SPECIFICATIONS
AND
CONTRACT DOCUMENTS
FOR

CITY OF LA VERNE, FIRE STATION NO. 1 GENDER COMPLIANCE IMPROVEMENT PROJECT

CITY OF LA VERNE
3660 "D" STREET
LA VERNE, CA 91750
(909) 596-8741

TIM HEPBURN, MAYOR
MESHAL KASHIFLAGHITA, MAYOR PRO TEM
WENDY LAU, COUNCIL MEMBER
RICK CROSBY, COUNCIL MEMBER
STEVE JOHNSON, COUNCIL MEMBER
KEN DOMER, CITY MANAGER
DANNY WU, DIRECTOR OF PUBLIC WORKS

Sealed bids to be received only by submitting electronically at https://pbsystem.planetbids.com/portal/45040/portal-home for the CITY OF LA VERNE, FIRE STATION NO. 1 GENDER COMPLIANCE IMPROVEMENT PROJECT **no later than Tuesday, *August 26, 2025* at 10:00am.**

PROPOSAL FORM

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CITY OF LA VERNE

NOTICE INVITING BIDS

Notice is hereby given sealed bids to be received only by submitting electronically at https://pbsystem.planetbids.com/portal/45040/portal-home for CITY OF LA VERNE, FIRE STATION NO. 1 GENDER COMPLIANCE IMPROVEMENT PROJECT **no later than Tuesday, August 26, 2025 at 10:00am, at which time or thereafter said bids will be electronically opened and available online. Bids received after this time will not be accepted for construction of:**

CITY OF LA VERNE, FIRE STATION NO. 1 GENDER COMPLAINCE IMPROVEMENT PROJECT

DESCRIPTION OF WORK/SCOPE OF WORK: The work to be done consists of the furnishing and installation of temporary housing facilities, AQMD Permitting and asbestos abatement, interior demolition, MEP improvements, construction of interior building improvements and finishes, restoration and removal of temporary housing and all other materials, labor, equipment, scheduling, coordination with City Departments, County Departments, all permitting and other features required to complete the project as intended for the function and use of the facility in line with the project plans, exhibits and these specifications.

COMPLETION OF WORK: The contract duration, including active construction and materials procurement, shall be one-hundred-forty **(140) working days.** Ordering of materials shall proceed within 10 days after the date set forth in the Notice to Proceed. Construction activities shall commence within a reasonable amount of time following execution of contracts as determined by the Director of Public Works, work shall be completed within the allowable working days. **Contractor shall provide the City with a tentative construction start date and the City reserves the right to modify the construction start date at their discretion.**

Bid must be submitted electronically for the exact item(s) requested in the bid specifications. Copies of the plans, specifications, and contract documents are available **free of charge** at https://pbsystem.planetbids.com/portal/45040/portal-home

PLANS AND SPECIFICATIONS:
Each proposal must conform and be responsive to all pertinent Contract Documents.

GUARANTEE: Each bid shall be made on the proposal form furnished by the City herewith and shall be in accordance with the plans, specifications and other contract documents and shall be accompanied by a certified check, cashier's check or bidders' bond, payable to the City in a sum not less than ten percent (10%) of the amount of the **TOTAL BID**, as a guarantee that the bidder will enter into the contract for the work, the full amount of such guarantee to be forfeited to the City should said bidder fail to enter into said contract. The successful bidder will be required to furnish a Faithful Performance Bond in the amount of not less than one hundred percent (100%) of the contract price, and a Labor and Material Bond in an amount of not less than one hundred percent (100%) of the contract price, said bonds to be secured from a surety company authorized to do business in the State of California, and to be subject to the approval of the City Attorney.

NOTICE INVITING BIDS (continued)

CALIFORNIA LABOR CODE COMPLIANCE: Compliance with the prevailing rates of wages, apprenticeship employment standards, and Contractor registration program established by the State Director of Industrial Relations will be required. Affirmative action to ensure against discrimination in employment practices on the basis of race, color, national origin, ancestry, sex, or religion will be also required.

No Contractor or Sub-Contractor may be listed on proposal unless they are registered with the Department of Industrial Relations (DIR) pursuant to Labor Code Section 1725.5.

PREVAILING WAGE RATES:
As required by the California Labor Code, Section 1773 et seq. and incorporated herein by reference, the general prevailing wage rate of per diem wages as determined by the Director of Industrial Relations of the State of California shall apply. In accordance with the Labor Code, no workman employed upon work under this contract shall be paid less than the above referenced prevailing wage rate. A copy of said rates shall be posted at each job site during the course of construction. Any classification omitted herein shall be paid not less than the prevailing wage scale as established for similar work in the particular area, and all overtime shall be paid at the prevailing rates as established for the particular area. Sunday and holiday time shall be paid at the wage rates determined by the Director of Industrial Relations. The current prevailing wage rates as adopted by the Director are available at the office of the Board of Supervisors, Room 383, Hall of Administration, 500 West Temple Street, Los Angeles, CA 90012.

PAYMENT: Payment will be made in cash to the Contractor in accordance with the specifications.

PAYMENT RETENTION:
Partial payments based on a percentage of work completed may be approved by the AGENCY. Said payment shall be in the amount of the total value of work estimated by the City Engineer to the time of the estimate, less five percent (5%) of said estimated value retained as part security for fulfillment of the contract by the CONTRACTOR, and less all previous payments made and sums to be kept or retained under the provisions of the contract. Said estimate and payment will not be made when, in the judgment of the City Engineer, the work is not proceeding in accordance with the provisions of the contract or when, in his judgment, the total value of work since the last estimate amounts to less than three hundred dollars ($300.00).

DELIVERY AND OPENING OF PROPOSALS: Bids are to be submitted electronically online. Electronic Bid System will close exactly at the date and time set forth in the Notice Inviting Bids. All applicable forms required to be completed per the Bid Documents shall be submitted electronically prior to the Bid date and time. **Hard copies will not be accepted**. It is the Bidder's sole responsibility to ensure that their bid is received as specified. Bids may be submitted earlier than the date(s) and time(s) indicated.

In addition to Planet Bids electronic bid opening, all proposals will be publicly read in front of the City Council Chambers of the La Verne City Hall on Tuesday, August 26, 2025 at 10:00 am.

Bids will be available at the date and time stated in the Notice Inviting Bids, each Bid will be available online and recorded. The City may in its sole discretion, elect to postpone the opening of the submitted Bids. The City reserves the right to reject any or all Bids and to waive any informality or irregularity in any Bid.

Pursuant to the provisions of Public Contracts Code Section 3300, a "B" license is required for the project. Any licensee who considers themselves qualified may submit a letter to the Agency from the State Registrar of

NOTICE INVITING BIDS (continued)

Contractors that the license held qualifies the bidder to perform the work described within the contract and specifications.

AGENCY'S RIGHTS RESERVED: The Agency reserves the right to reject any or all bids, to waive any informality in a bid, and to make awards in the interest of the City. No bidder may withdraw his bid for a period of 60 days after the bid opening.

The Contractor and subcontractors working in the City of La Verne must retain records pertaining to said project for a minimum of five (5) years. Record to be retained include but not limited to documents regarding payroll, change orders, field directives, as-built plans, etc.

Published in the Inland Daily Bulletin: July 25 & August 1, 2025
Bid Date: August 25, 2025

DEBRA FRITZ, CMC
DEPUTY CITY CLERK

PROPOSAL: The Proposal shall be made on the forms furnished herewith. The completed Proposal shall be enclosed in a sealed envelope bearing the name of the bidder and name of the project. The proposal shall be delivered by the time and to the place stipulated in the Notice Inviting Bids. It is the bidder's sole responsibility to see that his proposal is received in proper time. Any proposal received after the scheduled closing time for receipt of proposals will be returned to the bidder unopened. The proposal may be withdrawn by the bidder by means of a written request, signed by the bidder or his properly authorized representative. Such written request must be delivered to the place stipulated in the Notice Inviting Bids for receipt of proposals prior to the scheduled closing time for receipt of proposals.

Bids are to be submitted electronically online. Electronic Bid System will close exactly at the time set forth in the Notice Inviting Bids. All applicable forms required to be completed per the Bid Documents shall be submitted electronically prior to the Bid date and time. **Hard copies will not be accepted as a viable bid.** It is the Bidder's sole responsibility to ensure that its bid is received as specified. Bids may be submitted earlier than the date(s) and time(s) indicated.

Bids will be available at the date and time stated in the Notice Inviting Bids and the amount of each Bid will be available online and recorded. The City may in its sole discretion, elect to postpone the opening of the submitted Bids. The City reserves the right to reject any or all Bids and to waive any informality or irregularity in any Bid.

Discrepancies in, and/or omissions from the Plans, Specifications or other Contract Documents or questions as to their meaning shall be immediately brought to the attention of the City by submission of a written request for an interpretation or correction to the City. Such submission, if any, must be sent using the bids online system at https://pbsystem.planetbids.com/portal/45040/portal-home "Questions and Answer" tab NO LATER THAN FIVE (5) days prior to the due date of the bids.

Any interpretation of the Contract Documents will be made only by addendum duly issued electronically to each person registered on the prospective bidder's list. The City will not be responsible for any explanations or interpretations provided in any other manner. No person is authorized to make any oral interpretation of any provision in the Contract Documents to any Bidder, and no Bidder should rely on any such oral interpretation.

Bids shall include complete compensation for all items that are noted in the Contract Documents and are the responsibility of the Contractor.

PROPOSAL GUARANTEE: Each proposal shall be accompanied by a certified or cashier's check or bid bond in the amount of not less than ten (10%) percent of the total amount named in the proposal. Said check or bond shall be made payable to the Owner and shall be given as a guarantee that the bidder, if awarded the work, will enter into a contract within ten (10) calendar days after date of written notice of award and will furnish satisfactory Faithful Performance Bond and Labor and Material Bond, each of said bonds to be in the amount stated in the Notice Inviting Bids. In case of refusal or failure to enter into said contract, each check or bond, as the case may be, shall be forfeited to the Owner. If the bidder elects to furnish a Bid Bond as his proposal guarantee, he shall use the Bid Bond form herein, or one conforming substantially to it in form.

BIDDER'S EXAMINATION OF SITE: Before submitting a proposal, the bidder shall carefully examine the drawings, specifications, and other contract documents, and he shall visit the site of the work. **A MANDATORY JOB WALK MEETING WILL BE HELD ON THURSDAY, AUGUST 7, 2025 AT 10:00 AM AT FIRE STATION 1 2061 3RD STREET, LA VERNE CA 91750. ATTENDANCE AT THIS MEETING WILL BE REQUIRED TO BE DEEMED A QUALIFIED BIDDER FOR THIS PROJECT. FOLLOWING THE MANDATORY MEETING, A JOB WALK WILL BE CONDUCTED ON THE PROJECT SITES, ATTENDANCE FOR THE JOB WALK IS MANDATORY FOR THE DETERMINATION OF QUALIFICATION TO SUBMIT A VALID BID THE PROJECT.** It will be assumed that the bidder is familiar with existing sites and conditions and that they have a clear understanding of materials and performance of work.

COMPETENCY OF BIDDERS: In selecting the lowest responsible bidder, consideration will be given not only to the financial standing, but also the general competency of the bidder for the performance of the work covered by the proposal. To this end, each proposal shall be supported by a statement of the bidder's experience as to recent date on the form entitled "INFORMATION REQUIRED OF BIDDER" bound herein. No proposal for work will be accepted from a Contractor who is not licensed in accordance with applicable state laws.

DISQUALIFICATION OF BIDDERS: More than one proposal form from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. Reasonable grounds for believing that any bidder interested in more than one proposal for the work contemplated will cause the rejection of all proposals in which such bidder is interested. If there is reason for believing that collusion exists among the bidders, all bids will be rejected and none of the participants to such collusion will be considered for future proposals. No Contractor or Sub-Contractor may be listed on the proposal unless they are registered with the State DIR.

COMPLIANCE MONITORING AND ENFORCEMENT: In accordance with Section 1771 of the State Labor Code all Contractor and Sub-Contractors will be subjected to the Public Works Contractor Registration Program with the Department of Industrial Relations. No Bidder will be allowed to submit a proposal on this project unless they are registered with the DIR. Registration can be completed by visiting https://efiling.dir.ca.gov/PWCR.

Contractors and Sub-Contractors will also need to submit Certified Payroll Reports through the DIR Monitoring system. Prime Contractors will need to register at:
https://apps.dir.ca.gov/ecpr/DAS/AltLogin.

RETURN OF PROPOSAL GUARANTEE: Within ten (10) days after award of the contract, the Owner will return all proposal guarantees, except bonds, to their respective bidder except those accompanying proposals submitted by the three lowest responsible bidders. Those three will be held until the contract has been finally executed after which they will be returned to the respective bidders whose proposal they accompany.

AWARD OF CONTRACT: Award of a contract, if it be awarded, will be made to the lowest responsible bidder whose proposal complies with all the requirements prescribed. **THE BASIS FOR DETERMINING THE LOWEST BID WILL BE THE TOTAL SUM OF THE BASE BID.** The owner reserves the right to reject any or all bids, to waive any informality in a bid and

to make awards in the interest of the Owner. The award, if made, will be made within 30 days of the date for receipt of proposals.

EXECUTION OF CONTRACT: The bidder to whom award is made shall execute a written contract with the Owner on the form of agreement provided, and shall secure insurance required by the specifications within ten (10) calendar days after date of written notice of award. Failure or refusal to enter into a contract as herein provided or to conform to any of the stipulated requirements in connection therewith shall be just cause for annulment of the award and the forfeiture of the proposal guarantee. If the successful bidder refuses or fails to execute the contract, the Owner may award the contract to the second lowest responsible bidder. If the second lowest responsible bidder refuses or fails to execute the contract, the Owner may award the contract to the third lowest responsible bidder. On the failure or refusal of such second or third lowest bidders to execute the contract, such bidders' guarantee likewise shall be forfeited to the Owner. The work may then be re-advertised.

NON-DISCRIMINATION IN EMPLOYMENT: Contracts for work under this proposal will obligate the Contractors and subcontractors not to discriminate against any person on the basis of religion, color, ethnic group identification, sex, age, physical or mental disability, nor shall they discriminate unlawfully against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, mental disability, medical condition, marital status, age, or sex.

ADDENDA (Acknowledge Online): The City reserves the right to revise the Contract Documents prior to the Bid opening date. Revisions, if any, shall be made by written Addenda. All Addenda issued by the City shall be included in the Bid and made part of the Contract Documents. Pursuant to Public Contract Code Section 4104.5, if the City issues an Addendum which includes material changes to the Project less than 72 hours prior to the deadline for submission of Bids, the City will extend the deadline for submission of Bids. The City may determine, in its sole discretion, whether an Addendum warrants postponement of the Bid submission date. Each prospective Bidder shall provide City a name, address, email, and facsimile number to which Addenda may be sent, as well as a telephone number by which the City can contact the Bidder. Copies of Addenda will be available on https://pbsystem.planetbids.com/portal/45040/portal-home. Please Note: Bidders are responsible for ensuring that they have received any and all Addenda. To this end, each Bidder should review all addenda at https://pbsystem.planetbids.com/portal/45040/portal-home website to verify that all Addenda issued have been received, if any, prior to the Bid opening.

MODIFICATIONS OF BIDS: Each Bidder shall submit its Bid in strict conformity with the requirements of the Contract Documents. Unauthorized additions, modifications, revisions, conditions, limitations, exclusions or provisions attached to a Bid may render it non-responsive and may cause its rejection.

DELIVERY AND OPENING OF BIDS: Bids are to be submitted electronically online. Electronic Bid System will close exactly at the time set forth in the Notice Inviting Bids. All applicable forms required to be completed per the Bid Documents shall be submitted electronically prior to the Bid date and time. **Hard copies will not be accepted as a viable bid**. It is the Bidder's sole

responsibility to ensure that its bid is received as specified. Bids may be submitted earlier than the date(s) and time(s) indicated.

Bids results will be available at the date and time stated in the Notice Inviting Bids. The City may in its sole discretion, elect to postpone the opening of the submitted Bids. City reserves the right to reject any or all Bids and to waive any informality or irregularity in any Bid.

WITHDRAWAL OF BID: Prior to the Bid submittal deadline, a Bid may be withdrawn by the Bidder only by using the City's electronic bidding system at https://pbsystem.planetbids.com/portal/45040/portal-home

BASIS OF AWARD; BALANCED BIDS: The City shall award the Contract to the lowest responsive, responsible Bidder submitting a responsive Bid. The City may reject any Bid which, in its opinion when compared to other Bids received or to the City's internal estimates, does not accurately reflect the cost to perform the Work. The City may reject as non-responsive any Bid which unevenly weights or allocates costs, including but not limited to overhead and profit to one or more particular Bid items.

DISQUALIFICATION OF BIDDERS; INTEREST IN MORE THAN ONE BID: No Bidder shall be allowed to make, submit or be interested in more than one Bid. However, a person, firm, corporation or other entity that has submitted a sub-proposal to a Bidder, or that has quoted prices of materials to a Bidder, is not thereby disqualified from submitting a sub-proposal or quoting prices to other Bidders submitting a Bid to the City. No person, firm, corporation, or other entity may submit sub-proposal to a Bidder, or quote prices of materials to a Bidder, when also submitting a prime Bid on the same Project.

INSURANCE REQUIREMENTS: The successful Bidder shall procure the insurance in the form and in the amount specified in the General Conditions.

AWARD PROCESS: Once all Bids are opened and reviewed to determine the lowest responsive and responsible Bidder, the City will award the contract. The apparent successful Bidder should begin to prepare the following documents: (1) the Performance Bond; (2) the Payment (Labor and Materials) Bond; and (3) the required insurance certificates and endorsements. Once the City notifies the Bidder of the award, the Bidder will have ten (10) consecutive calendar days from the date of this notification letter to execute the Contract and supply the City with all of the required documents and certifications. Regardless whether the Bidder supplies the required documents and certifications in a timely manner, the Contract time will begin to run ten (10) calendar days from the date of the notification. Once the City receives all of the properly drafted and executed documents and certifications from the Bidder, the City shall issue a Notice to Proceed to that Bidder.

QUESTIONS AND COMMENTS: Questions and comments regarding this solicitation must be submitted in writing**,** no later than five (5) days before the Submittal Deadline. Such submission, if any, must be sent using the bids online system at https://pbsystem.planetbids.com/portal/45040/portal-home "Questions and Answer" tab **NO LATER THAN FIVE (5) days prior to the due date of the bids.** Answers, if any, made by the City will be answered using the bids online system.

PROPOSAL

The undersigned bidder hereby proposes to furnish all labor, material, equipment, tools and services necessary to perform all work required under the Agency's Specifications entitled:

CITY OF LA VERNE, FIRE STATION NO. 1 GENDER COMPLAINCE IMPROVEMENT PROJECT

in accordance with the intent of said Specifications, Drawings and all Addenda issued by said City prior to opening of the proposals.

Said bidder agrees that, within 10 calendar days after date of written Notice of Award of the Contract by said Agency, he will execute a contract in the required form, of which the Notice Inviting Bids, Instructions to Bidders, Proposal, Specifications, Drawings and all Addenda issued by said City prior to the opening of proposals, are part, and will secure the required insurance and bonds; and that upon failure to do so within said time, then the proposal guarantee furnished by said bidder shall be forfeited to said Agency as liquidated damages for such failure; provided, that if said bidder shall execute the contract and secure the required insurance within said time, his check, if furnished shall be returned to him within five (5) days thereafter, and the Bid Bond, if furnished, shall become void.

Said bidder further agrees to complete all work required under the contract within the time stipulated in said Specifications, and it accept in full payment therefore the price named in the Bidding Schedule.

I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Worker's Compensation or to undertake self-insurance in accordance with such provisions before commencing the performance of the work of this contract.

