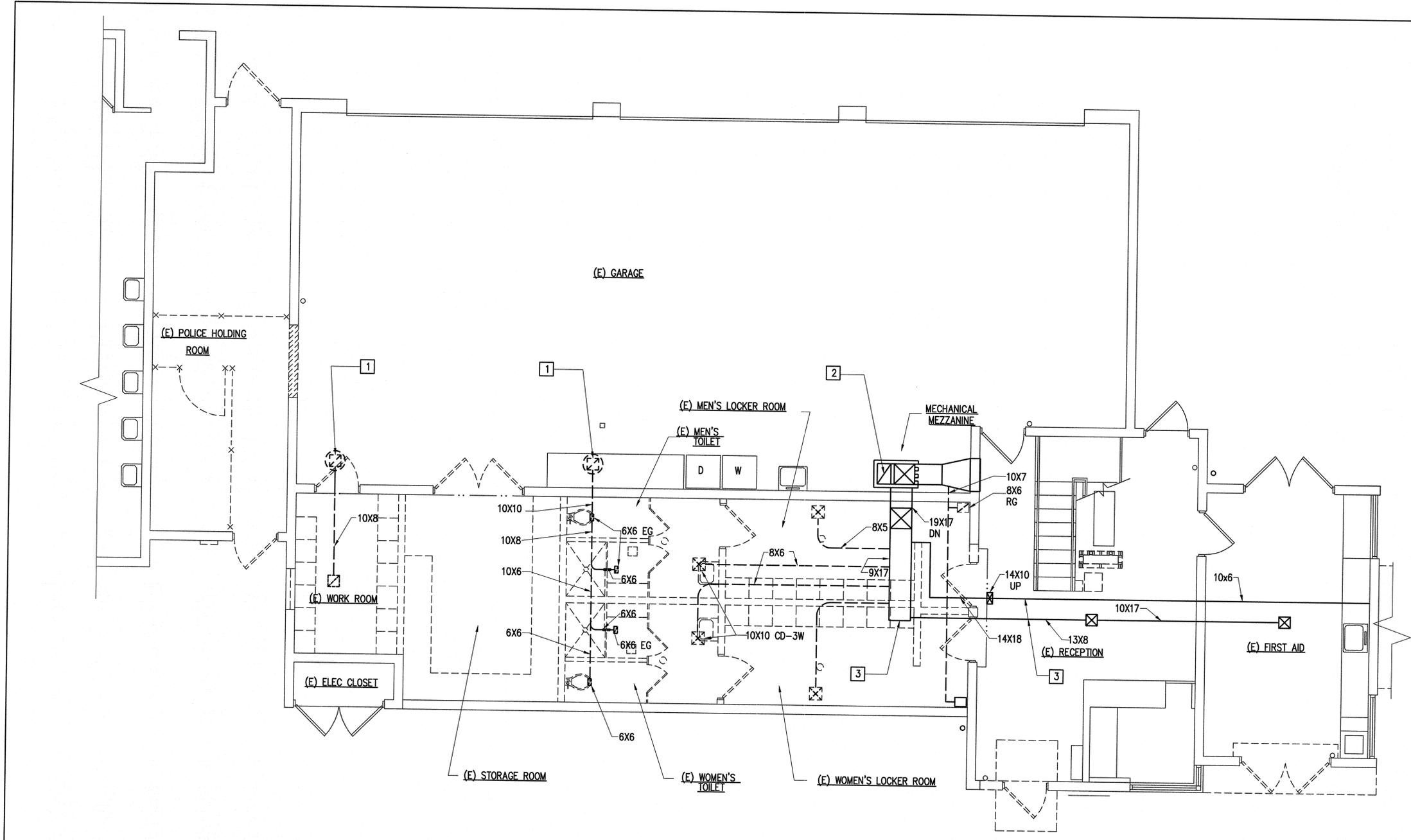
Alex Garcia 2/1/12
 FOR CITY ENGINEER DATE

DESCRIPTION	BY	APPROVED	DATE	FILED
ORIGINAL				

DESIGN ENGINEER
 X
 LAMBERT COORDINATES

CONTRACTOR _____ DATE STARTED _____
 INSPECTOR _____ DATE COMPLETED _____

32848-26 -D



GENERAL NOTES

A. SEE MO.1 FOR GENERAL NOTES

KEYED NOTES

- 1 (E) EXH. FAN TO BE REPLACED.
- 2 (E) AIR HANDLING UNIT TO REMAIN
- 3 (E) DUCTWORK TO REMAIN

LEGEND

SEE SHEET MO.1

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO MISSION BEACH LIFEGUARD STATION
M1.1

FIRST FLOOR MECHANICAL DEMOLITION PLAN

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S. NO. S-00793

FOR CITY ENGINEER DATE 2/1/12

ALEX GARCIA SECTION HEAD

DESCRIPTION BY APPROVED DATE FILMED

Jihad Sleiman PROJECT MANAGER

DESIGN ENGINEER

AS-BUILT

LAMBERT COORDINATES

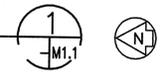
CONTRACTOR DATE STARTED

32848-27 -0

INSPECTOR DATE COMPLETED

FIRST FLOOR MECHANICAL DEMOLITION PLAN
1/4"=1'-0"

A3718BASE



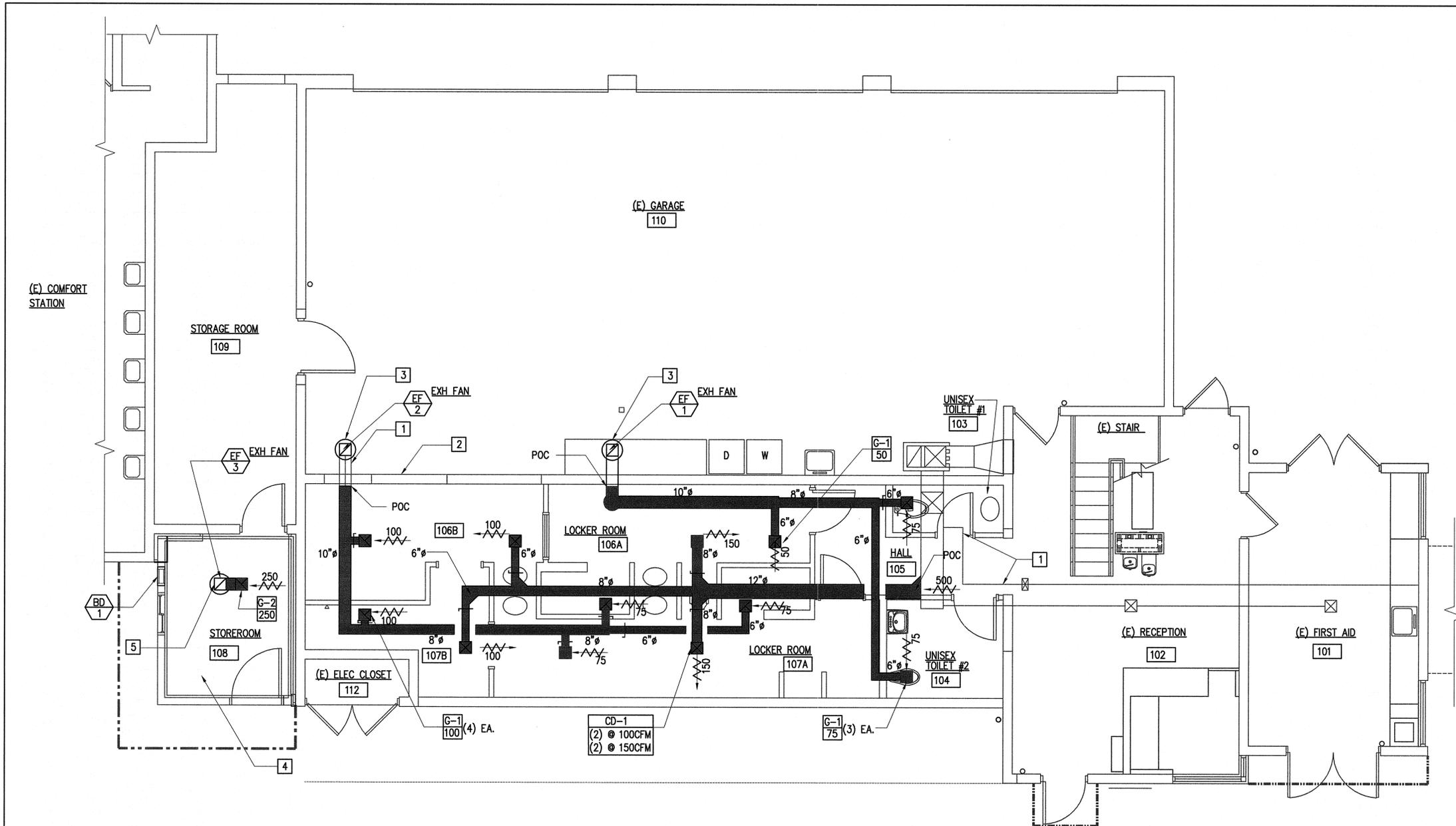
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SYM	DESCRIPTION	DATE



FIRST FLOOR MECHANICAL PLAN
1/4"=1'-0"

A371BASE
1
-M2.1
N

GENERAL NOTES

- A. SEE SHEET M0.1 FOR GENERAL NOTES
- B. REFER TO SHEET A6.1 FOR (N) CLG CONSTRUCTION

KEYED NOTES

- 1 (E) DUCTS TO REMAIN
- 2 (E) CMU WALL
- 3 CONTRACTOR SHALL REMOVE AND REPLACE THE (E) ROOF CURB TO ACCOMMODATE (N) EXHAUST FAN EQUIPMENT FOR EF-1 & EF-2. CLEAN AND PATCH (E) ROOFING MATERIAL W/ (N) ROOFING PLIES SET IN ASPHALT, TME. PROVIDE CANT STRIPS, BASE FLASHING, ETC. AT ROOF CURBS AS REQUIRED FOR A COMPLETE AND FULLY WATERTIGHT INSTALLATION. SEE DETAIL 1/M0.1, SIMILAR. MODIFY (E) DUCTWORK AS REQUIRED FOR CONNECTIONS TO (N) EXHAUST FAN - VERIFY.
- 4 (N) WOOD FRAMED ADDITION W/ PLYWOOD ROOF DECK & 1-1/2" THICK RIGID ROOF INSUL.
- 5 SEE DETAIL 1, SHEET M0.1 FOR (N) ROOF MOUNTED EXH. FAN NEW FIRE DAMPER. MODIFY (E) DUCTWORK AS REQ'D TO ACCOMMODATE NEW FIRE DAMPER.