Date_____ _____

Bidder

_____

Signature

_____

Title

PROPOSAL FORM

TO THE CITY COUNCIL OF THE CITY OF LA VERNE, CALIFORNIA:

The undersigned as bidder declares that he has carefully examined the location of the proposed work, that he has examined the Special Provisions and read the accompanying instructions to bidders, and hereby proposes and agrees, if the proposal is accepted, to furnish all, materials and do all work required to complete the said work in accordance with the said Standard Specifications, Special Provisions, and Plans in the time and manner therein prescribed for the unit price set forth in the following schedule:

BASE BID SCHEDULE

Item No.	Estimated Quantity	Unit	Description of Items Written in Words	Unit Price	Total
1.	1	LS	Mobilization, Traffic Control, & Project Implementation Plan for the lump sum price of _____ _____ _____ (Words)	$_____	$_____
2.	1	LS	Hazardous Material Testing & Abatement, AQMD Permitting, Hauling & Disposal, Rule 1403 Compliance, all other Permitting and Complete Performance to Ensure the Project is Compliant with all other Requirements of Local, State and Federal Sources Pertaining to hazardous material removal for the Lump Sum price of _____ _____ _____ (Words)	$_____	$_____

PROPOSAL FORM (continued)

Item No.	Estimated Quantity	Unit	Description of Items Written in Words	Unit Price	Total
3.	1	LS	Furnish and Install Temporary Housing Accommodations for Fire Station Staff, Including Sleeping Quarters, Office Space, Kitchen and Dining Facilities, and Day Room for the Lump Sum price of _____ _____ _____ (Words)	$_____	$_____
4.	1	LS	Furnish and Install all Utilities, including Sewer, Power, Water Communications, Alarm System and all other Function required for Temporary Fire Station Operation for the Duration of the Project for the Lump Sum price of _____ _____ _____ (Words)	$_____	$_____

PROPOSAL FORM (continued)

Item No.	Estimated Quantity	Unit	Description of Items Written in Words	Unit Price	Total
5.	1	LS	Modify Existing Building Systems to Allow for Continuous Operations (24 Hours a Day, Seven Days A week) of Apparatus Bays, Emergency Operations Center Police Department Facilities, Server Room and Fire Department Administration Office Space During Living Quarters Updates for the Lump Sum price of _____ _____ _____ (Words)	$_____	$_____
6.	1	LS	Furnish and Install Complete, all Features of the Gender Compliance Improvement Plans as indicated on the Architectural Plans & Specifications and as Intended to Achieve Full Function and Performance of the Space for use as A Fire Station Living Quarters for the Lump Sum price of _____ _____ _____ (Words)	$_____	$_____

PROPOSAL FORM (continued)

Item No.	Estimated Quantity	Unit	Description of Items Written in Words	Unit Price	Total
7.	1	LS	Complete All Performance Testing, Function Evaluation, LA County Certifications and other Necessary Review to Certify the Temporary Housing and Final Housing Space Functional for Use by Fire Department Crews for the Lump Sum price of _____ _____ _____ (Words)	$_____	$_____
8.	1	LS	Disconnect All Utilities for Temp. Fire Station Housing Facilities, Remove Temp. Housing Facilities, and Restore Site to Original Conditions for the Lump Sum price of _____ _____ _____ (Words)	$_____	$_____
9.	1	LS	Complete All Project Punch List Items for the Lump Sum price of _____ _____ _____ (Words)	$_____	$_____

PROPOSAL FORM (continued)

TOTAL BASE BID AMOUNT (1 – 9): $

_____

TOTAL BASE BID AMOUNT (1 – 9 IN WORDS):

_____

_____

_____ _____

BIDDER'S SIGNATURE DATE BIDDER'S TITLE

PROPOSAL FORM (continued)

That the Contractor specifically agrees to comply with the applicable parts of Section 1777.5 of the Labor Code relating to employment by contractor and subcontractor under him, of journeymen or apprentices or workers, in any apprentice and craft or trade.

Section 1-6.2, "Subcontract Listing" of the Standard Specifications for Public Works Construction shall be applicable.

Accompanying this proposal is _____ (Insert "$_____cash," "cashier's check," "certified check," or "bidder's bond," as the case may be) in the amount equal to at least ten percent (10%) of the total BASE bid.

The undersigned further agrees that in case of default in executing the required contract, with necessary bonds, within ten (10) days, not including Sundays and legal holidays, after having received notice that the contract has been awarded and is ready for signature, the proceeds of the security accompanying his bid shall become the property of the City of La Verne, and this proposal and the acceptance thereof may be considered null and void.

(If an individual, so state. If a firm or co-partnership, state the firm name and give the names of all individual co-partners composing the firm. If a corporation, state legal name of corporation, also names of president, secretary, treasurer and manager thereof.)

_____

_____

_____
BUSINESS ADDRESS

_____
TELEPHONE NUMBER

DATED:_____,2025

SUBCONTRACTOR LIST

In compliance with the provisions of the Public Contract Code Section 4104, the undersigned bidder herewith sets forth the name, location of the place of business, and California contractor license of each Subcontractor who will perform work or labor or render service to the Prime Contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half (1/2) of one percent (1%) of the General Contractor's total bid amount or, in the case of bids or offers for the construction of streets or highways, including bridges in excess of one-half of 1 percent (0.5%) of the Prime Contractor's total bid or ten thousand dollars ($10,000), whichever is greater, and the portion of the work which will be done by each Subcontractor.

Name Under Which Sub-Contractor is Licensed:	**License Number**	**DIR No.**	**Location of Business**	**Specific Description of Sub-Contract Work% of the Work**

If the bidder fails to specify a Subcontractor for any portion of the work, the bidder agrees to perform the work with his own crews. (Alternative Subcontractors for the same work are prohibited by provisions of the California Government Code.)

An inadvertent error in listing the California contractor license number provided pursuant to paragraph (1) shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the corrected contractor's license number is submitted to the public entity by the prime contractor within 24 hours after the bid opening and provided the corrected contractor's license number corresponds to the submitted name and location for that subcontractor.

_____ _____

Dated Bidder

_____

Signature

_____

Signature

INFORMATION REQUIRED OF BIDDER

The bidder is required to supply the following information. Failure to provide this information under penalty of perjury renders the bid non-responsive and the bid will be rejected. Additional sheets may be attached if necessary. If requested by the Owner, the bidder shall furnish a notarized financial statement, references, and other information, sufficiently comprehensive to permit an appraisal of his current financial condition.

1. Address_____
2. Telephone_____
3. Type of Firm: Individual ( ) Partnership ( ) Corporation ( )
4. Corporation organized under the laws of the State of_____
5. Contractor's License: State _____ License No._____DIR No._____
   Expiration Date:_____ SAM No. (Federal Projects) _____
6. Names and Titles of all officers of the firm:
   _____
   _____
   _____
7. Number of years experience in projects of this type _____
8. Three projects of this type recently completed:

Contract Amount	Type of Project	Date Completed	Name, Address & Telephone of Owner
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

9. Person who inspected site of the proposed work for your firm:
   _____ Date Inspected_____

If the bidder fails to specify a subcontractor for any portion of the work, the bidder agrees to perform the work with his own crews. (Alternative subcontractors for the same work are prohibited by provisions of the California Public Contract).

I swear under penalty of perjury that the information provided is true and correct.

_____ _____

Signature Title

QUESTIONNAIRE TO GENERAL CONTRACTORS

The Contractor shall be required to complete this form entitled, "Questionnaire to General Contractors." The Owner will forward this form to the District Attorney for review.

1. Were bid depository or registry services used in obtaining subcontractor bid figures in order to compute your bid?

   ( ) YES ( ) NO

2. If the answer to No. 1 is "yes," please attach a copy of rules of each bid depository you used.

3. Did you have any source of subcontractors' bids other than bid depositories?

   ( ) YES ( ) NO

4. Has any person or group threatened you with subcontractor boycotts, union boycotts, or other sanctions to attempt to convince you to use the services or abide by the rules of one or more bid depositories?

   ( ) YES ( ) NO

5. If the answer to No. 4 is "Yes," please explain the following details:

   (a) Date:

   (b) Name of person or group:

   (c) Job involved (if applicable)

   (d) Nature of the threats: (use additional paper if needed)

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE, _____ as principal, and _____ as surety, are held and firmly bound unto the City of La Verne in the sum to ten percent (10%) of the total amount of the bid of the principal, to be paid to the said City or its certain attorney, its successors and assigns; for which payment will and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents.

In no case shall the liability of the surety hereunder exceed the sum of $_____.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That whereas the principal has submitted the above mentioned bid to the City of La Verne for certain construction specifically described as follows, for which bids are to be opened at **CITY OF LA VERNE, FIRE STATION NO. 1 GENDER COMPLAINCE IMPROVEMENT PROJECT in** the City of La Verne.

NOW THEREFORE, if the aforesaid principal is awarded the contract, and within the time and manner required under the specifications, after the prescribed forms are presented to him for signature, enters into a written contract, in the prescribed form in accordance with the bid, and files the two bonds with the City of La Verne, one to guarantee faithful performance and other to guarantee payments for labor and materials, as required by law, 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 the obligee and judgment is recovered, the surety shall pay all costs incurred by the obligee in such suit, including a reasonable attorney's fee to be fixed by the court.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this _____ day of _____, 2025.

_____(seal)
_____(seal)
_____(seal)
_____(seal)
PRINCIPAL
_____(seal)
_____(seal)
SURETY
_____(seal)
ADDRESS

NOTE: Signatures of those executing for the surety must be properly acknowledged.

NON-COLLUSION DECLARATION

(TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID)

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. 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. All statements contained in the bid are true. 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, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

AGREEMENT

THIS AGREEMENT made and entered into as of this _____ day of_____, 20____, by and between the City of La Verne, a municipal Corporation, hereinafter called "Owner," and _____, hereinafter called "Contractor."

WITNESSETH: That the parties hereto do mutually agree as follows:

ARTICLE I: For and in consideration of the payments and agreements hereinafter mentioned to be made and performed by said Owner, said Contractor agrees with said Owner to perform and complete in a; workmanlike manner all work required under the Owner's Specifications entitled:

CITY OF LA VERNE, FIRE STATION NO. 1 GENDER COMPLAINCE IMPROVEMENT PROJECT

in accordance with the Specifications and Drawings thereof, to furnish at his own expense all labor, materials, equipment, tools, supplies, transportation, utilities, bonds and insurance, permits and services necessary therefore, except such materials, equipment and services as may be stipulated in said Specifications to be furnished by said Owner, and to do everything required by this Agreement and the said Specifications and Drawings.

ARTICLE II: For furnishing all said labor, materials, equipment, tools, and services, furnishing and removing all plant, temporary structures, tools, and equipment, and doing everything required by this Agreement and the said Specifications and Drawings; also for all loss and damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen difficulties which may arise during the prosecution of the work until its acceptance by said Owner, and for all risks of every description connected with the work; also for all expenses resulting from the suspension or discontinuance of work, except as in the said Specifications are expressly stipulated to be borne by said Owner; and for completing the work in accordance with the requirements of said Specifications and Drawings as directed by the Engineer, said Owner will pay and said Contractor shall receive, in full compensation therefore, the price(s) named in the Proposal.

ARTICLE III: The Owner hereby employs said Contractor to perform the work according to the terms of this Agreement for price(s) named in the Proposal, and agrees to pay the same at the time, in the manner, and upon the condition as stipulated in the said Specifications; and the said parties for themselves, their heirs, executors, administrators, successors, and assigns, do hereby agree to the full performance of the covenants herein contained.

ARTICLE IV: The Notice Inviting Bids, Instruction to Bidders, Proposal, Information Required of Bidder, the General Conditions, Special Provisions and Technical Specifications, Drawings, and all Addenda issued by the Owner with respect to the foregoing prior to the opening of bids, area hereby incorporated in and made part of this Agreement.

AGREEMENT (continued)

ARTICLE V: All time limits stated in the Contract Documents are of the essence of this Agreement. No work, services, materials or equipment shall be performed or furnished under this Agreement unless and until a Notice to Proceed has been given to the Contractor by the Owner. Owner shall, with no liability to Contractor whatsoever, have an absolute right to withhold delivery of a Notice to Proceed until the statute of limitations for challenging the Owner's environmental review of this project has passed. Owner shall, also with no liability whatsoever to Contractor, have an absolute right to cancel this Agreement in the event that litigation is filed against the Owner challenging the Owner's environmental review of this project. Notwithstanding the foregoing, the Owner's said right to cancellation must be exercised not later than 45 days following the bid opening date, and before delivery of a Notice to Proceed to Contractor.

IN WITNESS WHEREOF, the parties hereto have caused this contract to be executed as of the day and year first above written.

OWNER_____

BY_____(Seal)

TITLE_____

ATTEST:

_____
Signature

_____
Title

_____ (Seal)
Contractor

BY

Title

CONTRACTOR'S SIGNATURES MUST BE NOTARIZED AND THE NOTARY ACKNOWLEDGMENT MUST SPECIFY THAT THE SIGNER OF THE AGREEMENT IS AUTHORIZED TO EXECUTE THE AGREEMENT. THE OWNER'S ATTORNEY SHALL DETERMINE THE SUFFICIENCY OF CONTRACTOR'S SIGNATURES, AND MAY REQUIRE NOTARIZED SIGNATURES FROM TWO OFFICERS IN THE EVENT THAT CONTRACTOR IS A CORPORATION.

FAITHFUL PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE_____
_____
hereinafter referred to as "Contractor" as PRINCIPAL, and_____
as SURETY, are held and firmly bound unto the CITY OF LA VERNE, CALIFORNIA hereinafter referred to as the "City," in the sum of
_____Dollars ($_____) lawful money of the United States of America, for the payment of which sum, will and truly to be made, we bind ourselves, jointly and several firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that whereas, said contract has been awarded and is about to enter into the annexed contract with said City for consideration of the work under the specification entitled

CITY OF LA VERNE, FIRE STATION NO. 1 GENDER COMPLAINCE IMPROVEMENT PROJECT

and is required by said City to give this bond in connection with the execution of said contract.

NOW, THEREFORE, if said Contractor shall well and truly do and perform all the covenants and obligations of said contract on his part to be done and performed at the time and in the manner specified herein; this obligation shall be null and void; otherwise it shall be and in full force and effect;

PROVIDED, that any alterations in the work to be done, or the materials to be furnished, which may be made pursuant to the terms of said contract shall not in any way release said Contractor or the Surety thereunder nor shall any extension of item granted under the provisions of said contract release either said Contractor or said Surety and notice of such alterations or extensions of the contract is hereby waived by such Surety.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of_____, 2025.

_____	_____
PRINCIPAL	SURETY
BY:_____	BY:_____
(SEAL)	(SEAL)

LABOR AND MATERIAL BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE_____ _____Hereinafter referred to as "Contractor" as PRINCIPAL, AND _____ as SURETY, are held and firmly bound unto the CITY OF LA VERNE, CALIFORNIA hereinafter referred to as the "City," in the sum of _____DOLLARS ($_____) lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves, jointly and several firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that whereas, said Contract has been awarded and is about to enter into the annexed contract with said City for construction of the work under the City's specification entitled

CITY OF LA VERNE, FIRE STATION NO. 1 GENDER COMPLAINCE IMPROVEMENT PROJECT

and is required by said City to give this bond in connection with the execution of said contract;

NOW, THEREFORE, if said Contractor in said contract, or subcontractor, fails to pay for any materials, provisions, provender or other supplies, or for the use of implements or machinery, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor, said Surety will pay for the same in an amount not exceeding the sum specified above, and also in case suit is brought upon this bond, a reasonable attorney's fee, to be fixed by the court. This bond shall inure to the benefit of any and all persons entitled to file claims under Section 1192.1 of the Code of Civil Procedure of the State of California.

PROVIDED, that any alterations in the work to be done, or the material to be furnished, which may be made pursuant to the terms of said contract, shall not in any way release either said Contractor or said Surety thereunder nor shall any extensions of time granted under the provisions of said contract release either said Contractor or said Surety, and notice of such alterations or extensions of the contract is hereby waived by said Surety.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 2025.

_____	_____
PRINCIPAL	SURETY
BY:_____	BY:_____
(SEAL)	(SEAL)

Owner:_____

RELEASE

Contractor:_____

Project:_____

In consideration of final payment of undisputed contract amounts relating to the above-referenced project, Contractor hereby releases Owner from any and all claims and liability for payment on the project except for the disputed work and the amounts set forth below:

DESCRIPTION OF DISPUTED WORK	DISPUTED AMOUNTS
Check if none _____	Check if none _____

CONTRACTOR

BY_____

_____
Title

_____
Date

NONDISCRIMINATION CLAUSE
(OCP - 2)

1. During the performance of this contract, the recipient, Contractor and its subcontractors shall not deny the contract's benefits to any person on the basis of religion, color, ethnic group identification, sex, age, physical or mental disability, nor shall they discriminate unlawfully against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, mental disability, medical condition, marital status, age or sex. Contractor shall insure that the evaluation and treatment of employees and applicants for employment are free of such discrimination.

2. Contractor shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12900 et seq.), the regulations promulgated thereunder (California Administrative Code, Title 2, Section 7285.0 et seq.), the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Government Code, Sections 11135-11139.5) and the regulations or standards adopted by the awarding State agency to implement such article.

3. Recipient, Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

4. The Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the contract.

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only **one** of the following seven boxes:

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ► _____

Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.

☐ Other (see instructions) ►

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number

			–		–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here **Signature of U.S. person** ► **Date** ►

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.ssa.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: *A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.*

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor[2]
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
5. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity[4]
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 2.

***Note.** Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: *spam@uce.gov* or contact them at *www.ftc.gov/idtheft* or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

BIDDER'S VIOLATION OF LAW/SAFETY QUESTIONNAIRE

In accordance with Public Contract Code Section 10161, the Bidder shall complete, under penalty of perjury, the following questionnaire:

QUESTIONNAIRE

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

YES _____ NO_____

If the answer is yes, explain the circumstances in the following space.

NOTE: This questionnaire constitutes a part of the Proposal, and signature on the signature portion of this Proposal shall constitute signature of this questionnaire.

CITY OF LA VERNE
GENERAL REQUIREMENTS

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GENERAL CONDITIONS

SECTION 1 - DEFINITIONS AND ABBREVIATIONS

1.01 DEFINITIONS

Wherever the words defined in this article, or pronouns used in their stead, occur in these specifications or in any of the other contract documents, the intent and meaning shall be as follows:

(a) CITY. The City of La Verne, County of Los Angeles, State of California

(b) CITY COUNCIL. The duly elected Council of the City of La Verne.

(c) CITY ENGINEER OR ENGINEER. Shall be understood to mean the City Engineer or his designated representative.

(d) CONTRACTOR. Contractor shall mean the party entering into contract with the City for performance of the work called for in these specifications and shown on the drawings, including the Contractor's authorized agents.

(e) SUBCONTRACTOR. Subcontractor shall mean any person, firm, or corporation entering into agreement with the Contractor for performance of any part of the Contractor's obligation under the contract.

(f) CONTRACT. Contract shall mean the contract documents and shall include the written agreement entered into by the City and the Contractor for the performance of work described in the specifications and shown on the drawings, together with the Notice Inviting Bids, the Instructions to Bidders, the Proposal, the Information Required of Bidders, the Specifications, the Drawings, all Addenda issued by the City with respect to the foregoing prior to the opening of bids, and all change orders issued by the City and signed by the Contractor pertaining to the contract after the contract is awarded.

(g) SPECIFICATIONS. Specifications shall mean the General Conditions, the Special Provisions and the Technical Specifications of the contract, together with all Addenda and Change Orders issued with respect thereto.

(h) DRAWINGS. Drawings or contract drawings shall mean those drawings accompanying the specifications which show the location, nature, extent and form of the work, together with applicable details.

SECTION 1 - DEFINITIONS AND ABBREVIATIONS

Wherever the following abbreviations are used they shall have the meanings listed:

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGA	American Gas Association
AI	The Asphalt Institute
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing Materials
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
CRSI	Concrete Reinforcement Steel Institute
NEMA	National Electrical Manufacturer's Association
NIC	Not in Contract
NTS	Not to Scale
OAE	Or Approved Equal
OSHA	Occupational Safety and Health Act
PCA	Portland Cement Association
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
UBC	Uniform Building Code
U/L	Underwriters Laboratories, Inc.

1.02 THE REQUIREMENT

It is required that there be furnished in accordance with these specifications, the City of La Verne General Conditions and Technical Specifications, and accompanying drawings, all labor, equipment, and material of every description as required or necessary to excavate, backfill, grade, drill, construct, lay, erect, install, test, cleanup, instruct as to proper use, and leave in an operable and acceptable condition all of the work.

1.03 BEGINNING AND COMPLETION OF WORK

The work shall commence within ten (10) calendar days after the date set forth in the Notice to Proceed and be completed within the time as specified in the Notice Inviting Bids.

1.04 LIQUIDATED DAMAGES

The City and Contractor agree that it would be impracticable or extremely difficult to fix actual damages in case of Contractor's delay in completion of work beyond the time agreed upon, therefore, City and Contractor agree that contractor shall pay City as fixed, agreed and liquidated damages the amount of $500.00 for each working day's delay in completion of the work beyond the time agreed upon, and agrees that said liquidated damages is a reasonable estimate of the damages to be sustained by City.

1.05 STANDARD SPECIFICATIONS

The work shall be in accordance with these specifications and the "Standard Specifications for Public Works Construction", Latest Edition as specified in Description of Bid Items of these specifications, published by Building News, Inc., 3055 Overland Avenue, Los Angeles, California, 90034 and are referred to elsewhere in these specifications as Standard Specifications and the "City of La Verne General Conditions and Technical Specifications".

Copies of the "Standard Specifications and the City of La Verne General Conditions and Technical Specifications" are on file in the office of the City Engineer and are open to public inspection during regular business hours.

1.06 CONTRACT DRAWINGS

The contract drawings applicable to the work to be performed under this contract are bound herein.

1.07 INSURANCE

CALIFORNIA JOINT POWERS INSURANCE AUTHORITY
INSURANCE REQUIREMENTS FOR CONTRACTORS
(with Construction Risks)

Prior to the beginning of and throughout the duration of the Work, Contractor will maintain insurance in conformance with the requirements set forth below. Contractor will use existing coverage to comply with these requirements. If that existing coverage does not meet the requirements set forth here, it will be amended to do so. Contractor acknowledges that the insurance coverage and policy limits set forth in this section constitute the minimum amount of coverage required. Any insurance proceeds available to the City in excess of the limits and coverage required in this agreement and which is applicable to a given loss, will be available to City.

Contractor shall provide the following types and amounts of insurance:

1. **Commercial General Liability Insurance** using Insurance Services Office "Commercial General Liability" policy form CG 00 01 or the exact equivalent. Defense costs must be paid in addition to the limits. There shall be no cross liability exclusion for claims or suits by one insured against another. Liability shall be no less than $1,000,000 per occurrence for all covered losses and no less than $2,000,000 in general aggregate.

   Contractor's policy shall contain no endorsements limiting coverage beyond the basic policy coverage grant for any of the following:

   - Explosion, collapse, or underground hazard (XCU)
   - Products and completed operations
   - Pollution liability
   - Contractual liability

   Coverage shall be applicable to City for injury to employees of contractors, subcontractors, or others involved in the project. Policy shall be endorsed to provide a separate limit applicable to this project.

2. **Workers Compensation** on a state-approved policy form providing statutory benefits as required by law with employer's liability limits no less than $1,000,000 per accident on covered losses.

3. **Business Auto Coverage** on ISO Business Auto Coverage form CA 00 01 06 92 including symbol 1 (any auto) or the exact equivalent. Limits shall be no less than $1,000,000 per accident, combined single limit. If Contractor owns no

vehicles, this requirement may be satisfied by a non-owned auto endorsement to the general liability policy described above. If Contractor or Contractor's employees will use personal autos in any way on this project, Contractor shall provide evidence of personal auto liability coverage for each such person.

4. **Excess or Umbrella Liability Coverage** (Over Primary) if used to meet limit requirements, shall provide coverage at least as broad as specified for the underlying coverages. Any such coverage provided under an umbrella liability policy shall include a drop down provision providing primary coverage above a maximum $25,000 self-insured retention for liability not covered by primary but covered by the umbrella. Coverage shall be provided on a "pay on behalf" basis, with defense costs payable in addition to policy limits. There shall be no cross liability exclusion precluding coverage for claims or suits by one insured against another. Coverage shall be applicable to City for injury to employees of Contractor, subcontractors or others involved in the Work. The scope of coverage provided is subject to approval of City following receipt of proof of insurance as required herein. Limits are subject to review but in no event less than $5,000,000.00 per occurrence and aggregate.

Insurance procured pursuant to these requirements shall be written by insurers that are admitted carriers in the State of California and with an A.M. Best Rating of A- or better and a minimum financial size of VII.

Contractor and City agree as follows:

1. Contractor agrees to endorse the third party general liability coverage required herein to include as additional insureds City, its officials, employees and agents, using standard ISO endorsement No. CG 2010 with an edition date of 1985. Contractor also agrees to require all contractors, subcontractors, and anyone else involved in any way with the project contemplated by this agreement to do likewise.

2. Any waiver of subrogation express or implied on the part of City to any party involved in this agreement or related documents applies only to the extent of insurance proceeds actually paid. City, having required that it be named as additional insured to all insurance coverage required herein, expressly retains the right or subrogate against any party for sums not paid by insurance. For its part, Contractor agrees to waive subrogation rights against City regardless of the applicability of any insurance proceeds, and to require all contractors, subcontractors, or others involved in any way with the project(s) contemplated by this agreement to do likewise.

3. All insurance coverage maintained or procured by Contractor or required of others by Contractor pursuant to this agreement shall be endorsed to delete the subrogation condition as to City, or to specifically allow Contractor or others providing insurance herein to waive subrogation prior to a loss. This endorsement

shall be obtained regardless of existing policy wording that may appear to allow such waivers.

4. It is agreed by Contractor and City that insurance provided pursuant to these requirements is not intended by any party to be limited to providing coverage for the vicarious liability of City, or to the supervisory role, if any, of the City. All insurance coverage provided pursuant to this or any other agreement (express or implied) in any way relating to City is intended to apply the full extent of policies involved. Nothing referred to here or contained in any agreement involving City in relation to the project(s) contemplated by this agreement is intended to be construed to limit the application of insurance coverage in any way.

5. None of these coverages required herein will be incompliance with these requirements if they include any limiting endorsement of any kind that has not been first submitted to City an approved of in writing.

6. All coverage types and limits required are subject to approval, modification, and additional requirements by City, as the need arises. Contractor shall not make any reductions in scope of coverage (e.g. elimination of contractual liability or reduction of discovery period) that may affect City's protection without City's prior written consent.

7. Proof of compliance with these insurance requirements, consisting of binders of coverage, or endorsements, or certificates of insurance, at the option of the City, shall be delivered at or City prior to execution of this Agreement. In the event such proof of any insurance is not delivered as required, or in the event such insurance is cancelled at any time an no replacement coverage is provided, City has right, but not the duty to contain any insurance it deems necessary to protect its interests under this or any other agreement and to pay the premium. Any premium so paid by City shall be charged to and promptly paid by Contractor or deducted from sums due Contractor, at City option.

8. Contractor agrees to endorse, and to require others to endorse, the insurance provided pursuant to these requirements, to require 30 days notice to the City and the appropriate tender prior to the cancellation of such liability coverage and notice of any material alteration or non-renewal of any such coverage, and to require contractors, subcontractors, and any other party in any way involved with the project contemplated by this agreement to do likewise.

9. It is acknowledged by the parties of this agreement that all insurance coverage required to be provided by the Contractor or any subcontractor, is intended to apply first and on a primary non-contributing basis in relation to any other insurance or self insurance available to City.

10. Contractor agrees to ensure that subcontractors, and any other party involved with this project who is brought onto or involved in the project by contractor, provide the same minimum insurance coverage required of the Contractor. Contractor agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this section. Contractor agrees that, upon request, all agreements with subcontractors and others engaged in the project will be submitted to City for review.

11. Contractor agrees that all layers of third party liability coverage required herein, primary, umbrella, and excess, will have the same starting and expiration date. Contractor agrees further that all other third party coverages required herein will likewise have concurrent starting and ending dates.

12. Contractor agrees not to self-insure or to use any self-insured retentions or deductibles on any portion of the insurance requires herein and further agrees that it will not allow any contractor, subcontractor, Architect, or Engineer or other entity or person in any way involved in the performance of work on the project contemplated by this agreement to self-insure its obligations to City. If contractor's existing coverage includes a deductible or self-insured retention, the deductible or self-insured retention must be declared to the City. At that time, City shall review options with the contractor, which may include reduction or elimination of the deductible or self-insured retention, substitution of other coverage, or other solutions.

13. The City reserves the right at any time during the term of the contract to change the amounts and types of insurance required by giving the Contractor ninety (90) days advance written notice of such change. If such change results in substantial additional cost to the Contractor, the City will negotiate additional compensation proportional to the increased benefit to the City.

14. For purposes of applying insurance coverage only, all contracts pertaining to the project will be deemed to be executed when finalized and any activity commences in furtherance pf performance under this agreement.

15. Contractor acknowledges and agrees that any actual or alleged failure on the part of the City to inform Contractor of non-compliance with any insurance requirement in no way imposes any additional obligations on City nor does it waive any rights hereunder in this or any other regard.

16. Contractor will renew the required coverage annually as long as City, or its employees, face an exposure from operations of any type pursuant to this agreement. This obligation applies whether or not the agreement in cancelled or terminated for any reason. The insurance shall include, but not be limited to, products and completed operations and discontinued operations, where applicable.

Termination of this obligation is not effective until City executes a written statement to that effect.

17. Contractor agrees to waive its statutory immunity under any workers' compensation statute or similar statute, in relation to the city, and to require all subcontractors and any other person or entity involved in the project contemplated by this agreement to do likewise.

18. Requirements of specific coverage features are not intended as limitations on other requirements or as a waiver of any coverage normally provided by any given policy. Specific reference to a given coverage feature is for purposes of clarification only as it pertains to a given issue, and is not intended by any party or insured to be all-inclusive.

19. Any provision in any of the construction documents dealing with the insurance coverage provided pursuant to these requirements is subordinate to and superseded by the requirements contained herein. These insurance requirements are intended to be separate and distinct from any other provision in this agreement and are intended by the parties here to be interpreted as such.

20. All liability coverage provided according to these requirements must be endorsed to provide a separate aggregate limit for the project that is the subject of this agreement and evidencing products and completed operations coverage for not less than two years after issuance of a final certificate of occupancy by all appropriate government agencies or acceptance of the completed work by the City.

21. Contractor agrees to be responsible for ensuring that no contract used by any party involved in any way with the project reserves the right to charge City or Contractor for the cost of additional insurance coverage required by this agreement. Any such provisions are to be deleted with reference to the City. It is not the intent of the City to reimburse any third party for the cost of complying with these requirements. There shall be no recourse against the City for payment of premiums or other amounts with respect thereto.

22. Contractor agrees to obtain and provide to City a copy of Professional Liability coverage for Architects or Engineers working on this project through the Contractor. City shall determine the liability limit.

23. SUBCONTRACTOR'S PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE AND VEHICLE LIABILITY INSURANCE. The Contractor shall either: (1) require each of his Subcontractors to procure and to maintain Subcontractor's public liability and property damage insurance and vehicle liability insurance of the type and in amounts specified, or (2) insure the activities of his Subcontractors in his own policy, in like amount.

24. SCOPE OF INSURANCE. The insurance required under hereof shall provide adequate protection for the Contractor and his Subcontractors, respectively, against damage claims which may arise from operations under this contract, whether such operations be by the insured or by anyone directly or indirectly employed by him. The insurance required hereof shall name the City, Engineer and their officers, Construction Manager, agents and employees as "additional insured" under this policy. The policies of insurance shall provide that the naming of the City, Engineer and their officers, agents and employees shall not affect any recovery of which they would be entitled under the policy if not named as an insured and that any other insurance held by the City, Engineer and their officers, agents and employees shall not be required to contribute anything toward any loss or expense covered by said policy. The coverage requirements described in this paragraph shall be satisfied by endorsements to the Contractor's policy, and the Contractor shall attach insurance company certified copies of such endorsements to any "Proof of Insurance" certificate furnished to City.

1.08 WATER AND POWER

(a) If required, the City will supply the Contractor with all water required during the construction. Upon the Contractor making a deposit of $1,000.00 for each meter, the Contractor shall install the meter on a fire hydrant as near as possible to the site of the work. The Contractor at his own expense shall provide facilities for conveying the water from the meter to the point of use.

(b) The service charge for such temporary service shall be a minimum of $50.00 monthly or any portion thereof plus a $50.00 per month minimum assessment plus $2.24 for each 1,000 gallon depending upon location.

(c) Temporary water service is also assessed a Miramar service charge, whether metered or not, and shall be $50 monthly.

(d) The Contractor shall provide electric power as required for his operations under the contract. He shall pay for the meter installation and for all power used.

1.09 PERMITS AND LICENSES

Business licenses are required for Contractors and Sub-contractors.

1.10 LINES, GRADES AND MEASUREMENTS

(a) All lines and grades required for proper execution of the work will be furnished by the City.

(b) The Contractor shall preserve all bench marks, monuments, survey marks and stakes and, in case of the removal or destruction by his employees, he shall be liable for the cost of their replacement.

1.11 GUARANTEE

The Contractor hereby guarantees for a one-year period that the entire work constructed by him under this contract will meet fully all requirements thereof as to quality of workmanship and of materials furnished by him.

1.12 RESTORATION OF EXISTING FACILITIES

(a) ROADS AND STREETS. All paved surfaces which are removed, broken or damaged, or in which the ground has caved or settled due to work under this

contract, shall be completely resurfaced and brought to the original grade and crown section unless otherwise indicated. Before resurfacing material is placed, edges of pavements shall be trimmed back far enough to provide clean, solid, vertical faces, and shall be free of any requirements of there specifications. Roadways used by the Contractor for hauling materials, equipment, supplies, etc., shall be cleaned and repaired if the condition of the roadway is damaged or otherwise affected due to the Contractor's operation. Contractor shall protect all existing traffic markings in areas adjacent to project area. Any damages to markings shall be cause for contractor to replace per City's direction.

(b) EXISTING STAKES AND MARKS. All section, section subdivisions, plat, U.S.E.D., U.S.C. & G.S., U.S.G.S., and any other official monuments or bench marks shall be carefully preserved or replaced. In the event any such monument or marker is disturbed as a result of the Contractor's operation, the Contractor shall replace or reset such monument or marker in a manner satisfactory to the Engineer. Replaced or reset monuments shall be of acceptable type and quality and shall be located so as to clear existing utilities or any other interference. They shall be placed in a manner consistent with good and recognized engineering survey practice.

1.13 WATERING

(a) Water for compacting original ground, fill material, subgrades, and water required for laying dust caused by grading operations and the passage of traffic through the work shall be applied as directed by the Engineer.

(b) Full compensation for furnishing water for any of the construction operations shall be considered included in the prices paid for the various contract items of work and no additional allowance shall be made therefor.

SECTION 2 - SPECIFICATIONS AND DRAWINGS

2.01 INTERPRETATION OF SPECIFICATIONS AND DRAWINGS

The specifications and the drawings are intended to be explanatory of each other. Any work indicated in the drawings and not in specifications, or vice versa, shall be executed as if indicated in both. As the figured dimensions shown on the drawings and in the specifications of the contract may not in every case agree with scale dimensions, the figured dimensions shall be followed in preference to the scaled dimensions, and drawings to a large scale shall be followed in preference to the drawings to a small scale. Should it appear that the work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the contract documents, the Contractor shall apply to the Engineer for such further explanations as may be necessary, and shall conform thereto as part of the contract. In the event of any doubt or questions arising respecting the meaning of the specifications or drawings, reference shall be made to the Engineer and his decision therein shall be final.

2.02 CONFLICTS BETWEEN SPECIFICATIONS AND DRAWINGS

In case of conflict between the specifications and the drawings, the specifications shall govern over the drawings. In case of conflict between the General Conditions and Special Provisions of the specifications, the Special Provisions shall govern over the General Conditions.

2.03 STANDARD SPECIFICATIONS

A reference to the Standard Specifications shall mean "Standard Specifications For Public Works Construction" (SSPWC), the Latest edition and amendments. All work performed shall conform to the SSPWC.

2.04 SHOP DRAWINGS

(a) Wherever called for in these specifications or on the drawings, or where required by the Engineer, the Contractor shall furnish to the Engineer for review six (6) prints of each shop drawing. The term "shop drawing" as used herein shall be understood to include lists, graphs, operating instruction, etc. Unless otherwise required, said drawings shall be submitted at a time sufficiently early to allow review of same by the Engineer, and to accommodate the rate of construction progress required under the contract.

(b) Except as may be otherwise provided in the Special Provisions, the Engineer will return prints of each shop drawing to the Contractor, with his comments noted thereon, within 15 calendar days following their receipt at his office. The Contractor shall make a complete and acceptable submittal to the Engineer by the second submission of drawings. The City reserves the right to withhold monies due the Contractor to cover additional costs of the Engineer's review beyond the second submittal.

(c) If two prints of the drawing are returned to the Contractor marked NO EXCEPTIONS TAKEN, formal revision and re-submittal of said drawing will not be required.

(d) If two prints of the drawing are returned to the Contractor marked MAKE CORRECTIONS NOTED, formal revision and re-submittal of said drawing will not be required.

(e) If one print of the drawing is returned to the Contractor marked AMEND AND RESUBMIT or REJECTED-RESUBMIT the Contractor shall revise said drawing and shall resubmit six (6) copies of said revised drawing to the Engineer.

(f) Fabrication of an item shall not be commenced before the Engineer has reviewed the pertinent shop drawings and returned copies to the Contractor marked either NO EXCEPTIONS TAKEN or MAKE CORRECTIONS NOTED. Revisions indicated on shop drawings shall be considered as changes necessary to meet the requirements of the contract drawings and specifications and shall not be taken as the basis of claims for extra work. The Contractor shall have no claim for damages or extension of time due to any delay resulting from the Contractor's having to make the required revisions to shop drawings (unless review by the Engineer of said drawings is delayed beyond a reasonable period of time and unless the Contractor can establish that the Engineer's delay in review actually resulted in a delay in the Contractor's construction schedule). The review of said drawings by the Engineer will be limited to checking for general agreement with the specifications and drawings and shall in no way relieve the Contractor of responsibility for errors or omissions contained therein, nor shall such review operate to waive or modify any provision contained in the specifications or contract drawings. Fabricating dimensions, quantities of material, applicable code requirements and other contract requirements shall be the Contractor's responsibility.

2.05 REFERENCE TO STANDARDS, PUBLICATIONS OR STANDARD SPECIFICATIONS

Any reference made in the specifications or drawings to any specification, standard, or publication of any organization shall, in the absence of a specific designation to the contrary, be understood to refer to the latest edition of the specification, standard or publication in effect as of the date of advertising the work.

2.06 REFERENCE TO PROPRIETARY PRODUCTS

Where references to propriety products appear in the specifications or drawings, whether or not followed by the words "or approved equal", it is for the purpose of establishing an acceptable standard of quality or design. Unless a substitute is expressly prohibited, the Contractor may request approval of a substitute for any such proprietary product. Such approval normally will not be given by the Engineer prior to award of a contract. A request for substitution must be in writing and must include descriptive literature, specifications, test reports or samples, as appropriate, to enable the Engineer to determine the acceptability of the product proposed for substitution. If substitution is requested as part of a shop drawing submittal, the item(s) proposed for substitution shall be clearly indicated. No substitute product shall be used on the work until written approval has been received from the Engineer. Any revisions to structures, piping, mechanical, electrical, instrumentation, or any other work made necessary by such substitution must be approved by the Engineer and the entire cost of these revisions shall be borne by the Contractor.

2.07 SPECIFICATIONS AND DRAWINGS FURNISHED TO CONTRACTOR

The City will furnish to the Contractor two (2) complete sets of specifications together with (2) complete sets of drawings. Additional quantities of specifications and drawings will be available at reproduction cost upon Contractor direct order from Davis Blue Print in Los Angeles.

2.08 AS-BUILT DRAWINGS

The Contractor shall maintain, on the job site, a set of full-size blueline or blackline prints of the contract drawings. On these he shall mark all as-built conditions, locations, configurations, and other details which may vary from the details represented on the original drawings. This master record of as-built conditions, including all revisions made necessary by addenda, change orders and field conditions shall be maintained up -to-date during the progress of the work.

2.08 AS-BUILT DRAWINGS (continued)

In the case of those drawings which depict the detailed requirement for equipment to be assembled and wired in the factory, such as motor control centers and instrumentation, the as-built drawings shall be updated by indicating those portions which are superseded by final shop drawings, and by including a reference note describing the shop drawings by manufacturer, drawing and revision number and date.

Upon completion of the work but prior to final acceptance, the as-built drawings shall be delivered to the City.

SECTION 3 - CITY-ENGINEER-CONTRACTOR RELATIONS

3.01 AUTHORITY OF CITY

(a) The work and the manner of performing the same shall be done to the satisfaction and approval of the City.

(b) The contract documents do not purport to control the method of performing the work but only the requirements as to the nature of the completed work. The Contractor shall assume the entire responsibility for methods of performing the work.

3.02 AUTHORITY OF THE ENGINEER

The Engineer is the agent of the City and is employed to act as advisor and consultant to the City in engineering matters relating to the contract. The City has delegated its authority under this contract to the Engineer to determine the amount, quality, acceptability and fitness of the several kinds of work, material and equipment which are to be paid for under the contract; to decide for the City all questions relative to the construction, meaning and intent of the contract documents; to decide all questions relative to the classification and measurements of quantities and materials and the fulfillment of this contract, and to reject or condemn all work or material which does not conform to the terms of this contract. The Engineer's decision in all matters is the decision of the City and can only be changed by the City.

3.03 INSPECTION AND TESTING

(a) All materials furnished and all work performed under the contract shall be subject to inspection by the Engineer. Such inspection may include mill, plant, and shop or field inspection as required. The Engineer shall be permitted access to all parts of the work, including plants where material or equipment are manufactured or fabricated, and he shall be furnished with such materials, information and assistance by the Contractor and his Subcontractors and suppliers as is required to make a complete and detailed inspection.

(b) Work done in the absence of prescribed inspection may be required to be removed and replaced under proper inspection, and the entire cost of removal and replacement, including the cost of all materials which may be furnished by the City and used in the work thus removed, shall be borne by the Contractor, regardless of whether the work removed is found to be defective or not. Work shall not be covered up without the authority of the Engineer. If so, covered without authority, the work, upon order of the Engineer, shall be uncovered too the

extent required, and the Contractor similarly shall bear the entire cost of performing all the work and furnishing all the material necessary for the removal of the covering and its subsequently replacement, as directed and approved by the Engineer.

(c) Except as otherwise provided herein, inspection fees and costs will be paid by the City. All inspection fees and costs imposed by agencies other than the City shall be paid by the Contractor.

(d) The Engineer will make, or have made, such tests, as he deems necessary to insure that the work is being accomplished in accordance with the requirements of the contract. Unless otherwise specified in the Special Provisions, the cost of such testing will be borne by the City. In the event such tests reveal noncompliance with the requirements of the contract, the Contractor shall bear the cost of such corrective measures deemed necessary by the Engineer, as well as the cost of subsequent re-testing.

(e) The City will provide inspection for an 8-hour day and 40-hour week. The Contractor shall reimburse the City at rates established by the City for inspection in excess of the foregoing including legal holidays.

3.04 CHANGE ORDERS

(a) The City, or its duly authorized representative, may order changes in the work through additions, deletions of modifications. Such changes will be effected through written change orders delivered to the Contractor describing the change required in the work, together with any adjustment in contract price or time in completion as hereinafter provided. No such change shall constitute the basis of claims for damage or anticipated profits; however, the Engineer will make reasonable allowance for the value of any work, materials or equipment furnished and subsequently rendered useless because of such changes. Any adjustment in contract price resulting from a change order will be considered in computing subsequent monthly payments due the Contractor. Any work performed in accordance with a change order shall be subject to all provisions of the original contract, and the Contractor's sureties shall be bound thereby to the same degree as under the original contract.