LEGEND

- ☐ EXHAUST GRILLE
- ☒ SUPPLY AIR DIFFUSER
- EF- EXHAUST FAN - REFER TO SCHEDULE ON SHEET M0.1
- BD- BACKDRAFT DAMPER - KRUEGER 16x16 - SPRING LOADED W/ RUBBER TIPPED BLADES
- CD-1 CEILING DIFFUSER: KRUEGER W/ DAMPER
- G-1 CEILING INLET GRILLE: KRUEGER S480, 8 X 8
- G-2 CEILING INLET GRILLE: KRUEGER S480, 10 X 10

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

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PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO MISSION BEACH LIFEGUARD STATION
M2.1
FIRST FLOOR MECHANICAL PLAN

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
W.B.S. NO. S-00793

FOR CITY ENGINEER: *Alex Garcia* 2/1/12
DATE: 2/1/12
SECTION HEAD: ALEX GARCIA
PROJECT MANAGER: JIHAD SLEMAN

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL				

DESIGN ENGINEER: X
LAMBERT COORDINATES: X
CONTRACTOR: _____ DATE STARTED: _____
INSPECTOR: _____ DATE COMPLETED: _____
32848- 28 -D

PLUMBING GENERAL NOTES

- CONTRACTOR SHALL CAREFULLY REVIEW THESE PLANS AND SPECIFICATIONS PRIOR TO BID. CONTRACTOR SHALL ALSO REVIEW PLANS AND SPECIFICATIONS OF OTHER RELATED TRADES (INCLUDING CIVIL, STRUCTURAL, AND ELECTRICAL) PRIOR TO BID TO INSURE AN ACCURATE UNDERSTANDING OF EXACT SCOPE OF WORK. ANY ITEMS REQUIRING CLARIFICATION SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN SUFFICIENT TIME TO BE INCORPORATED INTO THE BID.
- CONTRACTOR SHALL VERIFY ALL EQUIPMENT MODEL NUMBERS, CAPACITIES, SIZES, VOLTAGES, AND ALL OTHER SCHEDULED INFORMATION WITH OTHER APPLICABLE TRADES AND WITH THE MANUFACTURER PRIOR TO INSTALLATION.
- CONTRACTOR SHALL VERIFY ALL LOCATIONS, SIZES, P.O.C.'S, INVERT ELEVATIONS, AND AVAILABILITY OF ALL EXISTING UTILITIES PRIOR TO INSTALLATION OF ANY MATERIAL OR EQUIPMENT.
- THESE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC, AND ARE NOT INTENDED TO INDICATE ALL DETAILS AND NECESSARY OFFSETS OF PIPING. THE CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT IN A MANNER AS TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM, AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. ALL INSTALLATIONS SHALL BE CONSISTENT WITH NORMALLY ACCEPTABLE INDUSTRY STANDARDS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES OR CONFLICTS THAT WOULD AFFECT THE SYSTEM PERFORMANCE OR INCUR ADDITIONAL COSTS. THIS NOTIFICATION SHALL BE SUBMITTED PRIOR TO INSTALLATION OF THE ITEMS CONCERNED.
- NEW AND/OR EXISTING EQUIPMENT INDICATED ON THIS DRAWING IS SHOWN IN APPROXIMATE POSITION(S). CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING EQUIPMENT LOCATIONS, P.O.C.'S AND STRUCTURAL MEMBERS PRIOR TO INSTALLATION. IN ALL CASES, ADEQUATE ACCESS (PER MANUFACTURER'S RECOMMENDATIONS AND CODE COMPLIANCE) FOR MAINTENANCE AND REPLACEMENT OF EQUIPMENT SHALL BE PROVIDED.
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- ALL PLUMBING EQUIPMENT, MATERIAL, AND ALL CONNECTIONS THERETO SHALL BE INSTALLED COMPLETE PER MANUFACTURER'S INSTRUCTIONS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL SYSTEM.
- SOIL, SEWER AND WASTE PIPING SHALL SLOPE AT 1/4" PER FOOT MINIMUM.
- ALL PLUMBING SOLDER SHALL BE LEAD FREE.
- IF THE CONTRACTORS' USE OF SUBSTITUTE MATERIALS, EQUIPMENT OR METHODS OF INSTALLATION REQUIRES ANY CHANGES IN OTHER TRADES' WORK FROM THAT SHOWN ON THE DRAWINGS, THE EXTRA COST OF THE OTHER TRADES' WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR INITIATING THE SUBSTITUTION.
- SUBMITTALS: APPROVAL OF THE SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM OBLIGATIONS TO FULLY COMPLY WITH ALL REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS OR APPLICABLE CODE REGULATIONS.
- ALL NATURAL GAS PIPING LOCATED EXPOSED ABOVE GRADE SHALL BE INSTALLED SO THAT THE INVERT ELEVATION OF SUCH PIPING SHALL BE KEPT AT LEAST 6" ABOVE GRADE OR STRUCTURE.
- PLUMBING PIPING SYSTEMS SHALL BE INSULATED PER BUILDING ENERGY EFFICIENCY STANDARDS (E.E.S.) SECTION 123.
- ALL INSULATING MATERIALS INSTALLED MUST BE CERTIFIED BY CALIFORNIA ENERGY COMMISSION TO MEET C.E.C. ENERGY EFFICIENCY STANDARDS (E.E.S.) SECTION 118, 123, AND 124.
- ALL HOSE BIBBS INSTALLED SHALL BE EQUIPPED WITH VACUUM BREAKERS.
- WATER CLOSETS SHALL CONSUME NO MORE THAN 1.6 GALLONS PER FLUSH. URINALS SHALL CONSUME NO MORE THAN 1 GALLON PER FLUSH (IN SAN DIEGO COUNTY, BOTH FIXTURES SHALL BE LISTED ON THE WATER AUTHORITY "LIST OF APPROVED LOW CONSUMPTION FIXTURES").
- LAVATORY FAUCETS IN ALL TOILET ROOMS SHALL BE THE SELF-CLOSING TYPE AND REMAIN OPEN FOR A MINIMUM OF 10 SECONDS.
- ALL SINK FAUCETS SHALL DISCHARGE A MAXIMUM OF 2.2 GPM.
- ALL VENT-THROUGH-ROOF PIPES SHALL TERMINATE NO LESS THAN 10'0" MINIMUM FROM ALL OUTSIDE AIR OPENINGS.

FINANCIALLY RESPONSIBLE PARTY FOR WATER & SEWER FEES:

JIHAD SLEIMAN
CITY OF SAN DIEGO
PUBLIC WORKS, ENGINEERING
AEP DIVISION

600 B STREET
SAN DIEGO, CA 92101
(619) 980-4136

PLUMBING FIXTURE SCHEDULE

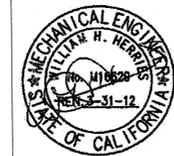
MARK	MIN. BRANCH SIZE				TRAP OR ARM	FIXTURE
	C.W.	H.W.	VENT	WASTE		
UL-1	3/4"	-	2"	2"	INTEGRAL	URINAL: AMERICAN STANDARD "WESTBROOK" #6501.010 URINAL, 3/4" TOP SPUD W/ WALL HANGERS, 1 GAL. PER FLUSH, SIPHON JET W/ SLOAN 186-1 TOP MOUNTED FLUSH VALVE.
WC-1	3/4"	-	2"	4"	INTEGRAL	WATER CLOSET: AMERICAN STANDARD "MEDERA" #2234.015 FLOOR MTD. ELONGATED, FLUSH VALVE, SIPHON JET W/ SLOAN ROYAL #111 1.6 GAL PER FLUSH AND OLSONITE SEAT #95, EXTRA IVORY WHITE OPEN FRONT SEAT LESS COVER, W/ CONCEALED CHECK HINGE.
WC-2	3/4"	-	2"	4"	INTEGRAL	HANDICAP WATER CLOSET: AMERICAN STANDARD MEDERA #2854.016 FOR HANDICAP USE. SIMILAR TO WC-1 BUT W/ FEATURES THAT MEET HANDICAP REQUIREMENTS.
L-1	1/2"	1/2"	1-1/2"	2"	1-1/2"	WALL MOUNTED LAVATORY: - AMERICAN STANDARD "LUCERNE" #0356.011. 20"x18" WALL HUNG, 4" CTRS, W/ SINGLE LEVER TRIM, SIMMONS METERING FAUCET, CHROME GRID DRAIN, P TRAP, FLEX SUPPLIES, ANGLE STOPS, AND ESCUTCHEONS, INSULATE WATER SUPPLIES AND WASTE PER HANDICAP STANDARDS.
DF-1	1/2"	-	1-1/2"	2"	1-1/4"	DRINKING FOUNTAIN: HAWS 1119.8, BARRIER FREE, DUAL HEIGHT, WALL HUNG, 18 GAUGE ELECTRIC WATER COOLER, 18 GAUGE TYPE 304 SS BRACKET, ALL WITH NO. 4 SATIN FINISH, LEAD-FREE BRASS BUBBLERS, WASTE STRAINERS, ADJUSTABLE SELF-REGULATING PUSH BUTTON VALVES VANDAL-RESISTANT BOTTOM PLATES, 1 1/4" O.D. WASTE ARMS, 1/2" I.P.S SCREWDRIVER STOPS, SPECIAL IN-WALL MOUNTING PLATE, ADA COMPLIANT
FD-1	-	-	1-1/2"	2"	2"	FLOOR DRAIN: ZURN Z-415-VP-8S WITH 8" TYPE S STRAINER 3" MINIMUM CAST IRON ENAMELED ADJUSTABLE CLAMPING COLLAR, NICKLE BRONZE SQUARE STRAINER THREADED COLLAR, BOTTOM OUTLET WITH TRAP PRIMER CONNECTION
SD-1	-	-	-	-	-	SHOWER DRAINS: ZURN Z-513 9" CAST IRON W/ SUSPENDED SEDIMENT BUCKET.
HB-1	3/4"	-	-	-	-	HOSE BIBB: ACORN 8121 ROUGH BRASS CONSTRUCTION HOSE FAUCET/VALVE WITH LOOSE KEY WHEEL HANDLE, REPLACABLE DISC, HOSE THREAD SPOUT, WITH ASSE 1011 BACKFLOW PREVENTER OUTLET IN 3/4" SIZE
S-1	1/2"	1/2"	1-1/2"	2"	1-1/2"	COUNTERTOP SINK: AMERICAN STANDARD "OVALYN" UNDERCOUNTER SINK - VITREOUS CHINA - #0495.221, SIMMONS METERING FAUCET, CHROME GRID DRAIN, P TRAP, FLEX SUPPLIES, ANGLE STOPS AND ESCUTCHEONS.
SHR-1	1/2"	1/2"	2"	2"	2"	SHOWER FITTINGS: CHICAGO #1762-15 HYDROPOISE W/ PRESSURE BALANCING SHOWER VALVE, LEVER HANDLE W/ INTEGRAL STOPS, ADJUSTABLE SPRAY SHOWER HEAD.
RD-1	-	-	2"	2"	2"	ROOF DRAIN: J.R. SMITH 1340 LOW PROFILE DOME 8-1/2" DIAMETER ADJUSTABLE CLAMPING COLLAR, NICKLE BRONZE SQUARE STRAINER THREADED COLLAR, BOTTOM OUTLET WITH TRAP PRIMER CONNECTION
ORD-1	-	-	-	3"	-	OVERFLOW ROOF DRAIN: WHERE REQUIRED - ZURN Z-100-89-EC 13" DIA. ROOF DRAIN DURA-COATED CAST-IRON BODY WITH COMBINATION MEMBRANE FLASHING CLAMP, GRAVEL GUARD CLAMPING COLLAR CAST IRON DOME.
WHA-1	-	-	-	-	-	WATER HAMMER ARRESTOR: JR SMITH #5010, 3/4"
AP-1	-	-	-	-	-	ACCESS PANEL: SMITH #4730 SQUARE FRAME, SECURED COVER, STAINLESS STEEL, FLUSH WALL.
TP-1	-	-	-	-	-	TRAP PRIMER: ZURN Z-P6000-TPO AQUAFLUSH EXPOSED TRAP PRIMER FOR WATER CLOSETS.
TP-2	-	-	-	-	-	TRAP PRIMER: ZURN Z-1021 TRAP PRIMER FOR LAVATORIES AND DRINKING FOUNTAINS.
P-1	-	-	-	-	-	HOT WATER CIRCULATING PUMP: GRUNDFOS #JPS-20-42, ONE SPEED 5GPM @ 5' HD. 1/64 HP, 115/1/60, STAINLESS STEEL, W/ MECHANICAL SEAL.