(b) Any adjustment in contract price shall be based on unit price bid items or additive and deductive bid items submitted by the Contractor in his original bid on the work where such bid items are applicable.

(c) If the original bid prices are not applicable, the adjustment in contract price shall be based on a lump sum or unit price agreed upon by the City and the Contractor prior to executing the change order.

(d) If the original bid prices are not applicable and the City and Contractor are unable to agree upon a lump sum or unit price prior to executing the change order, the adjustment in contract price shall be made on a cost-plus basis. In such an event, the following items will be included as the direct costs:

- Materials and supplies
- Labor (including foremen's wages)
- Worker's compensation insurance
- Unemployment insurance contributions paid to the State
- Social Security taxes paid to the Federal Government
- Labor union health and welfare, pension, vacation-holiday and apprenticeship fund contribution
- Value for use of equipment for actual time of use according to Caltrans "Labor Surcharge and Equipment Rental Rates" for the current year

In addition to the direct costs enumerated above, the City will pay to the Contractor for said extra work a percentage of said direct costs to compensate for the following profit and overhead items:

- Profit
- General expenses
- All insurance except workmen's compensation insurance
- Excise taxes
- Property taxes
- License and inspection fees
- Bond premiums
- All other items of expense not specifically enumerated above

Said percentage will be 15 percent of said direct costs provided the Contractor actually performs said extra work himself. In the event said extra work is performed by a Subcontractor, the percentage paid to the Contractor will be 20 percent of said Subcontractor's direct costs. Said 20 percent will include allowance for profit and overhead costs for both the Contractor and Subcontractor. In the event said extra work is performed through more than one Subcontractor in succession, said percentage will not exceed 25 percent.

(e) When work is being performed on a cost-plus basis, the Contractor shall submit written reports as directed by the Engineer, showing all items of direct cost which enter into the work. If required by the Engineer, the Contractor shall furnish books, vouchers, invoices and other records to substantiate the direct cost items listed in said reports.

(f) No change order will be issued by City for cost of delays associated with weather impact, or any extra work resulting thereof. It shall be the Contractor's responsibility to provide all protection necessary to the work in place and or to the areas of the project to receive the work against potential damages by inclement weather. Contractor shall use his best judgment as to the extent of protection required to avoid damages to the project by inclement weather.

3.05 CONTRACTOR'S PLANT AND EQUIPMENT

The Contractor shall at all times be responsible for the adequacy, efficiency and sufficiency of his and his Subcontractor's plant and equipment.

3.06 ASSIGNMENT OF CONTRACT

(a) The contract shall not assign, sublet, sell, transfer or otherwise dispose of the contract or any portion thereof, or his right, title or interest therein, or his obligations thereunder, without the prior written consent of the City. City shall have no obligation whatsoever to provide such written consent.

(b) If the Contractor violates the provisions of this section, the contract may be terminated at the option of the City and the City shall be relieved of all liability and obligations to the Contractor, and to his assignee or transferee, growing out of such termination.

3.07 SUBCONTRACTS

(a) All proposed Subcontractors shall be listed by the Contractor at the time of bid opening and shall be contained in the Information Required of Bidders. The Contractor may request a replacement of a previously approved Subcontractor in writing to the Engineer. Any such request is subject to approval by the City and shall comply with the provisions of Section 4100 et.seq. of the California Public Contracts Code.

(b) The Contractor shall perform not less than 50 percent of the work with his own forces (i.e., without subcontracting). This requirement shall be understood to refer to work, the value of which totals not less than 50 percent of the contract price. Refer to Section 3-2 of the SSPWC for clarification.

(c) In the City's discretion, subject to the requirements of Section 3.07(a), subcontracts may be permitted to such extent as shall be shown to be necessary or advantageous to the Contractor in the prosecution of the work and without injury to the City's interests. The re-subletting of work by a Subcontractor shall be subject to the same limitations as an original subletting. Each Subcontractor shall be properly licensed for the type of work which he is to perform.

(d) A copy of each subcontract, if in writing (or if not in writing, then a written statement signed by the Contractor giving the name of the Subcontractor and the terms and conditions of each subcontract), shall be filed promptly with the Engineer upon the Engineer's request. Each subcontract shall contain a reference to the contract between the City and the Contractor, and the terms of that contact shall be made a part of each subcontract insofar as applicable to the work covered thereby. Each subcontract shall provide for annulment of same by the Contractor upon written order of the Engineer if, in the Engineer's opinion, the Subcontractor fails to comply with the requirements of the prime contract insofar as the same may be applicable to this work.

(e) The Contractor shall be responsible to the City for the acts and omissions of his Subcontractors and their employees to the and same extent as he is responsible for the acts and omissions of his own employees. Nothing contained in this section shall create any contractual relationship between any Subcontractor and the City or Engineer or relieve the Contractor of any liability or obligation under the prime contract.

(f) The Contractor shall be permitted to rent equipment maintained and operated as long as the work performed is directed and constantly supervised by the Contractor. Any other arrangement will be construed as unauthorized subcontracting and such action will be subject to contract termination.

3.08 CONTRACTOR'S EMPLOYEES AND SUBCONTRACTORS

The Contractor shall at all times be responsible for the adequacy, efficiency and sufficiency of his employees and any Subcontractor or persons employed by the Subcontractor. All workmen must have sufficient knowledge, skill and experience to perform properly the work assigned to them.

3.09 ATTENTION TO WORK

The Contractor shall supervise the work and at all times shall be represented by a competent superintendent who shall receive and obey all instructions or orders given under the contract, and who shall have full authority to execute the same, and to supply materials, tools and labor without delay, and who shall be the legal representative of the Contractor.

3.10 SERVICE OF NOTICES

Any notice, order, direction, request or other communication given by the City to the Contractor under the contract shall be deemed to be well and sufficiently given to the Contractor if left at any office used by the Contractor, or delivered to any of his officers, or mailed in any post office addressed to the Contractor at the address mentioned in the contract, or at the Contractor's last known place of business. If mailed it shall be deemed to have been given to and received by the Contractor two days after the day of mailing in any post office in the vicinity of the work.

3.11 DEVIATION FROM CONTRACT

The Contractor shall not make any alteration or variation in or addition to or deviation or omission from the contract without the advance written consent of the City.

3.12 SUSPENSION OF WORK

The Engineer acting on behalf of the City may, by written notice to the Contractor, suspend the work, in whole or in part, for such period or periods as he may deem necessary due to unsuitable weather, delay in delivery of City-furnished equipment or materials, or such other conditions as are considered unfavorable for prosecution of the work, or failure on the part of the Contractor to carry out the provisions of the contract or to provide material or workmanship meeting the requirements of the specifications. Suspended work shall be resumed by the Contractor within a reasonable time, as designated by the Engineer, after receipt from the Engineer of written notice to proceed. Contractor shall not be entitled to receive extra or additional compensation, except as may otherwise be provided for explicitly in the Contract Documents, on account of suspension of work pursuant hereto.

3.13 TERMINATION OF CONTRACT BY CITY (CONTRACTOR NOT AT FAULT)

The City may terminate the contract upon 10 calendar days written notice to the Contractor, if it is found that reasons beyond the control of either the City or Contractor make it impossible or against the City's interests to complete the work. In such a case, the Contractor shall have no claims against the City except (1) for the value of work performed up to the date the contract is terminated, and (2) for the cost of materials and equipment on hand, in transit, or on definite commitment as of the date the contract is terminated, which would be needed in the work and which meet the requirements of the specifications. The value of work performed and the cost of materials and equipment delivered to the site, as mentioned above, shall be determined by the Engineer in accordance with the procedure prescribed for the making of the final estimate and payment and shall be paid in accordance with the same procedure.

3.14 TERMINATION OF CONTRACT BY CITY (CONTRACTOR AT FAULT)

(a) The City may terminate the contract upon 10-calendar days written notice to the Contractor in the event of any default by the Contractor. Without limitation, it shall be considered a default by the Contractor whenever he shall (1) declare bankruptcy, become insolvent or assign his assets for the benefit of his creditors (2) disregard or violate important provisions of the contract documents or Engineer's instruction or fail to prosecute the work according to the approved schedule or (3) fail to provide a qualified superintendent, competent workers or Subcontractors, or materials or equipment meeting the requirements of the specifications and drawings.

(b) In the event the contract is terminated, the City may take possession of the work and of all materials, tools, equipment and property of the Contractor which have been provided in connection with the work and may complete the work by whatever method or means he may select. The cost of completing the work shall be deducted from the balance which would have been due the Contractor had the contract not been terminated and the work completed in accordance with the specifications and drawings. If such cost exceeds the balance which would have been due, the Contractor shall pay the excess amount to the City. If such cost is less than the balance which would have been due, the Contractor shall have no claim to the difference except to such extent as may be necessary, in the opinion of the Engineer, to reimburse the Contractor or the Contractor's sureties for any expense properly incurred for materials, tools, equipment, property and labor devoted to the prosecution of the work, of which the City shall have received the benefit. In computing such expense, as it relates to equipment and property, the salvage value at completion of the work shall be deducted from the depreciated value at the time the contract was terminated and the difference shall be considered as an expense.

3.15 TERMINATION OF CONTRACT BY CONTRACTOR

The Contractor may terminate the contract upon 10 calendar days written notice to the City whenever (1) the entire work has been suspended in accordance with Section 3.12, for 60 consecutive calendar days through no fault or negligence of the Contractor and notice to resume work or to terminate the contract has not been received from the City within this time period or (2) the City shall fail to pay the Contractor any substantial sums due him in accordance with the terms of the contract and within the time limits prescribed. In the event of such termination, the Contractor shall have no claims against the City except for those claims specifically enumerated in Section 3.13 and determined in accordance with that Section.

3.16 FAILURE TO COMPLY

If the Contractor should refuse or neglect to comply with the provisions of the contract or the orders of the Engineer, the City may have such provisions or orders carried out by others at the expense of the Contractor.

3.17 PROTESTS

If the Contractor considers any work demanded of him to be outside the requirements of the contract, or if he considers any order or ruling of the Engineer or of any inspector to be unfair, he shall, immediately upon such work being demanded or such order or ruling being made, ask for written instructions or decision, whereupon he shall proceed without delay to perform the work or to conform to the order or ruling; but unless the Contractor finds such instructions or decisions satisfactory, he shall, within five (5) days after receipt of same, file a written protest with the Engineer, stating clearly and in detail his objections and the reasons therefor. The Engineer shall, as soon as practicable after receipt of such written protest from the Contractor, forward said protest through appropriate channels to the City including his written comments on the issue or issues involved. The decision of the City on all such matters shall be considered final and binding upon all parties concerned. Except for such grounds for protests or objections as are made of record in the manner specified and within the time stated herein, the Contractor hereby waives all ground for protests or objections to the orders, rulings, instructions or decisions of the Engineer and hereby agrees that, as to all matters not included in such protest, the order, instructions and decisions of the Engineer shall be final and conclusive.

3.18 RIGHTS-OF-WAY

(a) Lands or rights-of-way for the work to be constructed under the contract will be provided by the City as shown on the drawings. Nothing contained in the specifications or drawing shall be interpreted as giving the Contractor exclusive occupancy of the lands or rights-of-way provided. Any additional lands or rights-of-way required for construction operations shall be provided by the Contractor at his own expense.

(b) Except as may otherwise be provided, the Contractor shall secure from the agencies having jurisdiction the necessary permits to create obstructions, to make excavations if required under the contract and to otherwise encroach upon rights-of-way and shall present evidence to the Engineer that such permission has been granted before work is commenced. Regulations and requirements of all agencies concerned shall be strictly adhered to in the performance of this contract, including the furnishing of insurance and bonds if required by such agencies. The enforcement of such requirements under this contract shall not be made the basis for claims for additional compensation.

(c) The Contractor shall not do any work that would affect any oil, gas, sewer, or water pipeline, any telephone, telegraph, or electric transmission line, fence, or

any other structure, nor enter upon the rights-of-way involved until notified by the Engineer that the City has secured authority therefor from the proper party. After authority has been obtained, the Contractor shall give said party due notice of his intention to begin work and shall give said party convenient access and every facility for removing, shoring, supporting, or otherwise protecting such pipeline, transmission line, ditch, fence or structure and for replacing same. The Contractor shall not be entitled to any extension of time or extra compensation on account of any postponement, interference, or delay caused by any such pipeline, transmission line, fence or structure being on the line of the work except as provided herein.

3.19 CONSTRUCTION INTERFERENCE

(a) As used in this section, the word "utility" shall be understood to include tracks, overhead or underground wires, cables, pipelines, conduits, ducts, sewers or storm drains. The term "service connection" shall be understood to mean all or any portion of a pipeline (including sewer house laterals) conduit wire cable or duct including meter between utility distribution line and an individual customer or customer when served by a single service connection. The term “construction interference” shall be understood to include any utility or service connection within the limits of excavation or over-excavation required for the work under the contract as shown or ordered by the Engineer or any utility or service connection located in the space which will be required by any of the work under the contract.

(b) In the event of any utility or service connection is required to be disturbed or removed to permit construction of a pipeline or other structure under the contract, such disturbance or removal shall be done only with the approval of the Engineer and following notification to the owner of the interfering utility or service connection. Any such utility or service connection removed or otherwise disturbed shall be reconstructed as promptly as possible in its original or other authorized location in a condition at least as good as prior to such removal or disturbance, subject to the inspection of the owner of same. The Contractor's responsibility under this section to remove or replace shall apply even in the event such damage or destruction occurs after backfilling or is not discovered until after completion of backfilling. The owner of the utility or service connection shall be notified immediately after damage or destruction occurs or is discovered.

(c) During the performance of the work under this contract, the owner of any utility affected by the work shall have the right to enter when necessary, upon any portion of the work for the purpose of maintaining service and to make repairs to said utility.

(d) The drawings show the approximate positions of known utilities in the immediate vicinity of the work but the City does not guarantee that all existing utilities are shown. Service connections normally are not shown on the drawings. The Contractor, before commencing any excavation, shall ascertain from records or otherwise, the existence, horizontal and vertical position and ownership of all existing utilities and service connections. If the Contractor discovers any utility in the line of the work which is not shown on the drawings, he shall immediately notify the Engineer of the existence of same. The City will not be liable for any consequences arising as a result of a service connection being incorrectly located in the field by the agency having jurisdiction over said service connection.

(e) All costs involved in removing, relocating, protecting, supporting, repairing, maintaining or replacing a main or truckline utility which actually constitutes a construction interference when said utility is not shown with reasonable accuracy as an interference or is omitted from the drawings, will be paid for by the City as extra work.

In such case, the City also will compensate the Contractor for equipment on the project necessarily idled during and by reason of such work. The City's obligation to repair damage to such a facility and to compensate the Contractor for idled equipment shall not extend to damage resulting from the failure of the Contractor to use reasonable care.

(f) All costs involved in removing, relocating, protecting, supporting, repairing, maintaining or replacing any utility or service connection other than those described in Subsection (e) herein shall be borne by the Contractor.

(g) The Contractor shall not be assessed liquidated damages for failure to complete the work on time to the extent that such delay was caused by failure of the City or of the agency having jurisdiction over the utility or service connection to authorize or otherwise provide for its removal, relocation, protection, support, repair, maintenance or replacement.

(h) The City reserves the right, upon determination of the actual position of existing utilities and service connection, to order changes in alignment or grade of the City's pipelines when, by so doing, the necessity for relocation of existing utilities or service connections will be avoided. Such changes will be ordered in writing by the Engineer. Where applicable, adjustment in the contract price will be on the basis of the unit prices stated in the proposal. Where unit prices in the proposal are not applicable, adjustment in contract price will be in accordance with Section 3.04.

3.20 LINES AND GRADES

(a) All surveying necessary and adequate for construction purposes will be done by the City or as modified in the Special Provisions.

(b) Grades for all pipelines will be set on the surface of the ground and the Contractor shall transfer them to the bottom of the trench. At no time shall less than three (3) consecutive grade points be used in common so that any variation from a straight grade can be detected. Any such variation shall be reported to the City Engineer and in the absence of such report, the Contractor shall be responsible for any error in the grade of the finished work.

(c) The Contractor shall preserve all bench marks, stakes and other survey marks, and in case of their removal or destruction by his own employees or by his Subcontractor's employees, he shall be liable for the cost of their replacement.

3.21 SUPERVISION AND INSPECTION

(a) The City Engineer shall decide within the provisions of the specifications all questions which may arise concerning the quality or acceptance of materials furnished and work performed and all questions concerning the acceptable fulfillment of the contract by the Contractor.

(b) All work shall be done in a thorough and workmanlike manner under the direction and to the satisfaction of the City Engineer, and the materials used shall comply with these specifications. Work shall be started and continued at such time and at such points as may be designated by the City Engineer and shall be carried on diligently and without unnecessary delay.

(c) Each day the Contractor shall furnish the City Engineer a duplicate copy of all delivery and shipment tags or slips for all materials delivered on the work. Tags or slips shall show the actual quantity of material received on the work. No materials shall be used on the work until such tags or slips have been furnished to the City Engineer.

(d) All tests of materials shall be made under the direction of the City Engineer. The costs of tests for materials shall be borne by the City. At the Contractor's own expense, the materials for testing shall be delivered at the time and to the place designated by the City Engineer. Should the materials fail, the retesting cost shall be borne by the Contractor.

(e) The Contractor shall prosecute work only in the presence of the City Engineer or his designated representative, and any work done in the absence of said City

Engineer or his designated representative shall be subject to rejection for that reason. The Contractor shall give written notice to the City Engineer at least 24 hours before beginning any work and shall furnish said City Engineer all reasonable facilities for obtaining full information respecting the progress and manner of work.

(f) Any day except Sundays, or legal holidays and days on which the Contractor is specifically required by the specifications, by his labor contract, or by law to suspend construction operations, or conditions resulting therefrom, from preceding with at least 75 percent of the normal labor and equipment force for at least five (5) hours toward completion of the current controlling operation shall be considered as a normal work day.

3.22 OBSERVING LAWS AND ORDINANCES

(a) The Contractor shall keep himself fully informed of all Federal, State and local laws, ordinances and regulations which may affect the conduct of the work, those engaged or employed by him, the materials used, and all orders and decrees of bodies or tribunals having any jurisdiction or authority over the work. The Contractor shall observe and comply therewith, and shall protect and indemnify the City against any claim or liability arising from or based on the violation thereof.

(b) The Contractor shall secure and pay for all necessary permits, licenses and make all necessary deposits before starting work.

3.23 COORDINATION WITH COMMUNITY AGENCIES

(a) The Contractor shall notify the City of La Verne Police Department, Fire Department and refuse Contractor of any construction causing street closure forty-eight (48) hours prior to start of such closure.

City of La Verne
Police Department
909-596-1913

City of La Verne
Fire Department
909-596-5991

Waste Management
Refuse Collection
909-599-4120

(b) The CONTRACTOR shall provide two (2) notices to residents and businesses on affected streets. The first notice shall be in the form of a letter prepared by the Contractor and approved by the City and distributed by the CONTRACTOR no later than seven (10) calendar days before the start of construction. The second notice shall be distributed no later than 72 hours prior to work commencing on the residents' street.

3.24 FIRE HYDRANTS

(a) Free access shall be provided to all fire hydrants at all times. The Contractor shall not draw any water from a fire hydrant for use on the work, other than for extinguishing fire, without first obtaining permission from the Public Works Director and the owner of such water.

(b) Whenever required by the Public Works Director, the Contractor shall obtain a City of La Verne fire hydrant meter to record water usage. A deposit as established by Public Works Director shall be paid by Contractor and refunded upon return of said hydrant meter. The water usage fees shall be as set forth in the Special Provisions.

3.25 LOSS AND DAMAGE

(a) All loss or damage to the City or to third persons, occurring during the progress of the work being performed under this contract, which loss or damage occurs before acceptance of the work by the City and which results from (1) the negligence of the Contractor, or Contractor's agents or employees, or (2) any act or omission on the part of the Contractor or Contractor's agent or employees which is not authorized by these specifications shall be sustained and borne by the Contractor.

(b) Excavation shall be braced so that they will be safe and the ground alongside the excavations will not slide or settle, and all existing improvements of any kind, either on public or private property, shall be fully protected from damage. If any damage does result, the necessary repairs as directed by the City Engineer, shall be made by and at the expense of the Contractor.

(c) Performance under this contract by the Contractor shall not be excused by any unforeseen obstruction or difficulties which may be encountered, including damage to or destruction of the project under construction by action of the elements or otherwise.

3.26 USE OF IMPROVEMENT DURING PROGRESS OF CONSTRUCTION

At any time during the progress of work, the City Engineer may, upon written notice to the Contractor, takeover and utilize the whole or any part of the improvement or appurtenance

thereto which has been completed, giving if desired, permits to utilize same. Such uses by the City Engineer shall constitute a limited acceptance of that part of the improvement so taken over and utilized which shall relieve the Contractor and Contractor's sureties from responsibility for any damage to or defect in that part of the improvement not inherent in the construction which may be caused by the use of such part by the City or by property owners.

3.27 ALTERNATIVE METHODS OF CONSTRUCTION

Whenever certain of the plans and specifications provide that more than one specified method of construction or more than one specified type of construction equipment may be used to perform portions of the work and leave the selection of the method of construction or the type of equipment to be used up to the Contractor, it is understood that the City does not guarantee that every such method of construction or type of equipment can be successfully used throughout all or any part of any project. It shall be the Contractor's responsibility to select and use the alternative(s) which will satisfactorily perform the work under the conditions encountered. In the event some of the alternatives are not feasible or it is necessary to sue more than one of the alternatives on the project, full compensation for any additional cost involved shall be considered as included in the contract price paid for the item of work involved and no additional compensation will be allowed therefore.

3.28 EXAMINATION OF WORK

(a) Bidders must examine the location, physical conditions and surroundings of the proposed work and judge for themselves the nature of the excavation to be made and the work to be done.

(b) The plans for the work shown conditions as they are supposed or believed by the City Engineer to exist, but it is not intended or to be inferred that the conditions as shown thereon constitute a representation or warranty, express or implied, by the City or its officers, that such conditions are actually existent, nor shall the Contractor be relieved or the liability under this contract, nor the City or any of its officers be liable for any loss sustained by the Contractor as a result of any variance between conditions as shown on the plans and the actual conditions revealed during the progress of the work or otherwise.

(c) The submission of the bid proposal shall be conclusive evidence that the bidder has satisfied himself through his own investigation as to the conditions to be encountered; the character, quality and quantity of work to be performed; materials and equipment to be furnished; and all requirements of the drawings, special provisions and technical specifications.

SECTION 4 - MATERIAL, EQUIPMENT AND WORKMANSHIP

4.01 QUALITY

(a) Material and equipment shall be new and of the quality specified. All work shall be executed in conformity with the best accepted standard practice of the trade so as to contribute to maximum efficiency of operation, accessibility and appearance, and minimum cost of maintenance and construction of future alterations and additions.

(b) Whenever the Contractor shall furnish materials or manufactured articles or shall do work for which no detailed specifications are set forth, the materials or manufactured articles shall be of the best grade in quality and workmanship obtainable in the market from firms of established good reputation or, if not ordinarily carried in stock, shall conform to the usual standards for first-class materials or articles of the kind required with due consideration of the use to which they are to be put. In general, the work performed shall in full conformity and harmony with the intent to secure the best standard of construction and equipment of the work as a whole or in part.

4.02 SAMPLES AND TESTS OF MATERIAL

(a) Samples of materials to be supplied by the Contractor shall be prepared and submitted for checking, if required by the specifications or the Engineer. The samples or test specimens shall be prepared and furnished with information as to their source in such quantities and sizes as may be required, with all freight and charges prepaid.

(b) All samples shall be submitted before shipment of the material to the site of the work and in ample time to permit the making of proper tests, analyses, examinations, rejections and resubmissions before the time at which it is desired to incorporate the material into the work. All tests of materials furnished by the Contractor will be made by the Engineer in accordance with recognized standard practice. No such materials shall be used in the work unless or until they have been accepted in writing by the Engineer and samples of materials will be retained by the Engineer for reference and comparison purposes.

(c) The cost of material inspection and testing in the vicinity of the work unless specified otherwise herein, will be borne by the City. If the inspection and testing of material in the vicinity of the work is not practicable, the Contractor may request such inspection and testing take place at the point of manufacture. In such an event the additional cost to the City of remote inspection and testing shall be paid for by the Contractor. Such additional costs will consist of reimbursement for travel time and expense to and from the remote point.

4.03 PROOF OF COMPLIANCE WITH CONTRACT

In order that the Engineer may determine whether the Contractor has complied with the requirements of the contract documents not readily determinable through inspection and tests of plant, equipment, work or materials, the Contractor shall, at any time when requested, submit to the Engineer properly authenticated documents or other satisfactory proof as to his compliance with such requirements.

4.04 SAFEGUARDING OF EQUIPMENT, MATERIAL AND WORK

The Contractor shall properly safeguard all equipment, material and work against loss, damage, malicious mischief or tampering by unauthorized persons until acceptance of the work by the City. Locked and covered storage or continuous surveillance by a watchman shall be provided if required to accomplish this purpose.

4.05 DEFECTIVE MATERIAL, EQUIPMENT AND WORKMANSHIP

(a) Inspection of the work shall not relieve the Contractor of any of his obligations under the contract. Even though equipment, material or work required to be provided under the contract have been inspected, accepted and estimated for payment, the Contractor shall, at his own expense, replace or repair any such equipment, material or work found to be defective or otherwise not to comply with the requirements of the contract up to the end of the maintenance and guarantee period.

(b) Any equipment or material brought upon the job site by the Contractor and subsequently rejected by the Engineer as not complying with the requirements of the contract shall be removed immediately by the Contractor.

(c) If the Contractor shall fail to repair or replace unsatisfactory equipment, material or work or to remove unsatisfactory equipment or material from the job site within 10 calendar days after being ordered to do so by the Engineer, the Engineer, acting on behalf of the City, may make the ordered repairs or remove the condemned equipment or material and the City will deduct the cost thereof from any moneys due or to become due the Contractor.

4.06 CHARACTER OF WORKERS

None but skilled workers shall be employed on work requiring special qualifications. When required in writing by the Engineer, the Contractor or any Subcontractor shall discharge any person who is, in the opinion of the Engineer, incompetent, unfaithful, disorderly or otherwise unsatisfactory and shall not again employ such discharged person on the work except with the consent of the Engineer. Such discharge shall not be the basis of any claim for compensation or damages against the City or any of its officers.

4.07 RUBBISH AND DUST CONTROL

(a) During the progress of the work, the Contractor shall keep the site of the work and other areas used by him in a neat and clean condition and free from any accumulation of rubbish.

(b) The Contractor shall at all times conduct his work so as to avoid unnecessary dust. He shall provide adequate equipment and water as determined by the Engineer to be necessary for accomplishment of this objective.

4.08 CLEANING UP

The Contractor shall promptly remove from the vicinity of the completed work, all rubbish, unused material, concrete forms, equipment and temporary structures used during construction. Additional clean-up work, if provided in the Special Provisions, shall be performed by the Contractor.

4.09 GUARANTEE

(a) Besides guarantees required elsewhere in these contract documents, the Contractor shall and hereby does guarantee all work for a period of one (1) year after the date of acceptance of the work by the City and shall repair and replace any and all such work, together with any other work which may be displaced, that may prove defective in workmanship and/or materials within the one (1) year period from the date of acceptance, without expense whatsoever to the City, ordinary wear and tear and usual abuse or neglect excepted. In the event of failure to comply with the above mentioned conditions within seven (7) days after being notified in writing, or in the event of an emergency, the City is hereby authorized to proceed to have the defects repaired and make good at the expense of the Contractor, who hereby agrees to pay the cost and charges therefore immediately on demand.

(b) The Contractor hereby guarantees that the entire work constructed by him under this contract will meet fully all requirements thereof as to quality of workmanship and of materials furnished by him. The Contractor hereby agrees to make at his own expense any repairs or replacements made necessary by defects in materials or workmanship supplied by him that becomes evident within the time specified in the Special Provisions after filing the notice of completion of the work by the Engineer, and to restore to full compliance with the requirements of these specifications, including the test requirements set forth herein for any part of the work constructed hereunder, which during said period is found to be deficient with respect to any provision of the specifications. The Contractor also agrees to hold the City harmless from claims of any kind arising from damage due to said defects. The Contractor shall make all repairs and replacements promptly upon receipt of written orders for same from the Engineer. If the Contractor fails to make the repairs and replacements promptly, the City may do the work and the Contractor and his surety shall be liable to the City for the cost of such work.

(c) Upon termination of the Contractor's guarantee any manufacturer's guarantees or warranties held by him shall be delivered to the City.

(d) The guarantees and agreements set forth hereinbefore shall be secured by a surety bond which shall be delivered by the Contractor to the City before the notice of completion shall be filed by the Engineer. Said bond shall be in an approved form and executed by a surety company or companies satisfactory to the City, in the amount of ten percent of the contract price. Said bond shall remain in force for the period specified in the Special Provisions. Instead of providing a surety bond, the Contractor may, at his option, provide for the Faithful Performance Bond furnished under the contract to remain in force for said amount until the expiration of the required period.

SECTION 5 - PROGRESS AND PAYMENT

5.01 CONTRACT TIME

(a) Time is of the essence of the contract. The Contractor shall commence work promptly under the contract and all portions of the work shall be prosecuted so that the entire work shall be completed and ready for use within the time stipulated.

(b) The Contractor may contact the Engineer prior to bid opening with concerns regarding contract time allowed to initiate a re-evaluation. Any adjustments to time allowed will be made prior to bid opening and all decisions are final. All other time extension will be per Section 5.05 of the General Conditions.

5.02 CONTRACT PRICE

Prior to commencement of the work, the Contractor shall submit a detailed price breakdown of any or all of his bid items for the work contained in lump sum items. Such price breakdown shall include quantities, unit prices, and any other information required in sufficient detail to enable it to be used in preparing monthly progress estimates.

5.03 CONSTRUCTION SCHEDULE

Within 15 calendar days after award of the contract, or at such times as may be required by the Engineer, the Contractor shall submit a construction schedule showing the order in which he proposes to carry on the work and the dates when the various parts are to be begun and completed. Such schedule shall take into consideration coordination with other work activities reasonably expected to take place on site while Contractor is performing its work. The schedule shall be subject to the approval of the Engineer and if in his opinion a schedule submitted is inadequate to secure the completion of the work in the time agreed upon, or is otherwise not in accordance with the specifications, he may require the Contractor to submit a new schedule which will insure timely completion of the work.

5.04 OVERTIME WORK

Except as otherwise provided in this Section, the Contractor shall receive no additional compensation for overtime work even though such overtime work may be required under emergency conditions and may be ordered by the Engineer in writing. Additional compensation will be paid the Contractor for overtime work only in the event extra work is ordered by the Engineer and the change order specifically authorizes the use of overtime work, and then only to such extent as overtime wages are regularly being paid by the Contractor for overtime work of a similar nature in the same locality.

5.05 EXTENSION OF TIME

(a) The Contractor may be entitled to an extension of contract time (1) if the work has been suspended by the City, in whole or in part; or (2) where weather or other circumstances occur which delay progress and which are clearly beyond the control of the Contractor; provided that, in either case, the Contractor is not at fault and is not negligent under the terms of the contract. The extension of time allowed shall be as determined by the Engineer.

(b) To receive consideration, a request for extension of time must be made in writing to the Engineer stating the reason for said request, and provide a schedule analysis outlining the delay to the critical path of the project. Such request must be received by the Engineer within 7 days following the beginning of the delay-causing condition.

(c) Contractor shall make provision for fifteen (15) calendar days of weather impact to the work contracted for.

5.06 FAILURE TO COMPLETE ON TIME

(a) The Contractor shall pay liquidated damages to the City in the amount specified in these General Conditions if he fails to complete the work within the time agreed upon. The period for which said damages shall be paid shall be the number of calendar days from the agreed date of completion as contained in the contract, or from the date of termination of any extension of time approved by the Engineer, to the date the Engineer certifies completion of work to the City. The City may impose liquidated damages to the Contractor for delays by the fault of the Contractor to any single and or a group of activities on the critical path of the project whether or not the activity(ies) is/are part of the work performed by the Contractor. The City may deduct the amount of said damages from any moneys due or to become due the Contractor.

(b) The said amount is fixed and agreed upon by and between the Contractor and the City because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the City would sustain. Said amount is agreed to be the amount of damages which the City would sustain.

5.07 MONTHLY ESTIMATES AND PAYMENTS

(a) On or about the 25th of each month, the Engineer will prepare and certify to the City, an estimate of the cumulative amount and value of work projected through

the end of each respective month. All payments will be paid within 30 days from receipt of all documents required for the Engineer to approve the estimate. Except as may otherwise be provided in the Special Provisions, said amount will include 80 percent of the value of all acceptable materials and equipment delivered to the site of the work. Said value will be based on certified copies of paid invoices delivered by the Contractor to the Engineer. To this figure will be added all amounts due or paid the Contractor for performance of extra work in accordance with change orders. From the total computed above, a deduction of 5 percent will be made. Further deductions will be made for: (1) amounts due the City for equipment or materials furnished or services rendered; (2) amounts due the City under the terms of the contract; (3) amounts of any claims of lien filed with the City in accordance with Section 6.02(b), and (4) amounts required to be deducted by federal, state or local governmental authority. From the balance thus determined will be deducted the amount of all previous payments and the remainder shall constitute the monthly payment due the Contractor. The third paragraph of section 7-3.2 of the Standard Specifications for Public Works Construction is hereby deleted.

(b) The Contractor may elect to receive 100 percent of payments due under the contract from time to time, without retention of any portion of the payment by the City, by depositing securities of equivalent value with the City in accordance with the provisions of Section 22300 of the Public Contracts Code. Such securities, if deposited by the Contractor, shall be valued by the City, whose decision on valuation of the securities shall be final.

(c) The Engineer's estimate of the monthly payment due the Contractor will not be required to be made by strict measurement and an approximation will suffice. The monthly payments may be withheld or reduced if, in the Engineer's opinion, the Contractor is not diligently or efficiently endeavoring to comply with the intent of the contract or if the Contractor fails to pay his labor and material bills as they become due.

(d) The Contractor shall furnish the Engineer promptly, upon request, all information and records necessary to determine the cost of the work for purposes of estimating monthly payments, including an itemized statement, in a form satisfactory to the Engineer, of the actual cost of all acceptable materials delivered by the Contractor to the site.

(e) No monthly payment shall be construed as an acceptance of the work or of any portion of the work, nor shall the making of such payment preclude the City from

demanding and recovering from the Contractor such damages as it may sustain by reason of the Contractor's failure to comply with the requirements of the contract.

(f) In the event the contract is terminated, any funds due the Contractor and retained by the City shall become the property of the City to the extent necessary to repay to the City any excess in the contract price above the cost of the work completed at the time of termination. After issuance of notice to discontinue work, no further payment will be made to the Contractor for the work covered by the notice until completion of the work and final settlement has been made.

5.08 UNPAID CLAIMS

If, upon or before completion of the work, or at any time prior to expiration of the period within which claims of lien of stop notices may be filed for record, any person claiming to have performed any labor or to have furnished any materials, supplies or services toward the performance of this contract, or to have agreed to do so, shall file with the City a verified statement of such claim stating in general terms the kind of labor and materials, the value of same and the name of the person to or from whom the same was furnished, together with a statement that the same has not been paid; or if any person shall bring against the City or any of its agents any action to enforce such claim or stop notice, the City will, until the action is settled, withhold from moneys due to the Contractor an amount sufficient to satisfy the decision of the court together with costs. Dispute resolution for any claim filed in an amount of less than $375,000 shall be subject to the terms outlined in Public Contract Code Section 20104.

5.09 FULFILLMENT OF CONTRACT

The Contractor shall protect and care for all work until the contract has been fulfilled to the satisfaction of the City Engineer, and subsequent acceptance of the work by the City Council.

The Contractor shall remove all rubbish, excess earth and rock, leaving the site in a neat, orderly and presentable condition before the City Engineer makes final inspection of the work to determine the fulfillment of the contract.

5.10 FINAL ESTIMATE OF PAYMENT

(a) When the Engineer is of the opinion that the Contractor has completely performed all work required under the contract, he shall certify to the City that the work is complete and shall submit to the Contractor a draft of the final estimate. The Contractor shall submit his written approval of said final estimate within five calendar days after receipt, or, in the event the Contractor disagrees with said final estimate, he shall, within said five day period, file a written statement of all claims which he intends to present. If the Contractor delays more than five calendar days in approving said final estimate or in presenting his own claims, the time for payment shall be extended by the period of such delay.

(b) After acceptance of the work by the City Council and 30 calendar days after recording of the notice of completion, the City will pay to the Contractor the amount remaining after deducting all prior payments and all amounts to be kept or retained under the provisions of the contract. In the event acceptance of the work is delayed more than 30 calendar days beyond the date of the last partial payment under the contract, the City will make a further partial payment in accordance with Section 5.07.

(c) If the Contractor disagrees with the Engineer's final estimate and files a written statement of his claims, the Engineer will issue, as a semi-final estimate, the proposed estimate submitted to the Contractor, and the City will make payment to the Contractor in accordance with the provisions of Subsection 5.10(b). The Engineer then will investigate the Contractor's claims, make any revisions to said semi-final estimate as he deems appropriate and certify in writing to the City the amount and value of the work performed by the Contractor. The City then will make final payment to the Contractor in accordance with the provisions of Subsection 5.10(b).

5.11 FINAL PAYMENT TERMINATES LIABILITY OF CITY

The acceptance by the Contractor of the final payment shall be a release of the City and its agents from all claims of and liability to the Contractor for anything done or furnished for, or relating to, the work or for any act or neglect of the City or of any person relating to or affecting the work.

5.12 NOTICE OF COMPLETION

As required by the California Civil Code Section 3093, and within ten calendar days after date of acceptance of the work by the City's governing body, the City will file, in the County Recorder's Office, a Notice of Completion of the work.

5.13 EXTRA WORK

(a) If, during the performance of the contract, it shall, in the opinion of the City Engineer, become necessary or desirable for the proper completion of the contract to order work done or materials or equipment furnished which, in the opinion of the City Engineer, are not susceptible of classification under the bid items, the Contractor shall do and perform such work and furnish such materials and equipment as "extra work". All extra work shall be ordered in writing before it is started.

(b) Extra work will ordinarily be paid for at a lump sum or unit price agreed upon in writing by the City Engineer and the Contractor before the extra work shall be ordered.

(c) Extra work and materials furnished by the Contractor may be paid for at actual necessary costs of materials, supplies, labor, Federal Social Security taxes, State

Unemployment Insurance contributions, Worker's Compensation Insurance, plus fifteen percent (15%) to cover profit and all other expenses.

5.14 ADDITIONAL WORK

If it shall be necessary, in the judgment of the City Engineer and because of conditions disclosed after a partial performance of the work which did not appear and could not with reasonable diligence and cost be ascertained in advance or in any contingency which reasonable care and consideration could not foresee, to drive piles, make additional excavations and backfills, furnish and place additional labor, concrete reinforcement for pipes, reinforcing steel, special pipe joints, ductile iron pipe, ductile iron soil pipe, reinforcing materials of any nature, cement, or other materials, or to place a cradle to support the pipe laid, or fill the trench with good earth, sand, crushed stone or gravel because of a soft, wet or spongy condition in the bottom of said trench rendering it unsatisfactory as a bed for the pipe, said additional work and materials required by said City Engineer shall be furnished and performed by the Contractor and shall be paid for under the contract at the unit prices set forth in said contract provided that this shall apply only where unit prices for additional work are included in the proposal.

5.15 INVESTMENT OF AMOUNTS WITHHELD

At the request and at the expense of Contractor, amounts withheld under this contract, pending satisfactory completion of it, shall be invested by the City in certificates of deposit or other securities, in accordance with Section 22300 of the Public Contracts Code.

SECTION 6 - LEGAL RESPONSIBILITY, SAFETY, BONDS AND INSURANCE

6.01 RESPONSIBILITY OF CONTRACTOR

(a) The work shall be under the Contractor's responsible care and charge. The Contractor shall bear all loss and damage whatsoever and from whatever cause, except that caused solely and exclusively by the fault or negligence of the City which may occur on or to the work during the fulfillment of the contract. If any loss or damage occurs, the Contractor shall immediately make good any such loss or damage and in the event of the Contractor refusing or neglecting so to do, the City may itself or by the employment of some other person make good any such loss or damage and the cost and expense of so doing shall be charged to the Contractor.

(b) The Contractor alone shall at all times be responsible for the safety of his and his Subcontractor's employees and for his and his Subcontractor's plant and equipment and the method of prosecuting the work.

(c) The Contractor and subcontractors working in the City of La Verne must retain records pertaining to said project for a minimum of five (5) years. Record to be retained include but not limited to documents regarding payroll, change orders, field directives, as-built plans, etc.

6.02 LIABILITY OF CONTRACTOR

(a) The Contractor shall be liable for all damages and injury which shall be caused to City of property on or in the vicinity of the work or which shall occur to any person or persons or property whatsoever arising out of the performance of this contract, whether or not such damage or injury be caused by the negligence of the Contractor and whether or not such damage or injury by caused by the inherent nature of the work as specified. This provision shall not be interpreted to require indemnification from the Contractors for the active negligence of the public agency.

(d) In case any suit or legal proceedings shall be brought against the City or the Engineer or any of their officers, agents or employees on account of loss or damage sustained by any person or property as a result of the performance of the work covered by this contract, whether or not such injuries or damage be due to the negligence of the Contractor and whether or not such injuries or damage be caused by the inherent nature of the work as specified, the Contractor agrees to assume the defense thereof and to pay all expenses connected therewith including reasonable attorney's fees and any judgment that may be obtained against the City or the Engineer or any of their officers, agents or employees in such suits, and in

the event that any lien is placed upon the property of the City or the Engineer or any of their officers, agents or employees, as result of such suits, the Contractor agrees to at once cause the same to be dissolved and discharges by giving bond or otherwise. This provision shall not be interpreted to require indemnification from the Contractor for the active negligence of the public agency.

6.03 LAWS, REGULATIONS AND PERMITS

(a) The Contractor shall give all notices required by law and comply with all laws, ordinances, rules and regulations pertaining to the conduct of the work. The Contractor shall be liable for all violations of the law in connection with work furnished by the Contractor. If the Contractor observes that the drawings or specifications are at variance with any law, ordinance, rule or regulation, he shall promptly notify the Engineer in writing and any necessary changes shall be made by instruction or change order. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations and without giving such notice to the Engineer, the Contractor shall bear all cost arising therefrom.