PLUMBING LEGEND

----- W	WASTE (ABOVE GROUND)		POC	POINT OF CONNECTION
----- W	WASTE (UNDER GROUND)		P&T	PRESSURE & TEMPERATURE RELIEF
----- V	VENT		A/C	ABOVE CEILING
----- DCW	DOMESTIC COLD WATER		VTR	VENT THROUGH ROOF
----- DHW	DOMESTIC HOT WATER		TP	TRAP PRIMER
	SHUT OFF VALVE (BALL TYPE)		U/G	UNDER GROUND
	UNION		U/F	UNDER FLOOR
	CLEAN OUT (FLR, WALL, GRDE OR P Ving)		FU	FIXTURE UNITS
			WHA	WATER HAMMER ARRESTOR

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SAN DIEGO, CA 92101
619.239.2151



IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.

SYM	DESCRIPTION	DATE

WATER PIPE SIZE TABLE

PIPE SIZE	GPM	VELOCITY (fps)	FLUSH TANK - FU	FLUSH VALVE - FU
1/2"	2.5	3.44	3	0
3/4"	8	5.30	10	1.75
1"	13	5.10	18	2.75
1-1/4"	22	5.22	34	6
1-1/2"	35	6.31	67	20

BUILDING WATER CALCULATIONS

TOTAL DEVELOPED LENGTH	85	FT
PRV (TO LAST FIXTURE) =	30	FT.
FITTINGS	5	FT.
VALVES	120	FT.
TOTAL LENGTH	120	FT.
PSI LOSS		
TAP	0.00	PSI
RISE	12 FT x 0.43 PSI/FT	5.16
FIXTURE	25.00	PSI
METER	0.00	PSI
TOTAL LOSS	30.16	PSI
REQUIRED WATER PRESS. AT PRV	38.00	PSI
LOSS	-30.16	PSI
DIFFERENCE	7.84	PSI

7.84 PSI DIFFERENCE X 100 = 6.55 MAXIMUM PRESS. DROP
120 FEET TOTAL LENGTH ALLOWABLE /100 FT. OF PIPE

PIPE SCHEDULE

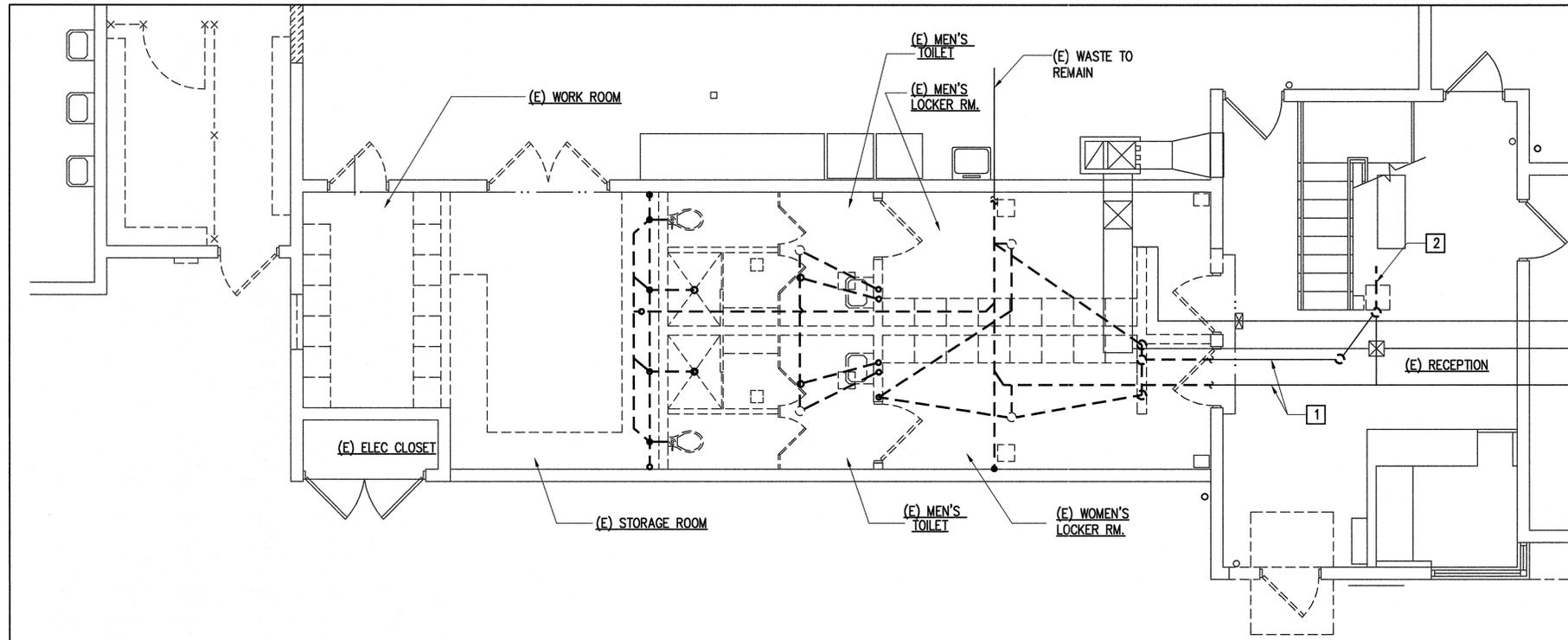
- AT 5' FROM BLDG
- AS APPROVED FOR NATURAL GAS
- WHERE ALLOWED BY CODE

WATER	INSIDE OUTSIDE	COPPER TYPE "M"	COPPER TYPE "L"	HUBLESS CI	REMARKS
SANITARY DRAINAGE	INSIDE OUTSIDE				
SANITARY VENT					

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

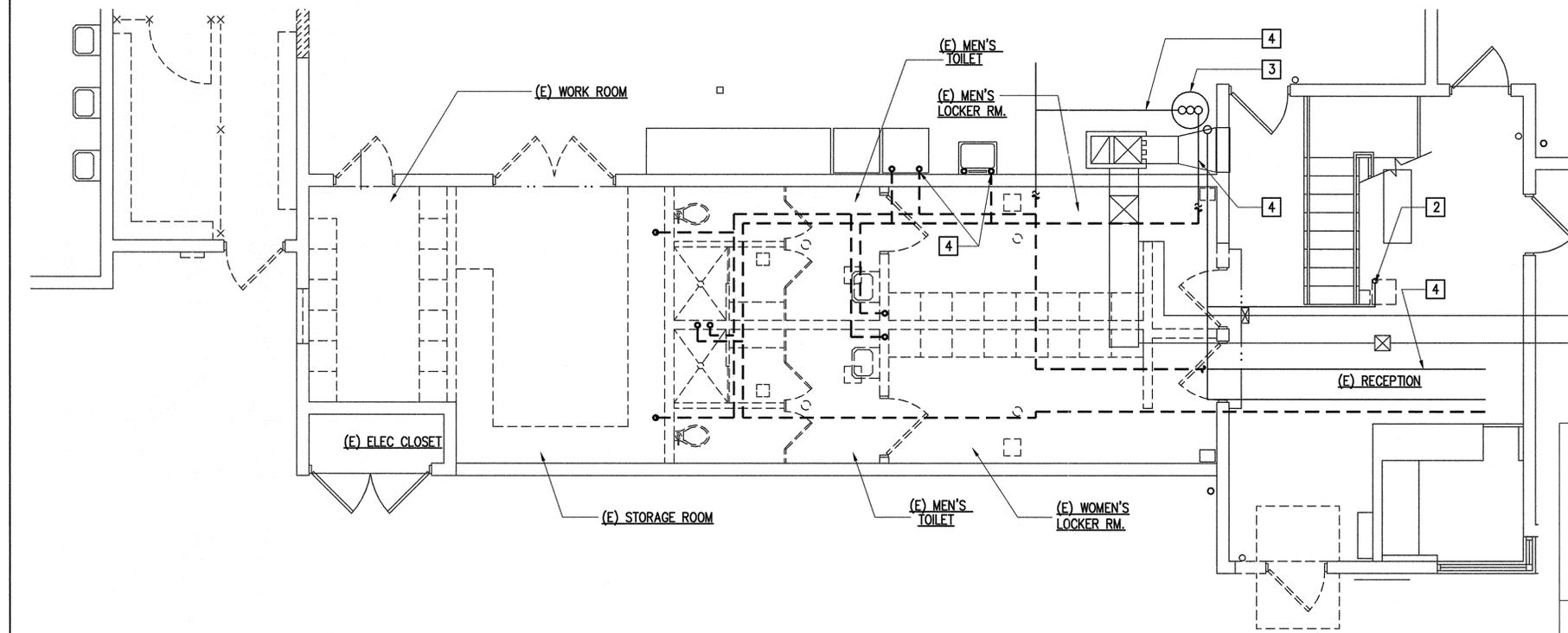
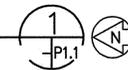
ALTERATIONS TO MISSION BEACH LIFEGUARD STATION		P0.1
PLUMBING NOTES, SYMBOLS & ABBREVIATION		
CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT		W.B.S. NO. S-00793
FOR CITY ENGINEER	DATE	SECTION HEAD
ALEX GARCIA	2/1/12	ALEX GARCIA
DESCRIPTION	BY	APPROVED
DATE	FILED	
ORIGINAL		
AS-BUILT		
CONTRACTOR	DATE STARTED	
INSPECTOR	DATE COMPLETED	
		32848-29 -D



FIRST FLOOR SANITARY WASTE PIPING DEMOLITION PLAN

1/4"=1'-0"

A371BASE



FIRST FLOOR WATER PIPING DEMOLITION PLAN

1/4"=1'-0"

A371BASE



GENERAL NOTES

- A. SEE SHEET P0.1 FOR GENERAL NOTES
- B. CONTRACTOR TO SNAKE THE (E) SANITARY WASTE DRAIN SYSTEM PRIOR AND AFTER DEMOLITION WORK.