(b) Unless otherwise specified herein, permits and licenses which are necessary only for and during the prosecution of the work and the subsequent guaranty period thereafter shall be secured and paid for by the Contractor while those permits and licenses of regulatory agencies which are necessary to be maintained after the completion of the guaranty period of the contract will be secured and paid for by the City.

6.04 PATENTS AND COPYRIGHTS

The Contractor shall hold harmless, indemnify and defend the City and Engineer, their officers, agents and employees against all claims of liability arising from the use of any patented or copyrighted design, device, material or process, furnished, or used by him or any of his Subcontractors in the performance of the work.

6.05 PERMITS AND LICENSES

Unless otherwise provided in the Special Provisions, the Contractor shall obtain at this own expense all permits and licenses required for prosecution of the work and shall pay all taxes properly assessed against his equipment or property used in connection with the work. Contractor shall obtain a City of La Verne's Business License.

6.06 SALES AND USE TAXES

The Contractor shall pay all sales and use taxes assessed by federal, state or local authorities on materials furnished by the Contractor in the performance of the work.

6.07 LABOR DISCRIMINATION

Contracts for work under this proposal will obligate the Contractors and subcontractors not to discriminate against any person on the basis of religion, color, ethnic group identification, sex, age, physical or mental disability, nor shall they discriminate unlawfully against any employee or application for employment because of race, religion, color, national origin, ancestry, physical handicap, mental disability, medical condition, marital status, age, or sex.

6.08 WAGE DETERMINATIONS

(a) As required by the California Labor Code, the Contractor shall pay not less than the prevailing rate of per diem wages as determined by the Director, Department of Industrial Relations, State of California. Copies of such prevailing rate of per diem wages are on file at the office of the City, which copies will be made available to any interested party upon request. The Contractor shall post a copy of such determination at each job site.

(b) The Contractor shall, as penalty to the City, forfeit $50.00 for each calendar day, or portion thereof, for each worker paid less than the specified prevailing rates for such work or craft in which such worker is employed, whether paid by the Contractor or by any Subcontractor under him.

(c) In accordance with the provisions of the California Labor Code, the Contractor shall secure the payment of compensation to his employees.

Prevailing wage rates information is also available from the Director of the Department of Industrial Relations' website at "http://www.dir.ca.gov/dlsr/PWD/index.htm".

6.09 APPRENTICES ON PUBLIC WORKS

The Contractor shall comply with all applicable provisions of the California Labor Code relating to employment of apprentices on public works.

6.10 WORKING HOURS

The Contractor shall comply with all applicable provisions of the California Labor Code relating to working hours. The Contractor shall, as a penalty to the City, forfeit $50.00 for each worker employed in the execution of the contract by the Contractor or by any Subcontractor, for each calendar day during which such worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week, unless such worker receives compensation for all hours worked in excess of 8 hours at not less than 1 1/2 times the basic rate of pay.

6.11 PUBLIC SAFETY AND CONVENIENCE

(a) The Contractor shall at all times conduct his work so as to assure the least possible obstruction to traffic and inconvenience to the general public and adequate protection of persons and property in the vicinity of the work. No street shall be closed to the public without first obtaining permission of the Engineer and proper government authority. Where excavation is being performed in primary streets or highways, one lane in each direction shall be kept open to traffic at all times unless otherwise provided or shown. Toe boards shall be provided to retain excavated material if required by the Engineer or the agency having jurisdiction over the street or highway. Fire hydrants on or adjacent to the work shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made by the Contractor to assure the use of sidewalks and the proper functioning of all gutters, storm drain inlets and other drainage facilities.

(b) A traffic control plan, when required by the City Engineer, shall be submitted at the preconstruction meeting. Traffic control shall be per California M.U.T.C.D., Latest Edition. The Contractor shall provide adequate barricades, signs, warning lights, watchmen and flagmen as required, in the opinion of the Engineer and agency having jurisdiction, to protect the work and the safety of the public. Warning lights using inflammable liquids will not be permitted. Only electrically-operated warning lights will be approved for use. Warning lights shall operate from sunset to sunrise. Barricades shall be painted to increase their visibility at night.

(c) NO PARKING signs with specific time frames shall be supplied and posted by the Contractor 48 hours prior to start of work. The Contractor shall notify the City of La Verne Police Department of such restrictions.

6.12 TRENCH EXCAVATION

Prior to excavating or digging trenches or other excavations that extend deeper than four feet below the surface:

(a) The Contractor shall promptly, and before the following conditions are disturbed, notify the City, in writing, of any:

(1) Material that the contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

(2) Subsurface or latent physical conditions at the site differing from those indicated.

(3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.

(b) That the City shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease in the contractor's cost of, or the time required for, performance of any part of the work shall issue a change order under the procedures described in the contract.

(c) That, in the event that a dispute arises between the City and the contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the contractor's cost of, or time required for, performance of any part of the work, the contractor shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all work to be performed under the contract. The contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

Prior to excavating any trench five feet or more in depth the Contractor shall submit to the Engineer a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground. If such plan varies from the shoring system standards established by the Construction Safety Orders of the California Division of Industrial Safety, the plans shall be prepared by a Civil Engineer registered in California. In no case will the Contractor be permitted to use a shoring, sloping or other protection system less effective than that required by said Orders. Nothing contained herein shall be construed to impose a tort liability upon the City, Engineer or any of their officers, agents or employees.

6.13 CONCRETE FORMS, FALSEWORK AND SHORING

The Contractor shall comply with the requirements of CAL OSHA, Construction Safety Orders, regarding the design of concrete forms, falsework and shoring and the inspection of same prior to placement of concrete. The Contractor shall employ a Civil Engineer registered in California to prepare design calculations and working drawings of the falsework or shoring system, to inspect such system prior to placement of concrete and to certify in writing that the false work or shoring system complies with the design and that the materials and workmanship are satisfactory for the purpose intended.

6.14 SANITARY PROVISIONS

The Contractor shall provide and maintain sanitary facilities for the use of his employees and those of his Subcontractors necessary to comply with the requirements of state and local health departments.

6.15 SAFETY AND HEALTH REGULATIONS

All work shall be performed in accordance with requirements of the California Division of Industrial Safety, the California Occupational Safety and Health Act and the William Steiger Occupational Safety and Health Act of 1970. The job safety conditions will be the responsibility of the Contractor.

6.16 LABOR, MATERIAL AND PERFORMANCE BONDS

The Contractor shall furnish two bonds each in the amount shown in the Notice Inviting Bids, one as security for the faithful performance of the work and the other as security for the faithful payment and satisfaction of all persons furnishing materials and performing labor on the work. The bonds shall be issued by a corporation duly and legally licensed to transact surety business in the State of California. Such bonds shall remain in force throughout the period required to complete the work. The bond must be executed by a duly licensed surety company approved by the City.

6.17 CONTRACTOR NOT RESPONSIBLE FOR DAMAGE RESULTING FROM CERTAIN ACTS OF GOD

As provided in Sections 7105 of the California Public Contracts Code, the Contractor shall not be responsible for the cost of repairing damaged portions of the work determined to have been proximately caused by an act of God, in excess of 5 percent of the contracted amount, provided, that the work damaged was constructed in accordance with accepted and applicable building standards and the specifications and drawings.

6.18 LIABILITY OF CITY AND ENGINEER

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the City, Engineer and their officers, Construction Manager, agents and employees against and from all claims and liability arising under or by reason of the contract or any performance of the work but not from the active negligence or willful misconduct of the City by the Engineer.

TECHNICAL SPECIFICATIONS
& DESCRIPTION OF BID ITEMS

TABLE OF CONTENTS

LA VERNE FIRE STATION 1

2061 3rd Street
La Verne, California, 91750

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid-core doors with wood-veneer faces (Owner to select species and finish).
2. Factory finishing flush wood doors.
3. Factory fitting flush wood doors to frames and factory machining for hardware.

B. Related Requirements:
1. Section 088000 "Glazing" for glass view panels in flush wood doors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of door. Include factory-finishing specifications.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:

1. Dimensions and locations of blocking.
2. Dimensions and locations of mortises and holes for hardware.
3. Dimensions and locations of cutouts.
4. Undercuts.
5. Requirements for veneer matching.
6. Doors to be factory finished and finish requirements.
7. Fire-protection ratings for fire-rated doors.

C. Samples: For plastic-laminate door faces and factory-finished doors.

1.3 INFORMATIONAL SUBMITTALS

A. Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body and is a certified participant in AWI's Quality Certification Program.

B. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Ampco Products, LLC.
2. General Veneer Manufacturing Co.
3. Lambton Doors.
4. Marlite.
5. Marshfield DoorSystems, Inc.

2.2 FLUSH WOOD DOORS, GENERAL

A. Quality Standard: In addition to requirements specified, comply with AWI's, AWMAC's, and WI's "Architectural Woodwork Standards.

1. Provide AWI Quality Certification Labels indicating that doors comply with requirements of grades specified.

B. Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that do not contain urea formaldehyde.

C. Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. WDMA I.S.1-A Performance Grade:

1. Heavy Duty unless otherwise indicated.

E. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
2. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
3. Pairs: Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.

F. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784.

G. Particleboard-Core Doors:

1. Particleboard: ANSI A208.1, Grade LD-2 made with binder containing no urea-formaldehyde.
2. Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.

H. Structural-Composite-Lumber-Core Doors:

1. Structural Composite Lumber: WDMA I.S.10.

a. Screw Withdrawal, Face: 700 lbf (3100 N).
b. Screw Withdrawal, Edge: 400 lbf (1780 N).

2.3 VENEER-FACED DOORS FOR TRANSPARENT FINISH

A. Exterior Solid-Core Doors (use exterior grade for all interior and exterior wood doors for doors called out as wood doors in door schedule)

1. Grade: Premium, with Grade A faces.
2. Species: Select red birch
3. Match between Veneer Leaves: Book match.
4. Assembly of Veneer Leaves on Door Faces: Balance match.
5. Core: Either glued wood stave or structural composite lumber.
6. Construction: Seven plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.
7. Adhesives: Type I per WDMA T.M.-6.

2.4 LIGHT FRAMES AND LOUVERS

A. Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of 0.048-inch- (1.2-mm-) thick, cold-rolled steel sheet; factory primed for paint with baked-enamel- or powder-coated finish; and approved for use in doors of fire-protection rating indicated.

B. Metal Louvers:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. L & L Louvers, Inc.
b. McGill Architectural Products.

2. Metal and Finish: Hot-dip galvanized steel, 0.040 inch (1.0 mm) thick, factory primed for paint with baked-enamel- or powder-coated finish.

2.5 FABRICATION

A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.

1. Comply with NFPA 80 requirements for fire-rated doors.

B. Factory machine doors for hardware that is not surface applied.

C. Openings: Factory cut and trim openings through doors.

1. Light Openings: Trim openings with moldings of material and profile indicated.
2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 088000 "Glazing."
3. Louvers: Factory install louvers in prepared openings.

2.6 SHOP PRIMING

2.7 FACTORY FINISHING

A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

B. Factory finish doors that are indicated to receive transparent finish.

C. Use only paints and coatings that comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Transparent Finish:

1. Grade: Premium.
2. Finish: AWI's, AWMAC's, and WI's "Architectural Woodwork Standards" System 10, UV curable, water based or System 11, catalyzed polyurethane.
3. Staining: As selected by Architect from manufacturer's full range.
4. Effect: Open-grain finish.
5. Sheen: Semigloss.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Hardware: For installation, see Section 087100 "Door Hardware."

B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

1. Install fire-rated doors according to NFPA 80.

C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.

1. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors. Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch (6.4 mm) from bottom of door to top of threshold unless otherwise indicated.

a. Comply with NFPA 80 for fire-rated doors.

D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

E. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

END OF SECTION 081416

SECTION 08 71 00 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Door hardware.

B. Related Divisions:

1. Division 06 – door hardware installation
2. Division 07 – sealant at exterior thresholds
3. Division 08 – metal doors and frames, interior aluminum frames, wood doors, integrated security systems, specialty doors, storefront and glazed curtainwall systems.
4. Division 10 – operable partitions
5. Division 21 – fire and life safety systems
6. Division 28 – security access systems

C. Specific Omissions: Hardware for the following is specified or indicated elsewhere.

1. Windows.
2. Cabinets, including open wall shelving and locks.
3. Signs, except where scheduled.
4. Toilet accessories, including grab bars.
5. Installation.
6. Rough hardware.
7. Conduit, junction boxes & wiring.
8. Folding partitions, except cylinders where detailed.
9. Aluminum doors, except cylinders where detailed.
10. Access doors and panels, except cylinders where detailed.

1.2 REFERENCES:

A. Use date of standard in effect as of Bid date.

1. American National Standards Institute
   a) ANSI 156.18 – Materials and Finishes.
2. BHMA – Builders Hardware Manufacturers Association
3. 2018 California Building Code
   a) Chapter 11B – Accessibility To Public Buildings, Public Accommodations, Commercial Buildings and Public Housing
4. DHI – Door and Hardware Institute

5. NFPA – National Fire Protection Association

   a) NFPA 80 2018 Edition – Standard for Fire Doors and Other Opening Protectives.
   b) NFPA 105 – Smoke and Draft Control Door Assemblies
   c) NFPA 252 – Fire Tests of Door Assemblies

6. UL – Underwriters Laboratories

   a) UL10C – Positive Pressure Fire Tests of Door Assemblies.
   b) UL 305 – Panic Hardware

7. WHI – Warnock Hersey Incorporated State of California Building Code
8. Local applicable codes
9. SDI – Steel Door Institute
10. WI – Woodwork Institute
11. AWI – Architectural Woodwork Institute
12. NAAMM – National Association of Architectural Metal Manufacturers

B. Abbreviations

1. Manufacturers**:** see table at 2.1.A of this section
2. Finishes**:** see 2.7 of this section.

1.3 SUBMITTALS & SUBSTITUTIONS

A. SUBMITTALS**:** Submit six copies of schedule per D. Only submittals printed one sided will be accepted and reviewed. Organize vertically formatted schedule into "Hardware Sets" with index of doors and headings, indicating complete designations of every item required for each door or opening. Minimum 10pt font size. Include following information**:**

1. Type, style, function, size, quantity and finish of hardware items.
2. Use BHMA Finish codes per ANSI A156.18.
3. Name, part number and manufacturer of each item.
4. Fastenings and other pertinent information.
5. Location of hardware set coordinated with floor plans and door schedule.
6. Explanation of abbreviations, symbols, and codes contained in schedule.
7. Mounting locations for hardware.
8. Door and frame sizes, materials and degrees of swing.
9. List of manufacturers used and their nearest representative with address and phone number.
10. Catalog cuts.
11. Point-to-point wiring diagrams.
12. Manufacturer's technical data and installation instructions for electronic hardware.

B. Bid and submit manufacturer's updated/improved item if scheduled item is discontinued.

C. Deviations**:** Highlight, encircle or otherwise identify deviations from "Schedule of Finish Hardware" on submittal with notations clearly designating those portions as deviating from this section.

D. If discrepancy between drawings and scheduled material in this section, bid the more expensive of the two choices, note the discrepancy in the submittal and request direction from Architect for resolution.

E. Substitutions per Division 1. Include product data and indicate benefit to the Project. Furnish operating samples on request.

F. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, riser and point-to-point wiring diagrams, manufacturers' installation, adjustment and maintenance information, and supplier's final inspection report.

1.4 QUALITY ASSURANCE:

A. Qualifications:

1. Hardware supplier: direct factory contract supplier who employs a certified architectural hardware consultant (AHC), available at reasonable times during course of work for project hardware consultation to Owner, Architect and Contractor.

a) Responsible for detailing, scheduling and ordering of finish hardware. Detailing implies that the submitted schedule of hardware is correct and complete for the intended function and performance of the openings.

B. Hardware: Free of defects, blemishes and excessive play. Obtain each kind of hardware (latch and locksets, exit devices, hinges and closers) from one manufacturer.

C. Exit Doors: Operable from inside with single motion without the use of a key or special knowledge or effort.

D. Fire-Rated Openings: NFPA 80 compliant. Hardware UL10C (positive pressure) compliant for given type/size opening and degree of label. Provide proper latching hardware, non-flaming door closers, approved-bearing hinges, and resilient seals. Coordinate with wood door section for required intumescent seals. Furnish openings complete.

E. Furnish hardware items required to complete the work in accordance with specified performance level and design intent, complying with manufacturers' instructions and code requirements.

1.5 DELIVERY, STORAGE AND HANDLING:

A. Delivery: coordinate delivery to appropriate locations (shop or field).

1. Permanent keys and cores: secured delivery direct to Owner's representative.

B. Acceptance at Site: Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.

C. Storage: Provide securely locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, dust, excessive heat and cold, etc.

1.6 PROJECT CONDITIONS AND COORDINATION:

A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical the same operation and quality as type specified, subject to Architect's approval.

B. Coordination: Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated, as necessary for proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents. Furnish related trades with the following information:

1. Location of embedded and attached items to concrete.

2. Location of wall-mounted hardware, including wall stops.
3. Location of finish floor materials and floor-mounted hardware.
4. At masonry construction, coordinate with the anchoring and hollow metal supplier prior to frame installation by placing a strip of insulation, wood, or foam, on the back of the hollow metal frame behind the rabbet section for continuous hinges, as well as at rim panic hardware strike locations, silencers, coordinators, and door closer arm locations. When the frame is grouted in place, the backing will allow drilling and tapping without dulling or breaking the installer's bits.
5. Locations for conduit and raceways as needed for electrical, electronic and electro-pneumatic hardware items. Fire/life-safety system interfacing. Point-to-point wiring diagrams plus riser diagrams to related trades.
6. Coordinate: flush top rails of doors at outswinging exteriors, and throughout where adhesive-mounted seals occur.
7. Manufacturers' templates to door and frame fabricators.

C. Check Shop Drawings for doors and entrances to confirm that adequate provisions will be made for proper hardware installation.

D. Environmental considerations**:** segregate unused recyclable paper and paper product packaging, uninstalled metals, and plastics, and have these sent to a recycling center.

1.7 WARRANTY**:**

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

B. Include factory order numbers with close-out documents warranty information:

C. Minimum warranties:

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

1.8 COMMISSIONING**:**

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

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

PART 2 PRODUCTS

2.1 MANUFACTURERS:

A. Manufacturers and their abbreviations used in this schedule:

GLY	Glynn-Johnson Hardware
IVE	H. B. Ives
LCN	LCN Closers
SCH	Schlage Lock Company
VON	Von Duprin
ZER	Zero International

2.2 HINGING METHODS:

A. Drawings typically depict doors at 90 degrees, doors will actually swing to maximum allowable. Use wide-throw conventional or continuous hinges as needed up to 8 inches in width to allow door to stand parallel to wall for true 180-degree opening. Advise architect if 8-inch width is insufficient.

B. Doors 3'6" or wider use 5" X 41/2" heavy weight hinges

C. Doors 8'0" use 4 hinges and add 1 hinge for every foot thereafter

D. Conform to manufacturer's published hinge selection standard for door dimensions, weight and frequency, and to hinge selection as scheduled. Where manufacturer's standard exceeds the scheduled product, furnish the heavier of the two choices, notify Architect of deviation from scheduled hardware.

E. Conventional Hinges: Steel or stainless steel pins and approved bearings. Hinge open widths minimum, but of sufficient throw to permit maximum door swing.

1. Outswinging exterior doors: stainless steel hinges with non-removable (NRP) pins and security studs.
2. Stainless steel material exteriors and at doors subject to corrosive atmospheric conditions.

2.3 LOCKSETS, LATCHSETS, DEADBOLTS:

A. Mortise Locksets and Latchsets: as scheduled.

1. Chassis: cold-rolled steel, handing field-changeable without disassembly.
2. Universal lock case – 10 functions in one case.
3. Floating mounting tabs automatically adjusts to fit a beveled door edge.
4. Latchbolts: 0.75 inch throw stainless steel anti-friction type.
5. Lever Trim: through-bolted, accessible design, cast lever or solid extruded bar type levers as scheduled. Filled hollow tube design unacceptable.
    a) Spindles: security design independent breakaway. Breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.
    b) Inside lever applied by screwless shank mounting – no exposed trim mount screws.
    c) Levers rotate up or down for ease of use.
6. Furnish solid cylinder collars with wave springs. Wall of collar to cover rim of mortise cylinder.

7. Turnpieces**:** accessible offset turn-lever design not requiring pinching or twisting motions to operate.
8. Deadbolts**:** stainless steel 1-inch throw.
9. Electric operation**:** Manufacturer-installed continuous duty solenoid.
10. Strikes**:** 16 gage curved steel, bronze or brass with 1 inch deep box construction, lips of sufficient length to clear trim and protect clothing.
11. Scheduled Lock Series and Design**:** Schlage L series, Design to be 06
12. Certifications**:**

    a) ANSI A156.13, 1994, Grade 1 Operational,
    b) ANSI/ASTM F476-84 Grade 31 UL Listed.

13. Accessibility: Require not more than 5 lb to retract the latchbolt or deadbolt, or both, per CBC 2022 11B-404.2.7 and 11B-309.4.