KEYED NOTES

- 1 (E) UNDERFLOOR PIPING TO REMAIN
- 2 MODIFY (E) PIPING AS REQ'D TO CONNECT TO (N) DRINKING FOUNTAINS - REMOVE (E) FLOOR SINK AND REPLACE W/ NEW FLOOR DRAIN - EXTEND (E) PIPING TO NEW DRAINS FOR DRINKING FOUNTAIN. SAWCUT AND PATCH (E) CONC. FLOOR AT REQ'D, VERIFY
- 3 (E) WATER HEATER TO REMAIN
- 4 PORTIONS OF (E) WATER SUPPLY LINES TO REMAIN - VERIFY. EXTENT OF REMOVAL REQ'D TO CONNECT TO (N) PIPING

PLUMBING LEGEND

---	W	WASTE (ABOVE GROUND)
---	W	WASTE (UNDER GROUND)
---	V	VENT
---	DCW	DOMESTIC COLD WATER
---	DHW	DOMESTIC HOT WATER
⊗	SOV	SHUT OFF VALVE (BALL TYPE)
— — —	U	UNION
⊘	CO	CLEAN OUT (FLR, WALL, GRDE OR PING)
⊙	POC	POINT OF CONNECTION
⊗	P&T	PRESSURE & TEMPERATURE RELIEF
	A/C	ABOVE CEILING
	VTR	VENT THROUGH ROOF
	TP	TRAP PRIMER
	U/G	UNDER GROUND
	U/F	UNDER FLOOR
	FU	FIXTURE UNITS

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO MISSION BEACH LIFEGUARD STATION **P1.1**

PLUMBING DEMOLITION PLAN

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S. NO. S-00793

Alex Garcia 2/11/12
FOR CITY ENGINEER DATE

ALEX GARCIA
SECTION HEAD

DESCRIPTION BY APPROVED DATE FILMED
ORIGINAL

Jihad Sleman
PROJECT MANAGER

DESIGN ENGINEER

X
LAMBERT COORDINATES

AS-BUILT
CONTRACTOR DATE STARTED
INSPECTOR DATE COMPLETED

32848- 30 -D

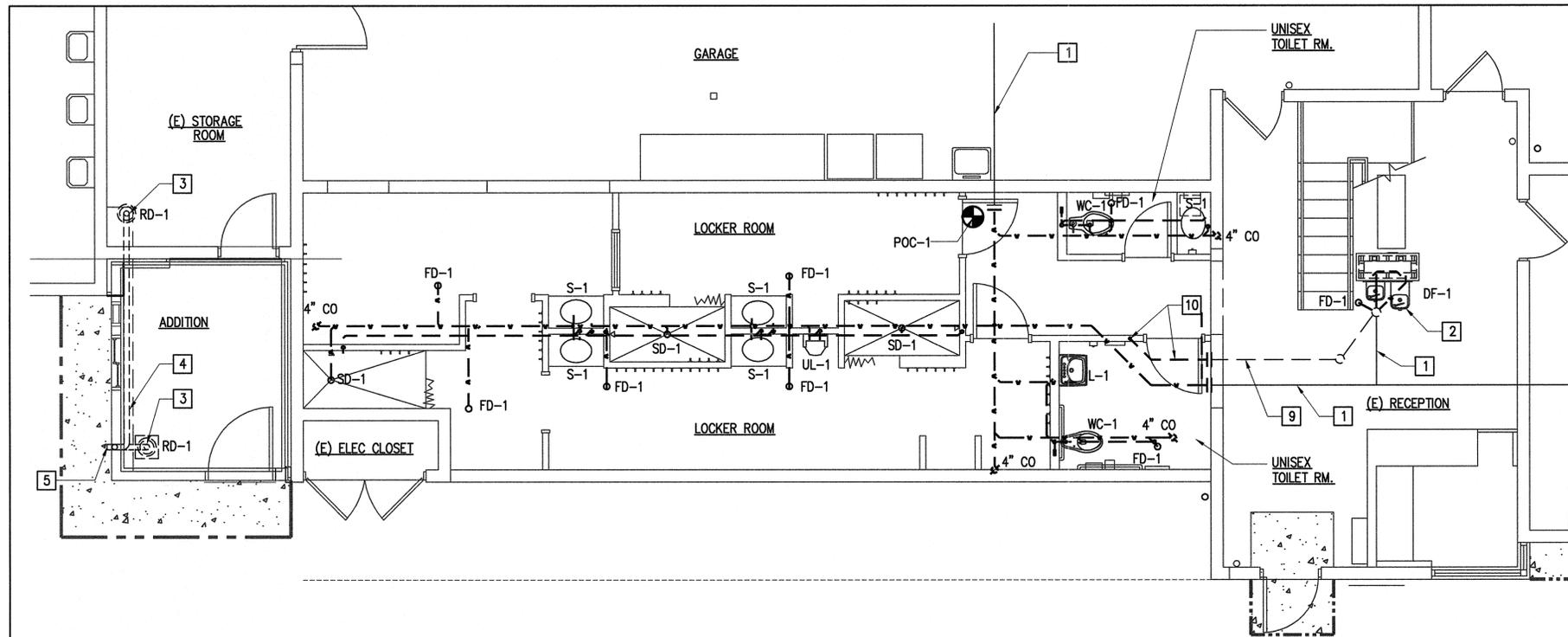
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IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.

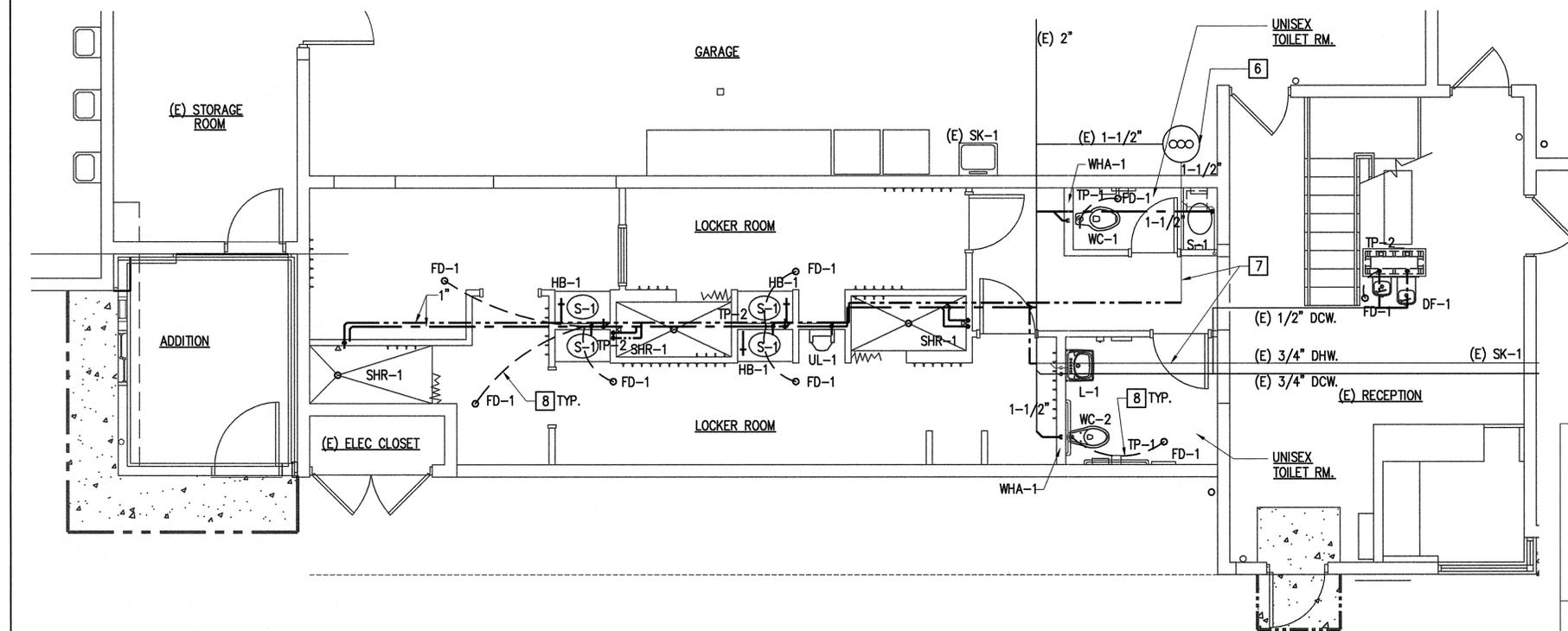
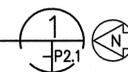
SYM	DESCRIPTION	DATE



FIRST FLOOR NEW SANITARY WASTE PIPING PLAN

1/4" = 1'-0"

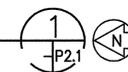
A371BASE



FIRST FLOOR NEW WATER PIPING PLAN

1/4" = 1'-0"

A371BASE



GENERAL NOTES

- A. SEE SHEET P0.1 FOR GENERAL NOTES
- B. PROVIDE 1/2" HOSE BIBB UNDER EACH SINK AND LAV.
- C. SEE SHEET P3.1 FOR WASTE & VENT RISER DIAGRAM
- D. TO THE GREATEST EXTENT POSSIBLE, REUSE/CONNECT TO (E) VENT-THRU-ROOF
- E. CONTRACTOR TO SNAKE EXISTING SEWER SYSTEM BEFORE AND AFTER CONSTRUCTION TO MAKE CERTAIN IT IS CLEAR.