2.6 CLOSERS

B. Surface Closers**:** 4040-XP

1. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body. Double heat-treated pinion shaft, single piece forged piston, chrome-silicon steel spring.
2. ISO 2000 certified. Units stamped with date-of-manufacture code.
3. Independent lab-tested 10,000,000 cycles.
4. Non-sized, non-handed, and adjustable. Place closer inside building, stairs, and rooms.
5. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.
6. Adjust doors to open with not more than 5.0-pounds pressure to open at exterior doors and 5.0-pounds at interior doors. As allowed per 2016 California Building Code Section 11B-404.2.9, local authority may increase the allowable pressure for fire doors to achieve positive latching, but not to exceed 15-pounds.

    a) Exception: exterior doors' pressure-to-open may be increased to 8.5-pounds if: at a single location, and one of a bank of eight leafs or fraction of eight, and one leaf of this bank is fitted with a low- or high-energy operator.

7. Separate adjusting valves for closing speed, latching speed and backcheck, fourth valve for delayed action where scheduled.
8. Extra-duty arms (EDA) at exterior doors scheduled with parallel arm units.
9. Exterior door closers**:** tested to 100 hours of ASTM B117 salt spray test, furnish data on request.
10. Exterior doors**:** seasonal adjustments not required for temperatures from 120 degrees F to -30 degrees F, furnish checking fluid data on request.
11. Non-flaming fluid, will not fuel door or floor covering fires.
12. Pressure Relief Valves (PRV) not permitted.

2.7 OTHER HARDWARE

A. Automatic Flush Bolts**:** Low operating force design.

B. Overhead Stops**:** Non-plastic mechanisms and finished metal end caps. Field-changeable hold-open, friction and stop-only functions.

C. Kick Plates**:** Four beveled edges, .050 inches minimum thickness, height and width as scheduled. Sheet-metal screws of bronze or stainless steel to match other hardware.

D. Door Stops: Provide stops to protect walls, casework or other hardware.

1. Unless otherwise noted in Hardware Sets, provide floor type with appropriate fasteners. Where floor type cannot be used, provide wall type. If neither can be used, provide overhead type.
2. Locate overhead stops for maximum possible opening. Consult with Owner for furniture locations. Minimum: 90deg stop / 95deg deadstop. Note degree of opening in submittal.

E. Automatic door bottoms: low operating force units.

1. Include automatic type door bottoms, as opposed to fixed sweeps, at stairs and elevator lobbies to allow fine-tuning of pressurization systems.

F. Thresholds: As scheduled and per details. Comply with CBC 2022 11B-404.2.5. Substitute products: certify that the products equal or exceed specified material's thickness. Proposed substitutions: submit for approval.

1. Saddle thresholds: 0.125 inches minimum thickness.
2. Exteriors: Seal perimeter to exclude water and vermin. Use sealant complying with requirements in Division 7 "Thermal and Moisture Protection". Minimum 0.25 inch diameter fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors. National Guard Products' "COMBO" or Pemko Manufacturing's "FHSL".
3. Fire-rated openings, 90-minutes or less duration: use thresholds to interrupt floor covering material under the door where that material has a critical radiant flux value less than 0.22 watts per square centimeter, per NFPA 253. Use threshold unit as scheduled. If none scheduled, include a 0.25in high 5in wide saddle in the bid, and request direction from Architect.
4. Fire-rated openings, 3-hour duration: Thresholds, where scheduled, to extend full jamb depth.
5. Acoustic openings: Set units in full bed of Division-7-compliant, leave no air space between threshold and substrate.
6. Plastic plugs with wood or sheet metal screws are not an acceptable substitute for specified fastening methods.
7. Fasteners: Generally, exposed screws to be Phillips or Robertson drive. Pinned TORX drive at high security areas. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.

G. Through-bolts: Do not use. Coordinate with wood doors; ensure provision of proper blocking to support wood screws for mounting panic hardware and door closers. Coordinate with metal doors and frames; ensure provision of proper reinforcement to support machine screws for mounting panic hardware and door closers.

1. Exception: surface-mounted overhead stops, holders, and friction stays.

H. Silencers: Interior hollow metal frames, 3 for single doors, 4 for pairs of doors. Leave no unfilled/uncovered pre-punched silencer holes. Intent: door bears against silencers, seals make minimal contact with minimal compression – only enough to effect a seal. Provide where seals are not used

I. Wall- & Floor-mounted electromagnetic door holders: LCN's SEM series or approved equivalent. Incorporate into U.L. listed fire & life-safety system, doors release to allow closure and latching when door's zone is in alarm state. Use minimum projection required to allow door to open as widely as allowed by wall conditions and projection of door hardware.

2.8 FINISH:

1. Generally: BHMA 626 Satin Chromium Areas using BHMA 626: furnish push-plates, pulls and protection plates of BHMA 630, Satin Stainless Steel, unless otherwise scheduled.

J. Door closers: factory powder coated to match other hardware, unless otherwise noted.

2.9 KEYING REQUIREMENTS:

A. KEYING REQUIREMENTS:

B. Key System: Keying, keyways, system secuity etc will be determined at a key meeting with the Contractor and Owner. For estimate use standard cores with the following

C. Keys

1. Factory registered master key system
2. Non-I.C. construction keying: furnish inserted type partial key. At substantial completion, remove inserts in Owner's presence; demonstrate consequent non-operability of construction key. Give all removed inserts and all construction keys to Owner, provide accounting for all the pieces.
3. Temporary cylinders/cores remain supplier's property.
4. Furnish 10 construction keys.
5. Furnish 2 construction insert extractor tool 35-057.

D. Key Cylinders: furnish, 6-pin solid brass construction.

E. Cylinders/Cylinder cores: furnish keyed at factory of lock manufacturer where permanent records are maintained. Locks and cylinders same manufacturer.

F. Permanent keys: furnish secured shipment direct from point of origination to Owner.

6. For estimate: 3 keys per change combination, 5 master keys per group, 5 grand-master keys.
7. For estimate: VKC stamping plus "DO NOT DUPLICATE".

G. Bitting List: furnish secured shipment direct from point of origination to Owner upon completion.

PART 3 - EXECUTION

3.1 ACCEPTABLE INSTALLERS:

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

3.2 PREPARATION:

A. Ensure that walls and frames are square and plumb before hardware installation. Make corrections before commencing hardware installation. Installation denotes acceptance of wall/frame condition.

B. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.

1. Notify Architect of code conflicts before ordering material.

1. Locate latching hardware between 34 inches to 44 inches above the finished floor, per California Building Code, Section 1010.1.9.2 and 11B-404.2.7.
2. Locate panic hardware between 36 inches to 44 inches above the finished floor.
3. Where new hardware is to be installed near existing doors/hardware scheduled to remain, match locations of existing hardware.

C. Overhead stops**:** before installing, determine proposed locations of furniture items, fixtures, and other items to be protected by the overhead stop's action.

3.3 INSTALLATION

A. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation. Remove and reinstall or replace work deemed defective by Architect.

1. Gaskets**:** install jamb-applied gaskets before closers, overhead stops, rim strikes, etc; fasten hardware over and through these seals. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.
2. When hardware is to be attached to existing metal surface and insufficient reinforcement exists, use RivNuts, NutSerts or similar anchoring device for screws.
3. Use manufacturers' fasteners furnished with hardware items, or submit Request for Substitution with Architect.
4. Replace fasteners damaged by power-driven tools.

B. Locate floor stops no more that 4 inches from walls and not within paths of travel. See paragraph 2.2 regarding hinge widths, door should be well clear of point of wall reveal. Point of door contact no closer to the hinge edge than half the door width. Where situation is questionable or difficult, contact Architect for direction.

C. Core concrete for exterior door stop anchors. Set anchors in approved non-shrink grout.

D. Locate overhead stops for minimum 90 degrees at rest and for maximum allowable degree of swing.

E. Drill pilot holes for fasteners in wood doors and/or frames.

F. Lubricate and adjust existing hardware scheduled to remain. Carefully remove and give to Owner items not scheduled for reuse.

3.4. ADJUSTING

A. Adjust and check for proper operation and function. Replace units, which cannot be adjusted to operate freely and smoothly.

1. Hardware damaged by improper installation or adjustment methods**:** repair or replace to Owner's satisfaction.
2. Adjust doors to fully latch with no more than 1 pound of pressure.

a) Door closer valves: turn valves clockwise until at bottom – do not force. Turn valves back out one and one-half turns and begin adjustment process from that point. Do not force valves beyond three full turns counterclockwise.

3. Adjust delayed-action closers on fire-rated doors to fully close from fully-opened position in no more than 10 seconds.

4. Adjust door closers per 1.9 this section.

B. Fire-rated doors:

1. Wood doors: adjust to 0.125 inches clearance at heads, jambs, and meeting stiles.
2. Steel doors: adjust to 0.063 inches minimum to 0.188 inches maximum clearance at heads, jambs, and meeting stiles.
3. Adjust wood and steel doors to 0.75 inches maximum clearance (undercut) above threshold or finish floor material under door.

C. Final inspection: Installer to provide letter to Owner that upon completion installer has visited the Project and has accomplished the following:

1. Has re-adjusted hardware.
2. Has evaluated maintenance procedures and recommend changes or additions, and instructed Owner's personnel.
3. Has identified items that have deteriorated or failed.
4. Has submitted written report identifying problems.

3.5 DEMONSTRATION:

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

3.6 PROTECTION/CLEANING:

A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.

B. Clean adjacent wall, frame and door surfaces soiled from installation / reinstallation process.

3.7 SCHEDULE OF FINISH HARDWARE

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

HW SET: 01

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE	L9010 06A	626	SCH
1	EA	CLOSER	4040XP	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	DOME STOP	FS436/438 AS REQ'D	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 02

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY W/INDICATOR	L9440-L583-363-L283-722 06A	626	SCH
1	EA	DOME STOP	FS436/438 AS REQ'D	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 03

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	OFFICE LOCK	L9050P L583-363 06A	626	SCH
1	EA	DOME STOP	FS436/438 AS REQ'D	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 04

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	OFFICE LOCK	L9050P L583-363 06A	626	SCH
1	EA	CLOSER	4040XP	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	DOME STOP	FS436/438 AS REQ'D	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 05

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	SCH
1	EA	DOME STOP	FS436/438 AS REQ'D	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 06

3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	SCH
1	EA	OVERHEAD HOLDER	90H	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 07

3	EA	HINGE	3CB1 4.5 X 4.5 NRP SEC STUD	630	IVE
1	EA	OFFICE LOCK	L9050P L583-363 06A	626	SCH
1	EA	CLOSER	4040XP EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	FLOOR STOP	FS441/442 AS REQUIRED	626	IVE
1	SET	PERIMETER SEALS	328AA HEAD AND JAMBS	AL	ZER
1	EA	AUTO DOOR BOTTOM	355A	AL	ZER
1	EA	THRESHOLD	AS DETAILED	AL	ZER

HW SET: 08

3	EA	HINGE	3CB1 4.5 X 4.5 NRP SEC STUD	630	IVE
1	EA	OFFICE LOCK	L9050P L583-363 06A	626	SCH
1	EA	CLOSER	4040XP S-CUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE

1	SET	PERIMETER SEALS	328AA HEAD AND JAMBS	AL	ZER
1	EA	AUTO DOOR BOTTOM	355A	AL	ZER
1	EA	THRESHOLD	AS DETAILED	AL	ZER

HW SET: 09

3	EA	HINGE	3CB1 4.5 X 4.5 NRP SEC STUD	630	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	SCH
1	EA	OVERHEAD HOLDER	90H	630	GLY
1	SET	PERIMETER SEALS	328AA HEAD AND JAMBS	AL	ZER
1	EA	AUTO DOOR BOTTOM	355A	AL	ZER
1	EA	THRESHOLD	AS DETAILED	AL	ZER

HW SET: 10

3	EA	HINGE	3CB1 4.5 X 4.5	630	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	SCH
1	EA	CLOSER	4040XP	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	DOME STOP	FS436/438 AS REQ'D	626	IVE
1	SET	PERIMETER SEALS	328AA HEAD AND JAMBS	AL	ZER
1	EA	AUTO DOOR BOTTOM	355A	AL	ZER
1	EA	THRESHOLD	AS DETAILED	AL	ZER

HW SET: 11

3	EA	HINGE	3CB1 4.5 X 4.5 NRP SEC STUD	630	IVE
1	EA	ENTRANCE LOCK	L9453P-L583-363 06A	626	SCH
1	EA	CLOSER	4040XP EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	FLOOR STOP	FS441/442 AS REQUIRED	626	IVE
1	SET	PERIMETER SEALS	328AA HEAD AND JAMBS	AL	ZER
1	EA	DOOR SWEEP	339AA	AL	ZER
1	EA	THRESHOLD	AS DETAILED	AL	ZER

HW SET: 12

6	EA	HINGE	3CB1 4.5 X 4.5 NRP SEC STUD	630	IVE
1	SET	AUTO FLUSH BOLT	FB31/41 AS REQ'D	626	IVE
1	EA	DUST PROOF STRIKE	DP1/2 AS REQ'D	626	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	SCH
2	EA	OVERHEAD HOLDER	90H	630	GLY
1	SET	PERIMETER SEALS	328AA HEAD AND JAMBS	AL	ZER
2	EA	DOOR SWEEP	339AA	AL	ZER
1	EA	ASTRAGAL	44STST X 188	600	ZER
1	EA	THRESHOLD	AS DETAILED	AL	ZER

HW SET: 13

ALL HARDWARE BY ROLL UP DOOR MANUFACTURER	B/O

HW SET: 14

ALL HARDWARE BY BI-FOLD DOOR MANUFACTURER	B/O

END OF SECTION

SECTION 088000 – GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Glass for doors and interior door side lites
2. Glazing sealants and accessories.
3. Windows: Dual Glazed windows to meet requirements found in Title 24 calculations.

1.2 COORDINATION

A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches (300 mm) square.

C. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

D. Delegated-Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS

A. Preconstruction adhesion and compatibility test report.

1.5 QUALITY ASSURANCE

A. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

1.6 PRECONSTRUCTION TESTING

A. Preconstruction Adhesion and Compatibility Testing: Test each glass product, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.

1. Testing is not required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted.

1.7 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

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

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

B. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

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

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

1. AGC Glass Company North America, Inc.
2. Cardinal Glass Industries.
3. Gardner Glass, Inc.
4. Glasswerks LA, Inc.
5. Guardian Industries Corp.; SunGuard.
6. Milgard

2.2 PERFORMANCE REQUIREMENTS

A. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined according to the International Building Code and ASTM E 1300.

1. Design Wind Pressures: As indicated on Drawings.
2. Differential Shading: Design glass to resist thermal stresses induced by differential shading within individual glass lites.

B. Windborne-Debris-Impact Resistance: Exterior glazing shall comply with basic-protection testing requirements in ASTM E 1996 for Wind Zone 3 when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on Project and shall be installed in same manner as glazing indicated for use on Project.

1. Large-Missile Test: For glazing located within 30 feet (9.1 m) of grade.
2. Small-Missile Test: For glazing located more than 30 feet (9.1 m) above grade.

C. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.

D. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:

1. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F (W/sq. m x K).
2. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
3. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.3 GLASS PRODUCTS, GENERAL

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: “Glazing Manual."
2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

D. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than the thickness indicated.

E. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass. Where fully tempered float glass is indicated, provide fully tempered float glass.

2.4 GLASS PRODUCTS

A. Clear Annealed Float Glass: ASTM C 1036, Type I, Class 1 (clear), Quality-Q3.

B. Fully Tempered Float Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3. (use in all exterior doors and doors between apparatus rm and other interior spaces including all door side lites).

C. Heat-Strengthened Float Glass: ASTM C 1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

2.5 INSULATING GLASS IN METAL DOORS AND METAL FRAMED SIDE LITES

1. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190. Provide Kind FT (fully tempered) float glass in place of annealed or Kind HS (heat-strengthened) float glass where safety glass is indicated or required by code.

B.

1. Sealing System: Dual seals.
2. Spacer: Manufacturer's standard spacer material and construction.

2.6 GLAZING SEALANTS

A. General:

1. Compatibility: Compatible with one another and with other materials they 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. Field-applied sealants shall have a VOC content of not more than 250 g/L.

B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.

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

a. Dow Corning Corporation.

b. Sika Corporation.
c. Tremco Incorporated.

2.7 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:

1. AAMA 804.3 tape, where indicated.

B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:

1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.8 MISCELLANEOUS GLAZING MATERIALS

A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

B. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

C. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

D. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

E. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

PART 3 - EXECUTION

3.1 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.

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 includes glass with edge

damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

F. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).

G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

3.2 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Apply heel bead of elastomeric sealant.

F. Center glass lites in openings on setting blocks, and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

G. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.3 GASKET GLAZING (DRY)

A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and

installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

E. Install gaskets so they protrude past face of glazing stops.

3.4 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.5 CLEANING AND PROTECTION

A. Immediately after installation remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.

1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.

C. Remove and replace glass that is damaged during construction period.

3.6 MONOLITHIC GLASS SCHEDULE

3.7 INSULATING GLASS SCHEDULE

A. Glass Type: Clear insulating glass (w/ Low-E-coating on all exterior doors) . Provide Kind FT (fully tempered) float glass in place of annealed or Kind HS (heat-strengthened) float glass where safety glass is indicated or required by code.

1. Overall Unit Thickness: 5/8 inch (16 mm).
2. Minimum Thickness of Each Glass Lite: 5 mm.
3. Outdoor Lite:Fully tempered float glass.
4. Interspace Content: Argon.
5. Indoor Lite: Fully tempered float glass.
6. Winter Nighttime U-Factor: (see Title 24 requirements) maximum.
7. Summer Daytime U-Factor: (see Title 24 requirements) maximum.
8. Safety glazing required.

END OF SECTION 088000

SECTION 088300 - MIRRORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following types of silvered flat glass mirrors.
   1. Film-backed glass mirrors qualifying as safety glazing.

B. Related Sections include the following:

   1. Division 10 Section "Toilet, Bath, and Laundry Accessories" for metal-framed mirrors.
   2. Stainless Steel Framed Mirrors for the Weight Room as shown in the Interior Elevations.

1.3 DEFINITIONS

A. Deterioration of Mirrors: Defects developed from normal use that are attributable to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning mirrors contrary to mirror manufacturer's written instructions. Defects include discoloration, black spots, and clouding of the silver film.

1.4 PERFORMANCE REQUIREMENTS

A. Provide mirrors that will not fail under normal usage. Failure includes glass breakage and deterioration attributable to defective manufacture, fabrication, and installation.

1.5 SUBMITTALS

A. Product Data: For the following:

   1. Mirrors. Include description of materials and process used to produce each type of silvered flat glass mirror specified that indicates sources of glass, glass coating components, edge sealer, and quality-control provisions.
   2. Mirror mastic.
   3. Mirror hardware.

B. Shop Drawings: Include mirror elevations, edge details, mirror hardware, and attachments to other work.

C. Samples: For each type of mirror product required, in the form indicated below:

1. Mirrors, 12 inches (300 mm) square, including edge treatment on 2 adjoining edges.
2. Mirror clips.
3. Mirror trim, 12 inches (300 mm) long.

D. Product Certificates: For each type of mirror and mirror mastic, signed by product manufacturer.

E. Qualification Data: For Installer.

F. Mirror Mastic Compatibility Test Reports: From mirror manufacturer indicating that mirror mastic was tested for compatibility and adhesion with mirror backing and substrates on which mirrors are installed.

G. Warranty: Special warranty specified in this Section.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed mirror glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in mirror installations with a record of successful in-service performance; and who employs glass installers for this Project who are certified under NGA's Glazier Certification Program as Level 2 (Senior Glaziers) or Level 3 (Master Glaziers).

B. Source Limitations for Mirrors: Obtain mirrors from one source for each type of mirror indicated.

C. Source Limitations for Mirror Glazing Accessories: Obtain mirror glazing accessories from one source for each type of accessory indicated.

D. Glazing Publications: Comply with the following published recommendations:

1. GANA's "Glazing Manual" unless more stringent requirements are indicated. Refer to this publication for definitions of glass and glazing terms not otherwise defined in this Section or in referenced standards.
2. GANA Mirror Division's "Mirrors, Handle with Extreme Care: Tips for the Professional on the Care and Handling of Mirrors."

E. Safety Glazing Products: For film-backed mirrors, provide products complying with testing requirements in 16 CFR 1201 for Category II materials.

F. Preconstruction Mirror Mastic Compatibility Test: Submit mirror mastic products to mirror manufacturer for testing to determine compatibility of mastic with mirror backing and substrates on which mirrors are installed.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect mirrors according to mirror manufacturer's written instructions and as needed to prevent damage to mirrors from condensation, temperature changes, direct exposure to sun, or other causes.

B. Comply with mirror manufacturer's written instructions for shipping, storing, and handling mirrors as needed to prevent deterioration of silvering, damage to edges, and abrasion of glass surfaces and applied coatings. Store indoors, protected from moisture including condensation.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not install mirrors until ambient temperature and humidity conditions are maintained at levels indicated for final occupancy.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form, made out to Owner and signed by mirror manufacturer agreeing to replace mirrors 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: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering mirrors that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide mirrors by one of the following:

1. Arch Aluminum & Glass Co., Inc.
2. Gardner Glass Products.
3. Gilded Mirrors, Inc.
4. Guardian Industries Corp.
5. Independent Mirror Industries, Inc.
6. Lenoir Mirror Company.
7. Messer Industries, Inc.
8. Stroupe Mirror Co., Inc.
9. Sunshine Mirror.
10. Virginia Mirror Company, Inc.
11. VVP America, Inc.; Binswanger Mirror Products.
12. Walker Glass Co., Ltd.