KEYED NOTES

- 1 (E) UNDERGROUND WASTE LINE TO REMAIN
- 2 MODIFY (E) WASTE LINES TO ACCOMMODATE (N) DF. DRAINS - VERIFY
- 3 (N) 3" ROOF DRAIN
- 4 PROVIDE (N) 3" ROOF DRAIN DOWNSPOUT LINE TO DAYLIGHT OUTLET 12" ABOVE SLAB
- 5 PROVIDE DRAIN OUTLET AT EXT. WALL
- 6 (E) WATER HEATER TO REMAIN
- 7 PORTIONS OF (E) PIPING RUNS TO (E) FIXTURES TO REMAIN - VERIFY EXTENT OF (E) PIPING TO REMAIN
- 8 3/8" COPPER TUBING BELOW FLOOR FOR TRAP PRIMERS
- 9 (E) UNDERGROUND VENT LINE TO REMAIN
- 10 CONNECT NEW UNDERGROUND VENT LINE TO EXISTING AND ROUTE THRU NEW WALL. RECONNECT TO (E) VENT-THRU-ROOF.

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

PLANS FOR THE CONSTRUCTION OF

ALTERATIONS TO
MISSION BEACH LIFEGUARD STATION

P2.1

NEW PLUMBING PLANS

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT

W.B.S.
NO. S-00793

FOR CITY ENGINEER DATE 2/1/12

ALEX GARCIA
SECTION HEAD

DESCRIPTION BY APPROVED DATE FILMED

ORIGINAL PROJECT MANAGER

DESIGN ENGINEER

X
LAMBERT COORDINATES

AS-BUILT

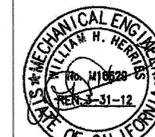
CONTRACTOR DATE STARTED

INSPECTOR DATE COMPLETED

32848- 31 -D

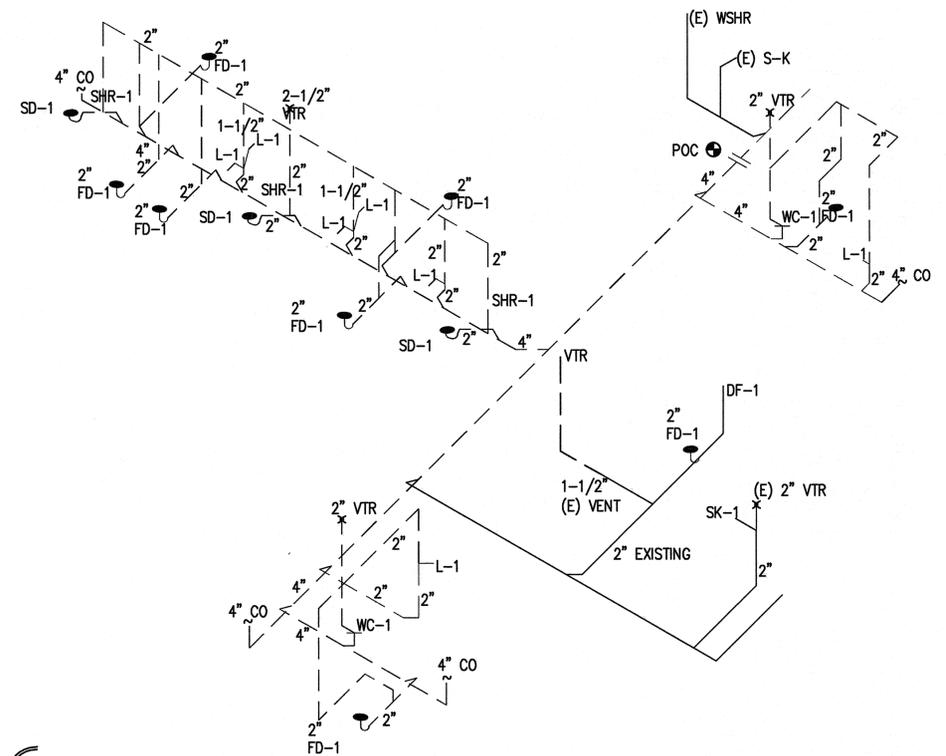
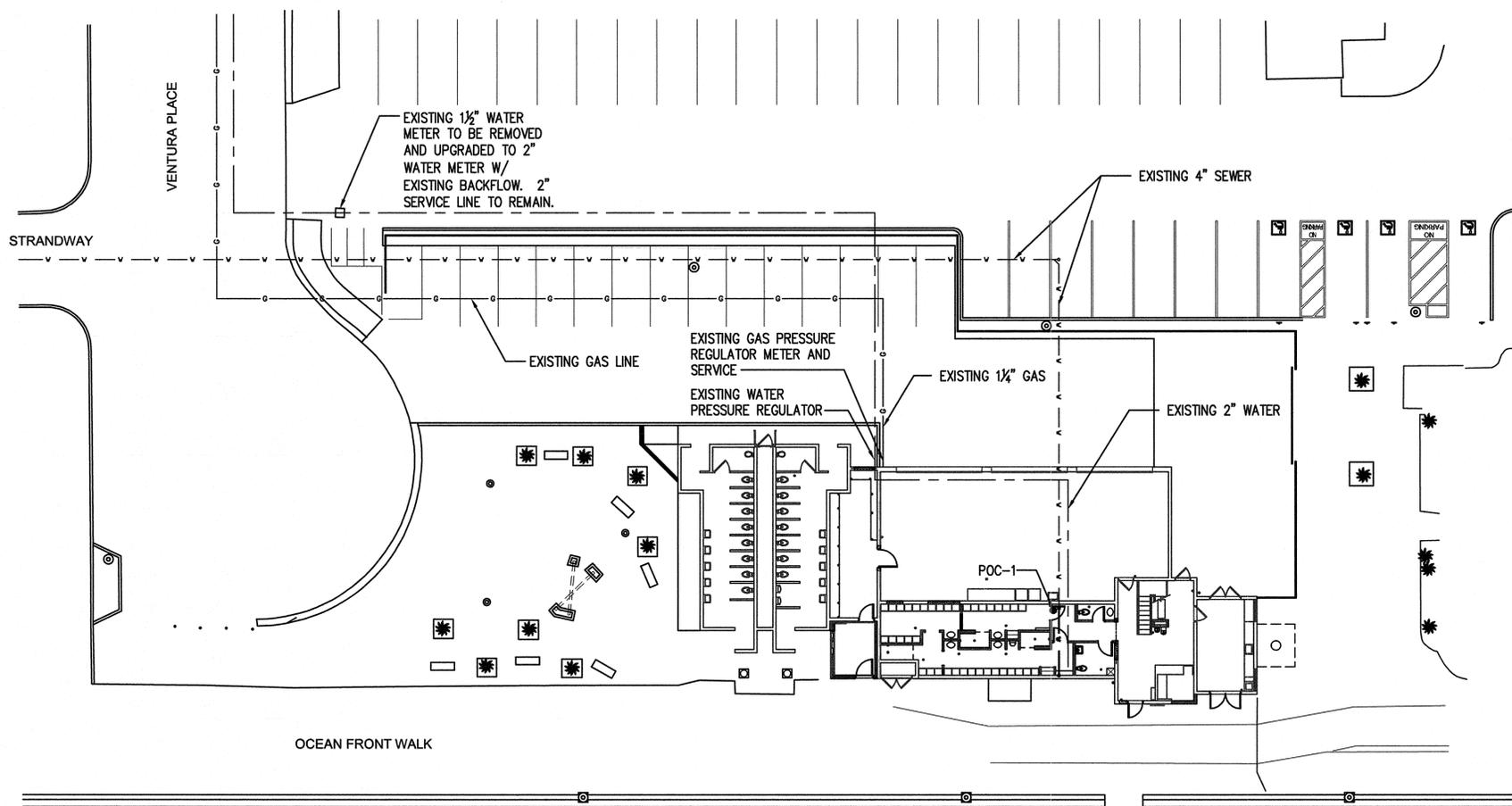
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619.239.2151



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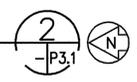
SYM	DESCRIPTION	DATE



W & V RISER DIAGRAM
NOT TO SCALE
MECH-P0371-WWRD
1
-P3.1

PLUMBING SITE PLAN
1/16"=1'-0"

A371BASE



SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

TECTONICS Architects Planners Engineers 501 W. BROADWAY, SUITE 210 SAN DIEGO, CA 92101 619.239.2151	IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.		PLANS FOR THE CONSTRUCTION OF ALTERATIONS TO MISSION BEACH LIFEGUARD STATION P3.1												
	<table border="1"> <thead> <tr> <th>SYM</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	SYM	DESCRIPTION	DATE										PLUMBING DETAILS & DIAGRAMS	
SYM	DESCRIPTION	DATE													
	CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT <i>M. Garcia</i> 2/1/12 FOR CITY ENGINEER DATE		ALEX GARCIA SECTION HEAD												
	ORIGINAL		JIHAD SLEIMAN PROJECT MANAGER												
AS-BUILT CONTRACTOR _____ DATE STARTED _____ INSPECTOR _____ DATE COMPLETED _____		DESIGN ENGINEER X LAMBERT COORDINATES		32848- 32 -D											

SYMBOL	DESCRIPTION
	DUPLEX CONVENIENCE OUTLET MOUNTED AT 18" TO BOTTOM ABOVE FINISHED FLOOR, U.O.N.
	VOICE DATA OUTLET WITH TRIM RING, 2 PAIR CAT-5 AND 3/4" C TO TELECOMM CLOSET
	TOGGLE TYPE FRACTIONAL HP MANUAL MOTOR STARTER WITH THERMAL OVERLOAD, DELETE OVERLOAD IF ONLY FOR DISCONNECT SERVICE.
	PANELBOARD (FLUSH)
	CONDUIT RUN CONCEALED IN WALL OR ON ROOF
	SINGLE GANG SWITCH, MOUNTED AT 42" AFF
	FIXTURE TYPE
	CIRCUIT NO.
	SWITCHING
	WALL MOUNTED LIGHTING FIXTURE
	FLUORESCENT LIGHTING FIXTURE.
	CEILING MOUNTED SPEAKER
	BRANCH CIRCUIT FEEDER
	HOMERUN QUANTITY OF ARROWS DENOTE NUMBER OF CONDUITS.
	CROSSMARKS INDICATE QUANTITY OF #12 AWG + GND. CONDUCTOR IN 3/4" CONDUIT UNLESS NOTED OTHERWISE. RUNS WITHOUT DESIGNATION CONTAIN 2 #12 AWG AND 1 #12 GND CONDUCTORS.
	PSA5-2,3 BRANCH CIRCUIT NUMBERS
	HOMERUN PANEL DESIGNATION
	FUSIBLE DISCONNECT SWITCH, FUSE PER MANUFACTURER REQUIREMENTS, RATING AS INDICATED
	JUNCTION BOX
	CEILING MOUNTED MOTION SENSOR

1 SCALE NONE SYMBOL LEGEND

ABBR.	DESCRIPTION
A	AMPERES
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
CX	CONNECT TO EXISTING CIRCUIT
EWC	ELECTRIC WATER COOLER
E	EXISTING
GFI	GROUND FAULT INTERRUPTER
MTD	MOUNTED
PNL	PANEL
TYP	TYPICAL

2 SCALE NONE ABBREVIATIONS

TYPE	SYMBOL	DESCRIPTION	LAMPS	MOUNTING	MFG. & CATALOG NO.	WATTS VOLTS
A		ROUGH SERVICE FLUORESCENT WITH IMPACT RESISTANT FIBERGLASS REINFORCED POLYESTER WITH COLD ROLLED STEEL ENCLOSED AND ACRYLIC LENSE	T8 32 W 3500K	CEILING	LITHONIA VRI 1 32 GEB OR EQUAL BY: COLUMBIA METALUX	32W 120V
B		6" LENSED DOWNLIGHT WITH CLEAR ALZAK REFLECTOR, ELECTRONIC BALLAST, WHITE TRIM WET LOCATION LISTED	(1) 26WTRT	CEILING	LITHONIA LGRV-26TR19RNDOL GSKT OR EQUAL BY: COLUMBIA METALUX	27W 120V
C		3 FT WALL MOUNTED EXTRUDE ALUMINUM HOUSING UP/DOWN DISTRIBUTION	(1)30T8 30 WATTS 3500 K	WALL	LITHONIA W130A120GEB OR EQUAL BY: COLUMBIA METALUX	30W 120V
D		WALL MOUNTED FLUORESCENT RUGGED CORROSION RESISTANT DIE CAST HOUSING	(1) 26W	WALL	LITHONIA TWRI 126TRT120FE LP1 OR EQUAL BY: COLUMBIA METALUX	26W 120V

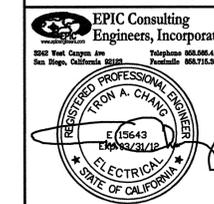
3 SCALE NONE LIGHTING FIXTURE SCHEDULE

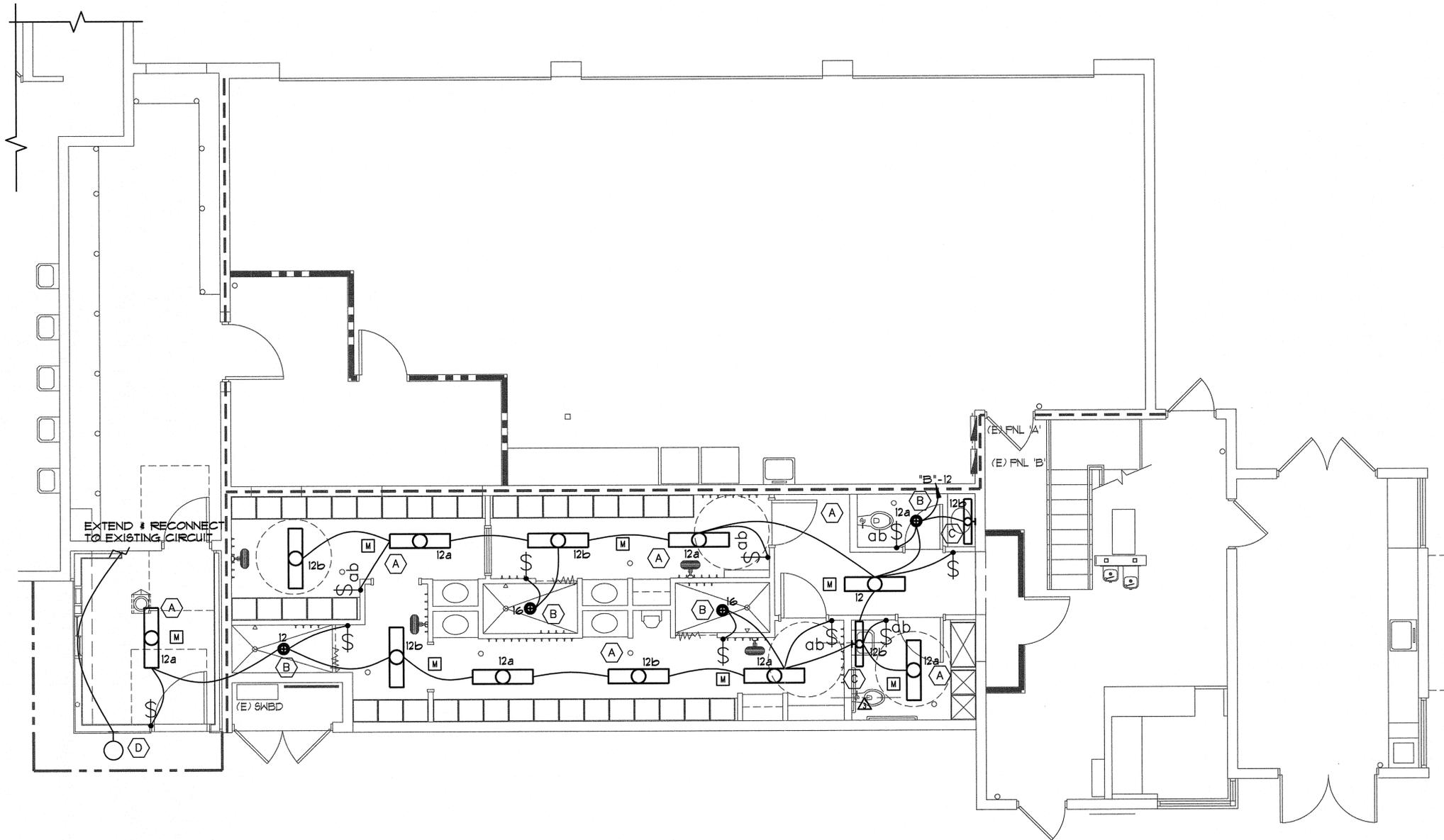
NO.	TITLE
E0.1	ABBREVIATION, SYMBOL, FIXTURE SCHEDULE
E1.1	FIRST FLOOR ELECTRICAL DEMOLITION PLAN
E2.1	FIRST FLOOR LIGHTING PLAN
E2.2	FIRST FLOOR POWER PLAN
E3.1	PANEL SCHEDULES
E4.1	T24 CALCULATION
E4.2	T24 CALCULATION

4 SCALE NONE SHEET INDEX

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

TECTONICS Architects Planners Engineers 501 W. BROADWAY, SUITE 210 SAN DIEGO, CA 92101 619.596.5191	IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.	PLANS FOR THE CONSTRUCTION OF	
		ALTERATIONS TO MISSION BEACH LIFEGUARD STATION	
		ABBREVIATION, SYMBOL, SCHEDULE	
		CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT	
		W.B.S. NO. S-00793	
		FOR CITY ENGINEER: <i>Mal Lopez</i> 2/11/12	
		ALEX GARCIA SECTION HEAD	
		SHAD STEWART PROJECT MANAGER	
		DESIGN ENGINEER	
		LAMBERT COORDINATES	
		CONTRACTOR: _____ DATE STARTED: _____ INSPECTOR: _____ DATE COMPLETED: _____	
		32848-33 -D	





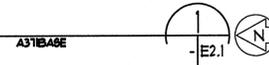
KEYED NOTES

- A. REFER TO MECHANICAL DRAWING FOR MECHANICAL CHARACTERISTIC (HORSE POWER, EQUIPMENT, LOCATION ETC.) OF MECHANICAL EQUIPMENT U.O.N.
- B. ALL CIRCUIT SHOWN SHALL BE CONNECTED TO PANEL 'B' U.O.N.
- C. RENOVATED SPACE IS UNDER 50% OF THE BUILDING. T24 DOCUMENTS ARE REQUIRED.

KEYED NOTES

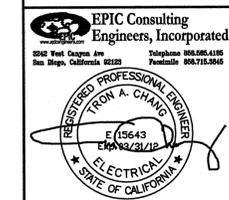
- ① PROVIDE CONNECTION TO MECHANICAL EQUIPMENT PER MANUFACTURER REQUIREMENTS.
- ② EXTEND AND RECONNECT TO EXISTING EXTERIOR LIGHT CIRCUIT. FIELD VERIFY.

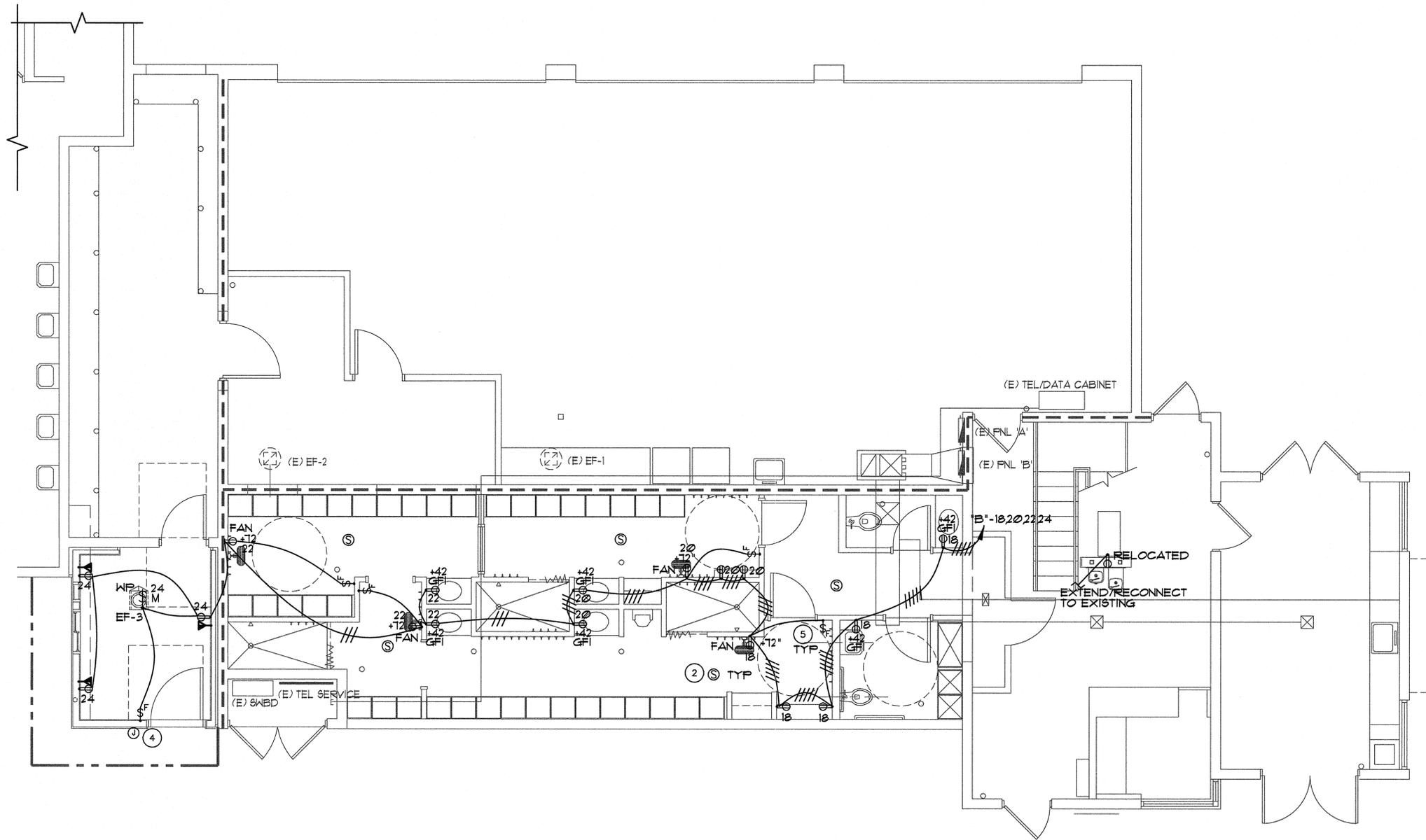
FIRST FLOOR LIGHTING PLAN
1/4" = 1'-0"



SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

TECTONICS Architects Planners Engineers 801 W. BROADWAY, SUITE 210 SAN DIEGO, CA 92101 619.596.5191	IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.		PLANS FOR THE CONSTRUCTION OF	
	SYM	DESCRIPTION	DATE	ALTERATIONS TO MISSION BEACH LIFEGUARD STATION
				E2.1
				FIRST FLOOR LIGHTING PLAN
				CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT
				W.B.S. NO. S-00793
FOR CITY ENGINEER: <i>[Signature]</i> 2/1/12 DATE: 2/1/12				ALEX GARCIA SECTION HEAD
DESCRIPTION: ORIGINAL BY: _____ APPROVED: _____ DATE: _____ FILMED: _____				JIHAD SLEMAN PROJECT MANAGER
				DESIGN ENGINEER
				LAMBERT COORDINATES
AS-BUILT CONTRACTOR INSPECTOR: _____ DATE STARTED: _____ DATE COMPLETED: _____				32848- 35 -0





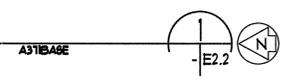
KEYED NOTES

- A. REFER TO MECHANICAL DRAWING FOR MECHANICAL CHARACTERISTIC (HORSE POWER, EQUIPMENT, LOCATION ETC.) OF MECHANICAL EQUIPMENT U.O.N.
- B. ALL CIRCUIT SHOWN SHALL BE CONNECTED TO PANEL 'B' U.O.N.

KEYED NOTES

- 1 PROVIDE CONNECTION TO MECHANICAL EQUIPMENT PER MANUFACTURER REQUIREMENTS.
- 2 PROVIDE CEILING MOUNTED SPEAKER MANUFACTURER 'BOGEN' MODEL 886T12BFG&MBR AND ROUTE CABLE BACK TO AUDIO AMPLIFIER. FIELD VERIFY FOR EXACT REQUIREMENT.
- 3 REROUTE AND RECONNECT EXISTING 3/2" DATA CONDUIT AND CABLE TO CLEAR ABOVE CEILING AND CLEAR NEW WALL AS REQUIRED. FIELD VERIFY.
- 4 KEYPAD ROUGH-IN. PROVIDE AND EXTEND 1" INTO ACCESSIBLE CEILING SPACE FOR FUTURE WIRING.
- 5 WALL MOUNTED FAN SWITCH MANUFACTURER INTERMATIC FF SERIES.

FIRST FLOOR POWER PLAN
1/4"=1'-0"



SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

<p>TECTONICS Architects Planners Engineers</p> <p>501 W. BROADWAY, SUITE 210 SAN DIEGO, CA 92101 619.239.2151</p>	<p>IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.</p>		<p>PLANS FOR THE CONSTRUCTION OF</p>	
	<p>SYM</p>	<p>DESCRIPTION</p>	<p>DATE</p>	<p>ALTERATIONS TO MISSION BEACH LIFEGUARD STATION</p>
<p>FIRST FLOOR POWER PLAN</p>			<p>CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT</p>	
<p>FOR CITY ENGINEER</p>			<p>DATE</p>	<p>W.B.S. NO. S-00793</p>
<p>DESCRIPTION</p>		<p>BY</p>	<p>APPROVED</p>	<p>DATE</p>
<p>ORIGINAL</p>				<p>FILMED</p>
<p>AS-BUILT</p>				<p>DATE STARTED</p>
<p>CONTRACTOR</p>				<p>DATE COMPLETED</p>
<p>INSPECTOR</p>				<p>32848-36 -D</p>

EPIC Consulting Engineers, Incorporated

3242 West Canyon Ave
San Diego, California 92108
Telephone 606.696.4185
Facsimile 606.715.9545

REGISTERED PROFESSIONAL ENGINEER
TRON A. CHANG
E 15643
EXPIRES 3/31/12
ELECTRICAL
STATE OF CALIFORNIA

ALEX GARCIA
SECTION HEAD

JIHAD SLEIMAN
PROJECT MANAGER

DESIGN ENGINEER

X
LAMBERT COORDINATES

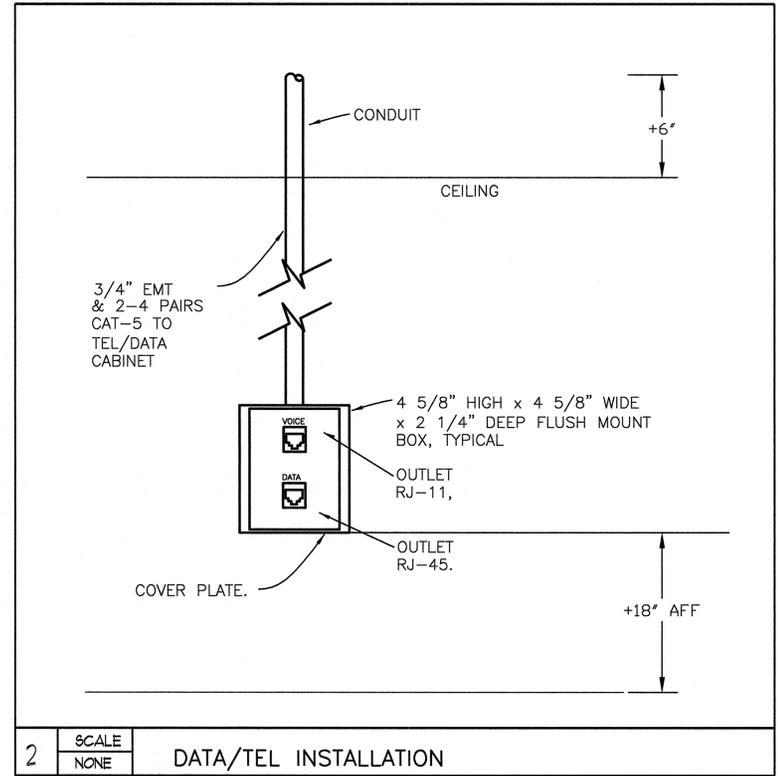
VOLT : 208Y/120V 3 PHASE, 4 WIRE MAIN : LUGS ONLY BUS : 225 AMP EXISTING		PANEL: B NEMA 1 ENCLOSURE 10 KAIC RATING SURFACE MOUNTED LOCATION:										CODE: T - VIA TIME CLOCK P - VIA PHOTOCELL LC - VIA LIGHTING CONTROLLER	
DESCRIPTION	LOAD	WIRE	CIRCUIT	BREAKER	VA PER PHASE			BREAKER	WIRE	CIRCUIT	LOAD	DESCRIPTION	
					A	B	C						
EXIST UPSTAIRS OFFICE	L 680	1	20	1	1087			1	20	2	407	EXIST TOILET	
EXIST KLAXON	1000	3	20	1		1540		1	20	4	540	EXIST RECEPTION	
EXIST COKE MACHINE	1000	5	20	1			1890	1	20	6	890	EXIST GARAGE	
EXIST OUTDOOR LGT	L 980	7	20	1	1870			1	20	8	890	EXIST GARAGE	
EXIST EH-1	M 900	9	30	2		1500		1	20	10	600	EXIST FURNACE	
EXIST PUBLIC RESTROOM	R 580	13	20	1	1580			1	20	14	1000	EXIST HEATER	
EXIST TIME CLOCK	300	15	20	1		1235		1	20	16	935	EXIST TELEPHONE EQUIPMENT	
		17						1	20	18	900	NEW RECEPTACLE LOCKER ROOM	
		19				900		1	20	20	900	NEW RECEPTACLE LOCKER ROOM	
		21				720		1	20	22	720	NEW RECEPTACLE LOCKER ROOM	
		23					1040	1	20	24	1040	EF-3	
		25				0				26			
		27				0				28			
		29					0			30			
		31				0				32			
		33				0				34			
		35				0				36			
		37				0				38			
		39				0				40			
		41				0				42			
THROUGH FEED OR DOUBLE LUG TOTAL VA PER PHASE					0	0	0	PANEL:					
TOTALS					5437	4995	5665	TOTAL VA PER PHASE					
PHASE IMBALANCE		LOAD TYPE:		DEMAND		CONNECTED							
TOTAL CONNECTED KVA	16	L - LIGHTING OR LCL	5978	VA	4782	VA							
TOTAL DEMAND KVA	17	R - RECEPTACLE	3640	VA	3640	VA							
TOTAL CONNECTED AMPS	45	M - LARGEST MOTOR	2840	VA	2840	VA							
25% OF LARGEST MOTOR AMPS	2	K - KITCHEN	0	VA	0	VA							
TOTAL DEMAND AMPS	50	O - OTHER	4835	VA	4835	VA							

KEYED NOTES

- 1 PROVIDE CIRCUIT BREAKER, MATCH EXISTING MANUFACTURER AND REQUIREMENTS.

GENERAL NOTES

- A. PROVIDE HANDLE TIES, TO "OFF" THE MULTIWIRED BRANCH CIRCUIT BREAKER PER 210.4(B)



2 SCALE NONE DATA/TEL INSTALLATION

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

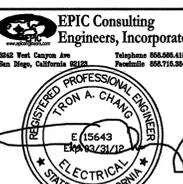
TECTONICS Architects Planners Engineers 501 W. BROADWAY, SUITE 210 SAN DIEGO, CA 92101 619.239.2191	IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.	PLANS FOR THE CONSTRUCTION OF												
	<table border="1"> <thead> <tr> <th>SYM</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	SYM	DESCRIPTION	DATE										ALTERATIONS TO MISSION BEACH LIFEGUARD STATION E3.1
SYM	DESCRIPTION	DATE												
EPIC Consulting Engineers, Incorporated 3040 West Canyon Ave San Diego, California 92108 Telephone: 602.506.4100 Facsimile: 602.714.3945	CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT Alex Garcia 2/1/12 FOR CITY ENGINEER DATE	W.B.S. NO. S-00793 ALEX GARCIA SECTION HEAD JINRO SEEMAN PROJECT MANAGER DESIGN ENGINEER LAMBERT COORDINATES												
REGISTERED PROFESSIONAL ENGINEER TRON A. CHANG E 15643 EXPIRES 3/31/12 ELECTRICAL STATE OF CALIFORNIA	AS-BUILT CONTRACTOR _____ DATE STARTED _____ INSPECTOR _____ DATE COMPLETED _____	32848-37 -D												

CERTIFICATE OF ACCEPTANCE LTG-2A	
Lighting Control Acceptance Document (Page 1 of 3)	
Project Name/Address: ALTERATION TO MISSION BEACH LIFEGUARD STATION	
System Name or Identification/Tag: _____	System Location or Area Served: _____
Enforcement Agency: _____	Permit Number: _____
Note: <i>Submit one Certificate of Acceptance for each system that must demonstrate compliance.</i>	
Enforcement Agency Use: Checked by/Date _____	
FIELD TECHNICIAN'S DECLARATION STATEMENT	
<ul style="list-style-type: none"> I certify under penalty of perjury, under the laws of the State of California, the information provided on this form is true and correct. I am the person who performed the acceptance requirements verification reported on this Certificate of Acceptance (Field Technician). I certify that the construction/installation identified on this form complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7. I have confirmed that the Installation Certificate(s) for the construction/installation identified on this form has been completed and is posted or made available with the building permit(s) issued for the building. 	
Company Name: _____	Field Technician's Signature: _____
Field Technician's Name: _____	Date Signed: _____
	Position With Company (Title): _____
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
<ul style="list-style-type: none"> I certify under penalty of perjury, under the laws of the State of California, that I am the Field Technician, or the Field Technician is acting on my behalf as my employee or my agent and I have reviewed the information provided on this form. I am a licensed contractor, architect, or engineer, who is eligible under Division 3 of the Business and Professions Code, in the applicable classification, to take responsibility for the scope of work specified on this document and attest to the declarations in this statement (responsible person). I certify that the information provided on this form substantiates that the construction/installation identified on this form complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7. I have confirmed that the Installation Certificate(s) for the construction/installation identified on this form has been completed and is posted or made available with the building permit(s) issued for the building. I will ensure that a completed, signed copy of this Certificate of Acceptance shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a signed copy of this Certificate of Acceptance is required to be included with the documentation the builder provides to the building owner at occupancy. 	
Company Name: _____	Phone: _____
Responsible Person's Name: _____	Responsible Person's Signature: _____
License: _____	Date Signed: _____
	Position With Company (Title): _____
Occupant Sensor, Manual Daylighting Control, and Automatic Time Switch Control	
Intent: _____ Lights are turned off when not needed per Section 119(d) & 131(d).	
Construction Inspection	
1	Instrumentation to perform test includes, but not limited to:
a.	Hand-held amperage and voltage meter
b.	Power meter
continued on next page	
2008 Nonresidential Acceptance Forms August 2009	

CERTIFICATE OF ACCEPTANCE LTG-2A	
Lighting Control Acceptance Document (Page 2 of 3)	
Project Name/Address: ALTERATION TO MISSION BEACH LIFEGUARD STATION	
System Name or Identification/Tag: _____	System Location or Area Served: _____
2. Occupancy Sensor Construction Inspection	
<input checked="" type="checkbox"/>	Occupancy sensor has been located to minimize false signals
<input type="checkbox"/>	Light meter
<input type="checkbox"/>	Ultrasonic occupancy sensors do not emit audible sound (119a) 5 feet from source
3. Manual Daylighting Controls Construction Inspection	
<input type="checkbox"/>	If dimming ballasts are specified for light fixtures within the daylight area, make sure they meet all the Standards requirements, including "reduced flicker operation" for manual dimming control systems
4. Automatic Time Switch Controls Construction Inspection	
a.	Automatic time switch control is programmed for (check all):
<input type="checkbox"/>	Weekdays
<input type="checkbox"/>	Weekend
<input type="checkbox"/>	Holidays
b.	Document for the owner automatic time switch programming (check all):
<input type="checkbox"/>	Weekday settings
<input type="checkbox"/>	Weekend settings
<input type="checkbox"/>	Holiday settings
<input type="checkbox"/>	Set-up settings
<input type="checkbox"/>	Preference program setting
<input type="checkbox"/>	Verify the correct time and date is properly set in the time switch
<input type="checkbox"/>	Verify the battery is installed and energized
<input type="checkbox"/>	Override time limit is no more than 2 hours
<input checked="" type="checkbox"/>	Occupant Sensors and Automatic Time Switch Controls have been certified to the Energy Commission in accordance with the applicable provision in Section 119 of the Standards, and model numbers for all such controls are listed on the Commission database as Certified Appliance and Control Devices
A. Select Acceptance Test (Indicate lighting control systems Names/Designations by the applicable tests below)	
<input checked="" type="checkbox"/>	1. Occupancy Sensor
<input type="checkbox"/>	2. Manual Daylighting Controls
<input type="checkbox"/>	3. Automatic Time Switch Controls
B. Equipment Testing Requirements	
Check and verify those items applicable to selected system:	
Occupancy Sensor - Step 1: Simulate an unoccupied condition	
a.	Lights controlled by occupancy sensors turn off within a maximum of 30 minutes from start of an unoccupied condition per Standard Section 119(d)
b.	The occupancy sensor does not trigger a false "on" from movement in an area adjacent to the controlled space or from HVAC operation
c.	Signal sensitivity is adequate to achieve desired control
Occupant Sensor - Step 2: Simulate an occupied condition	
a.	Status indicator or annunciator operates correctly
b.	Lights controlled by occupancy sensors turn on when immediately upon an occupied condition OR (this requirement is mutually exclusive with Step 2.c.)
c.	Sensor indicates space is "occupied" and lights turn on manually
continued on next page	
2008 Nonresidential Acceptance Forms August 2009	

CERTIFICATE OF ACCEPTANCE LTG-2A				
Lighting Control Acceptance Document (Page 3 of 3)				
Project Name/Address: ALTERATION TO MISSION BEACH LIFEGUARD STATION				
System Name or Identification/Tag: _____	System Location or Area Served: _____			
Occupant Sensor - Step 3: System returned to initial operating conditions				
	Y/N	Y/N	Y/N	
Occupant Sensor - Step 4 - Sensor is also a multi-Level Occupant Sensor used to qualify for a Power Adjustment Factor in Section 146(a)2D of the Standards. If yes, then 'a,' 'b,' and 'c' must also be yes.				
	Y/N	Y/N	Y/N	
a.	The first stage activates between 30 to 70% of the lighting either manually or automatically.	Y/N	Y/N	Y/N
b.	A reasonably uniform level of illuminance is achieved by dimming of all lamps or luminaires, or by switching alternate lamps in luminaires, alternate luminaires, or alternate rows of luminaires.	Y/N	Y/N	Y/N
c.	After the first stage occurs, manual switches have been provided to activate the alternate set of lights, activate 100% of the lighting power, and manually deactivate all of the lights.	Y/N	Y/N	Y/N
Manual Daylighting Controls - Step 1: Manual switching control				
a.	At least 50% of lighting power in daylight areas is separately controlled from other lights	Y/N	Y/N	Y/N
b.	The amount of light delivered to the space is uniformly reduced	Y/N	Y/N	Y/N
Manual Daylighting Controls - Step 2: System returned to initial operating conditions				
	Y/N	Y/N	Y/N	
Automatic Time Switch Controls - Step 1: Simulate occupied condition				
a.	All lights can be turned on and off by their respective area control switch	Y/N	Y/N	Y/N
b.	Verify the switch only operates lighting in the ceiling-height partitioned area in which the switch is located	Y/N	Y/N	Y/N
Automatic Time Switch Controls - Step 2: Simulate unoccupied condition				
a.	All non-exempt lighting turn off per Section 131(d)1	Y/N	Y/N	Y/N
b.	Manual override switch allows only the lights in the selected ceiling height partitioned space where the override switch is located, to turn on or remain on until the next scheduled shut off occurs	Y/N	Y/N	Y/N
c.	All non-exempt lighting turns off	Y/N	Y/N	Y/N
Automatic Time Switch Controls - Step 3: System returned to initial operating conditions				
	Y/N	Y/N	Y/N	
Note: <i>Shaded areas do not apply for particular test procedure</i>				
C. PASS/ FAIL Evaluation (check one):				
<input type="checkbox"/>	PASS: All applicable Construction Inspection responses are complete and all applicable Equipment Testing Requirements responses are positive (Y - yes)			
<input type="checkbox"/>	FAIL: Any applicable Construction Inspection responses are incomplete OR there is one or more negative (N - no) responses in any applicable Equipment Testing Requirements section. Provide explanation below. Use and attach additional pages if necessary.			
2008 Nonresidential Acceptance Forms August 2009				

SPECIFICATION NO. 5651
CITY CONTRACT, W.B.S. NO. S-00793

 <p>501 W. BROADWAY, SUITE 210 SAN DIEGO, CA 92101 619.239.2101</p>	IF SHEET SIZE IS LESS THAN 22" X 34", IT IS A REDUCED PRINT - SCALE ACCORDINGLY.	PLANS FOR THE CONSTRUCTION OF ALTERATIONS TO MISSION BEACH LIFEGUARD STATION		E4.2
		TITLE 24 CALCULATIONS		
 <p>2542 York Canyon Ave San Diego, California 92108 Telephone 602.555.4185 Facsimile 602.715.2645</p>	CITY OF SAN DIEGO, CALIFORNIA ENGINEERING DEPARTMENT	W.B.S. NO. S-00793	ALEX GARCIA SECTION HEAD	
	FOR CITY ENGINEER: <i>Med Lopez</i> 2/1/12	DATE: 2/1/12	PROJECT MANAGER: JIHAD SLEIMAN	
ORIGINAL	BY: _____	APPROVED: _____	DATE: _____	FILMED: _____
AS-BUILT		CONTRACTOR: _____ DATE STARTED: _____		
INSPECTOR: _____ DATE COMPLETED: _____		DESIGN ENGINEER: _____		
		LAMBERT COORDINATES: _____		
		32848-39 -D		