2.2 SILVERED FLAT GLASS MIRROR MATERIALS

A. Tempered Clear Glass Mirrors: Comply with ASTM C 1503, Mirror Glazing Quality, for blemish requirements in annealed float glass before silver coating is applied, for coating requirements, and with other requirements not affected by tempering process; and comply with ASTM C 1048 for Kind FT, Condition A, tempered float glass before silver coating is applied.

1. Nominal Thickness: 3.0 mm.

2.3 MISCELLANEOUS MATERIALS

A. Setting Blocks: Elastomeric material with a Type A Shore durometer hardness of 85, plus or minus 5.

B. Edge Sealer: Coating compatible with glass coating and approved by mirror manufacturer for use in protecting against silver deterioration at mirrored glass edges.

C. Mirror Mastic: An adhesive setting compound, produced specifically for setting mirrors and certified by both mirror manufacturer and mastic manufacturer as compatible with glass coating and substrates on which mirrors will be installed.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Gunther Mirror Mastics.
    b. Palmer Products Corporation.

3. VOC Content: Not more than 70 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.4 MIRROR HARDWARE

A. Top and Bottom Aluminum J-Channels: Aluminum extrusions with a return deep enough to produce a glazing channel to accommodate mirrors of thickness indicated and in lengths required to cover bottom and top edges of each mirror in a single piece.

1. Bottom Trim: J-channels formed with front leg and back leg not less than 3/8 and 7/8 inch (9.5 and 22 mm) in height, respectively, and a thickness of not less than 0.04 inch (1.0 mm).
2. Top Trim: J-channels formed with front leg and back leg not less than 5/8 and 1 inch (16 and 25 mm) in height, respectively, and a thickness of not less than 0.04 inch (1.0 mm).
3. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
4. Products: Subject to compliance with requirements, provide one of the following:

    a. Bottom Trim:

1) Laurence, C. R. Co., Inc.; CRL Standard "J" Channel.
2) Sommer & Maca Industries, Inc.; Medium Gauge Aluminum Shallow Nose "J" Moulding Lower Bar.
3) Sommer & Maca Industries, Inc.; Heavy Gauge Aluminum Shallow Nose "J" Moulding Lower Bar.

b. Top Trim:

1) Laurence, C. R. Co., Inc.; CRL Deep "J" Channel.
2) Sommer & Maca Industries, Inc.; Medium Gauge Aluminum Deep Nose "J" Moulding Upper Bar.
3) Sommer & Maca Industries, Inc.; Heavy Gauge Aluminum Deep Nose "J" Moulding Lower Bar.

5. Bottom Trim: J-channels formed with front leg and back leg not less than 5/16 and 3/4 inch (7.9 and 19 mm) in height, respectively.
6. Top Trim: Formed with front leg with a height of 5/16 inch (7.9 mm) and back leg designed to fit into the pocket created by wall-mounted aluminum cleat.
7. Product: Subject to compliance with requirements, provide the following:

a. Bottom Trim: C. R. Laurence Co., Inc.; D638 FHA Type "J" Channel.
b. Top Trim: C. R. Laurence Co., Inc.; D 1638 Top Channel.
c. Cleat: C. R. Laurence Co., Inc.; D 1637M Mirror Mount System Cleat.

B. Mirror Bottom Clips: As indicated.

C. Mirror Top Clips: As indicated.

D. Plated Steel Hardware: Formed-steel shapes with plated finish indicated.

1. Profile: As indicated.

E. Fasteners: Fabricated of same basic metal and alloy as fastened metal and matching it in finished color and texture where fasteners are exposed.

F. Anchors and Inserts: Provide devices as required for mirror hardware installation. Provide toothed or lead-shield expansion-bolt devices for drilled-in-place anchors. Provide galvanized anchors and inserts for applications on inside face of exterior walls and where indicated.

2.5 FABRICATION

A. Mirror Sizes: To suit Project conditions, cut mirrors to final sizes and shapes.

B. Cutouts: Fabricate cutouts for notches and holes in mirrors without marring visible surfaces. Locate and size cutouts so they fit closely around penetrations in mirrors.

C. Mirror Edge Treatment: Flat polished edge.

1. Seal edges of mirrors after edge treatment to prevent chemical or atmospheric penetration of glass coating.

2. Require mirror manufacturer to perform edge treatment and sealing in factory immediately after cutting to final sizes.

D. Film-Backed Safety Mirrors: Apply film backing with pressure-sensitive adhesive coating over mirror backing paint as recommended in writing by film-backing manufacturer to produce a surface free of bubbles, blisters, and other imperfections. Use adhesives and film backing compatible with mirror backing paint as certified by mirror manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, over which mirrors are to be mounted, with Installer present, for compliance with installation tolerances, substrate preparation, and other conditions affecting performance.

1. Verify compatibility with and suitability of substrates, including compatibility of mirror mastic with existing finishes or primers.
2. Proceed with mirror installation only after unsatisfactory conditions have been corrected and surfaces are dry.

3.2 PREPARATION

A. Comply with mastic manufacturer's written installation instructions for preparation of substrates, including coating surfaces with mastic manufacturer's special bond coating where applicable.

3.3 INSTALLATION

A. General: Install mirrors to comply with mirror manufacturer's written instructions and with referenced GANA publications. Mount mirrors accurately in place in a manner that avoids distorting reflected images.

B. Provide a minimum air space of 1/8 inch (3 mm) between back of mirrors and mounting surface for air circulation between back of mirrors and face of mounting surface.

C. For wall-mounted mirrors, install mirrors with mastic and mirror hardware.

1. Attach mirror hardware securely to mounting surfaces with mechanical fasteners installed with anchors or inserts as applicable. Install fasteners so heads do not impose point loads on backs of mirrors.
2. For mirror hardware in the form of continuous J-channels at bottom, provide setting blocks 1/8 inch (3 mm) thick by 4 inches (100 mm) long at quarter points. To prevent trapping water, provide, between setting blocks, 2 slotted weeps not less than 1/4 inch (6.4 mm) wide by 3/8 inch (9.5 mm) long.
3. For mirror hardware in the form of a continuous J-channel at bottom and continuous top trim at top, fasten J-channel directly to wall and attach top trim to continuous cleat fastened directly to wall.

4. For metal or plastic clips, place a felt or plastic pad between mirror and each clip to prevent spalling of mirror edges.
5. Where indicated, install mirror hardware in the form of J-channels that are fabricated in single lengths to fit and cover top and bottom edges of mirrors.
6. Where indicated, install bottom trim and top clips. Fabricate bottom trim in single lengths to fit and cover bottom edges of mirrors. Locate top clips so they are symmetrically placed and evenly spaced.
7. Where indicated, install bottom and top clips symmetrically placed and evenly spaced.
8. Install mastic as follows:

    a. Apply barrier coat to mirror backing where approved in writing by manufacturers of mirrors and backing material.
    b. Apply mastic to comply with mastic manufacturer's written instructions for coverage and to allow air circulation between back of mirrors and face of mounting surface.
    c. After mastic is applied, align mirrors and press into place while maintaining a minimum air space of 1/8 inch (3 mm) between back of mirrors and mounting surface.

3.4 CLEANING AND PROTECTION

A. Protect mirrors from breakage and contaminating substances resulting from construction operations.

B. Do not permit edges of mirrors to be exposed to standing water.

C. Maintain environmental conditions that will prevent mirrors from being exposed to moisture from condensation or other sources for continuous periods of time.

END OF SECTION 088300

SECTION 089000 - LOUVERS AND VENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Adjustable, extruded-aluminum louvers.
   2. Fixed, formed metal louvers in hollow-metal doors

B. Related Sections:

   1. Division 04 Section "Unit Masonry" for building wall vents (brick vents) into masonry.
   2. Division 08 Section "Hollow Metal Doors and Frames" for louvers in hollow-metal doors.
   3. Division 09 Section "Exterior Painting" for field painting louvers.
   4. Division 23 Sections for louvers that are a part of mechanical equipment.
   5. Division 23 Section "Instrumentation and Control for HVAC" for electric, electronic, and pneumatic control of adjustable louvers.
   6. Division 26 Sections for electrical power connections for motor-operated adjustable louvers.

1.3 DEFINITIONS

A. Louver Terminology: Definitions of terms for metal louvers contained in AMCA 501 apply to this Section unless otherwise defined in this Section or in referenced standards.

B. Horizontal Louver: Louver with horizontal blades; i.e., the axes of the blades are horizontal.

C. Vertical Louver: Louver with vertical blades; i.e., the axes of the blades are vertical.

D. Drainable-Blade Louver: Louver with blades having gutters that collect water and drain it to channels in jambs and mullions, which carry it to bottom of unit and away from opening.

E. Storm-Resistant Louver: Louver that provides specified wind-driven rain performance, as determined by testing according to AMCA 500-L.

1.4 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design louvers, including comprehensive engineering analysis by a qualified professional engineer, using structural and seismic performance requirements and design criteria indicated.

B. Structural Performance: Louvers shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures shall be considered to act normal to the face of the building.
   1. Wind Loads: Determine loads based on a uniform pressure of 20 lbf/sq. ft. (957 Pa), acting inward or outward.

C. Seismic Performance: Louvers, including attachments to other construction, shall withstand the effects of earthquake motions determined according to SEI/ASCE 7.
   1. Component Importance Factor is 1.5.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes, without buckling, opening of joints, overstressing of components, failure of connections, or other detrimental effects.

   1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

E. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

1.5 SUBMITTALS

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

   1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.

B. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.

   1. Show weep paths, gaskets, flashing, sealant, and other means of preventing water intrusion.
   2. Show mullion profiles and locations.
   3. Wiring Diagrams: For power, signal, and control wiring for motorized adjustable louvers.

C. Samples for Verification: For each type of metal finish required.

D. Product Test Reports: Based on evaluation of comprehensive tests performed according to AMCA 500-L by a qualified testing agency or by manufacturer and witnessed by a qualified

testing agency, for each type of louver and showing compliance with performance requirements specified.

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain louvers and vents from single source from a single manufacturer where indicated to be of same type, design, or factory-applied color finish.

B. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
2. AWS D1.3, "Structural Welding Code - Sheet Steel."
3. AWS D1.6, "Structural Welding Code - Stainless Steel."

C. SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for fabrication, construction details, and installation procedures.

D. UL and NEMA Compliance: Provide motors and related components for motor-operated louvers that are listed and labeled by UL and comply with applicable NEMA standards.

1.7 PROJECT CONDITIONS

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. Galvanized-Steel Sheet: ASTM A 653/A 653M, G60 (Z180) zinc coating, mill phosphatized.

B. Fasteners: Use types and sizes to suit unit installation conditions.

1. Use tamper-resistant screws for exposed fasteners unless otherwise indicated.
2. For fastening galvanized steel, use hot-dip-galvanized steel or 300 series stainless-steel fasteners.
3. For color-finished louvers, use fasteners with heads that match color of louvers.

C. Postinstalled Fasteners for Concrete and Masonry: Torque-controlled expansion anchors, made from stainless-steel components, with capability to sustain, without failure, a load equal to 4 times the loads imposed, for concrete, or 6 times the load imposed, for masonry, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.

D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.2 FABRICATION, GENERAL

A. Assemble louvers in factory to minimize field splicing and assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

B. Maintain equal louver blade spacing, including separation between blades and frames at head and sill, to produce uniform appearance.

C. Fabricate frames, including integral sills, to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.

1. Frame Type: Channel unless otherwise indicated.

D. Include supports, anchorages, and accessories required for complete assembly.

E. Provide vertical mullions of type and at spacings indicated, but not more than recommended by manufacturer, or 72 inches (1830 mm) o.c., whichever is less.

1. Fully Recessed Mullions: Where indicated, provide mullions fully recessed behind louver blades. Where length of louver exceeds fabrication and handling limitations, fabricate with close-fitting blade splices designed to permit expansion and contraction.

F. Provide extended sills for recessed louvers.

G. Join frame members to each other and to fixed louver blades with fillet welds, threaded fasteners, or both, as standard with louver manufacturer unless otherwise indicated or size of louver assembly makes bolted connections between frame members necessary.

2.3 FIXED, FORMED-METAL LOUVERS

A. Horizontal, Drainable-Blade Louver:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

a. Air Balance Inc.; a Mestek company.
b. Air Flow Company, Inc.
c. Airolite Company, LLC (The).
d. American Warming and Ventilating, Inc.; a Mestek company.
e. Arrow United Industries; a division of Mestek, Inc.
f. Cesco Products; a division of Mestek, Inc.
g. Construction Specialties, Inc.
h. Dowco Products Group; Safe-Air of Illinois, Inc.
i. Greenheck Fan Corporation.
j. Industrial Louvers, Inc.

k. Metal Form Manufacturing Inc.
l. NCA Manufacturing, Inc.
m. Ruskin Company; Tomkins PLC.
n. United Enertech Corp.
o. Vent Products Company, Inc.

3. Louver Depth: 4 inches (100 mm)
4. Frame and Blade Material and Nominal Thickness: Galvanized-steel sheet, not less than 0.052 inch (1.32 mm) for frames and 0.040 inch (1.02 mm) for blades.
5. Mullion Type: Exposed.
6. Louver Performance Ratings:

   a. Free Area: Not less than 7.0 sq. ft. (0.65 sq. m) for 48-inch- (1220-mm-) wide by 48-inch- (1220-mm-) high louver.
   b. Point of Beginning Water Penetration: Not less than 800 fpm (4.1 m/s)
   c. Air Performance: Not more than 0.10-inch wg (25-Pa) static pressure drop at 700-fpm (3.6-m/s) free-area exhaust or intake velocity.

7. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

2.4 LOUVER SCREENS

A. General: Provide screen at each exterior louver.

1. Screen Location for Fixed Louvers: Interior face.
2. Screening Type: Bird screening.

B. Louver Screen Frames: Fabricate with mitered corners to louver sizes indicated.

1. Metal: Same kind and form of metal as indicated for louver to which screens are attached.
2. Finish: Same finish as louver frames to which louver screens are attached.
3. Type: Non-rewirable, U-shaped frames.

2.5 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.6 EXAMINATION

A. Examine substrates and openings, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

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

2.7 PREPARATION

A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

2.8 INSTALLATION

A. Locate and place louvers and vents level, plumb, and at indicated alignment with adjacent work.

B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.

C. Form closely fitted joints with exposed connections accurately located and secured.

D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.

E. Repair finishes damaged by cutting, welding, soldering, and grinding. Restore finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.

F. Protect unpainted galvanized and nonferrous-metal surfaces that will be in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.

G. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Division 07 Section "Joint Sealants" for sealants applied during louver installation.

2.9 ADJUSTING AND CLEANING

A. Test operation of adjustable louvers and adjust as needed to produce fully functioning units that comply with requirements.

B. Clean exposed surfaces of louvers and vents that are not protected by temporary covering, to remove fingerprints and soil during construction period. Do not let soil accumulate during construction period.

C. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.

D. Restore louvers and vents damaged during installation and construction so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Architect, remove damaged units and replace with new units.

1. Touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating.

END OF SECTION 089000

SECTION 092400 - CEMENT PLASTERING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Exterior vertical plasterwork (stucco).
2. Exterior horizontal and nonvertical plasterwork (stucco).

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each type of factory-prepared finish coat and for each color and texture specified.

PART 2 - PRODUCTS

2.1 METAL LATH

A. Expanded-Metal Lath: ASTM C 847, cold-rolled carbon-steel sheet with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized-zinc coating.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. CEMCO; California Expanded Metal Products Co.
b. Phillips Manufacturing Co.

2. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
3. Diamond-Mesh Lath: Self-furring, 3.4 lb/sq. yd. (1.8 kg/sq. m).

B. Wire-Fabric Lath:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. K-Lath; a Tree Island Steel Ltd. company.

C. Paper Backing: FS UU-B-790a, Type I, Grade D, Style 2 vapor-permeable paper

1. Provide paper-backed lath unless otherwise indicated.

2.2 ACCESSORIES

A. General: Comply with ASTM C 1063, and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.

B. Metal Accessories:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. CEMCO; California Expanded Metal Products Co.
   b. Phillips Manufacturing Co.

2. Foundation Weep Screed: Fabricated from hot-dip galvanized-steel sheet, ASTM A 653/A 653M, G60 (Z180) zinc coating.
3. Cornerite: Fabricated from metal lath with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized-zinc coating.
4. External- (Outside-) Corner Reinforcement: Fabricated from metal lath with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized-zinc coating.
5. Cornerbeads: Fabricated from zinc-coated (galvanized) steel.

6. Casing Beads: Fabricated from zinc-coated (galvanized) steel; square-edged style; with expanded flanges.
7. Control Joints: Fabricated from zinc-coated (galvanized) steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
8. Expansion Joints: Fabricated from zinc-coated (galvanized) steel; folded pair of unperforated screeds in M-shaped configuration; with expanded flanges.
9. Two-Piece Expansion Joints: Fabricated from zinc-coated (galvanized) steel; formed to produce slip-joint and square-edged reveal that is adjustable from 1/4 to 5/8 inch (6 to 16 mm) wide; with perforated flanges.

2.3 MISCELLANEOUS MATERIALS

A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Bonding Compound: ASTM C 932.

C. AS Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), unperforated.

D. Fasteners for Attaching Metal Lath to Substrates: ASTM C 1063.
1. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 10 percent by weight.

2.4 PLASTER MATERIALS

A. Portland Cement: ASTM C 150, Type I.

1. Color for Finish Coats: White.

B. Colorants for Job-Mixed Finish-Coats: Colorfast mineral pigments that produce finish plaster color to match Architect's sample.

C. Lime: ASTM C 206, Type S; or ASTM C 207, Type S.

D. Sand Aggregate: ASTM C 897.

1. Color for Job-Mixed Finish Coats: White.

E. Ready-Mixed Finish-Coat Plaster: Mill-mixed portland cement, aggregates, coloring agents, and proprietary ingredients.

1. Products:

a. California Stucco Products Corp.; Conventional Portland Cement Stucco.
b. ChemRex; Thoro Stucco.
c. La Habra Stucco.

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

F. Acrylic-Based Finish Coatings: Factory-mixed acrylic-emulsion coating systems, formulated with colorfast mineral pigments and fine aggregates; for use over portland cement plaster base coats. Include manufacturer's recommended primers and sealing topcoats for acrylic-based finishes.

2.5 PLASTER MIXES

A. General: Comply with ASTM C 926 for applications indicated.

1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. yd. (0.6 kg of fiber/cu. m) of cementitious materials.

B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:

1. Portland and Plastic Cement Mixes:

a. Scratch Coat: For cementitious material, mix 1 part plastic cement and 1 part portland cement. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
b. Brown Coat: For cementitious material, mix 1 part plastic cement and 1 part portland cement. Use 3 to 5 parts aggregate per part of cementitious material, but not less than volume of aggregate used in scratch coat.

C. Base-Coat Mixes for Use over Unit Masonry and Concrete: Single base (scratch) coat for two-coat plasterwork on low-absorption plaster bases as follows:

1. Portland Cement Mix: For cementitious material, mix 1 part portland cement and 0 to 3/4 part lime. Use 1-1/2 to 3 parts aggregate per part of cementitious material.
2. Portland and Masonry Cement Mix: For cementitious material, mix 1 part portland cement and 1 part masonry cement. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
3. Plastic Cement Mix: Use 1 part plastic cement and 2-1/2 to 4 parts aggregate.

D. Base-Coat Mixes for Use over Unit Masonry and Concrete: Single base (scratch) coat for two-coat plasterwork on high-absorption plaster bases as follows:

1. Portland Cement Mix: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
2. Masonry Cement Mix: Use 1 part masonry cement and 2-1/2 to 4 parts aggregate.
3. Portland and Masonry Cement Mix: For cementitious material, mix 1 part portland cement and 1 part masonry cement. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
4. Plastic Cement Mix: Use 1 part plastic cement and 2-1/2 to 4 parts aggregate.

E. Factory-Prepared Finish-Coat Mixes: For ready-mixed finish-coat plasters comply with manufacturer's written instructions.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Prepare smooth, solid substrates for plaster according to ASTM C 926.

B. Fire-Resistance-Rated Assemblies: Install components according to requirements for design designations from listing organization and publication indicated on Drawings.

C. Sound-Attenuation Blankets: Where required, install blankets before installing lath unless blankets are readily installed after lath has been installed on one side.

3.2 INSTALLING METAL LATH

Metal Lath: Install according to ASTM C 1063.

1. Flat-Ceiling and Horizontal Framing: Install flat diamond-mesh lath.
2. Partition Framing and Vertical Furring: Install woven-wire lath.

B. INSTALLING ACCESSORIES

C. Install according to ASTM C 1063 and at locations indicated on Drawings.

D. Reinforcement for External (Outside) Corners:

1. Install lath-type, external-corner reinforcement at exterior locations.
2. Install cornerbead at interior locations.

E. Control Joints: Locate as indicated on Drawings.

3.3 PLASTER APPLICATION

A. General: Comply with ASTM C 926.

B. Bonding Compound: Apply on unit masonry and concrete substrates for direct application of plaster.

C. Acrylic-Based Finish Coatings: Apply coating system, including primers, finish coats, and sealing topcoats, according to manufacturer's written instructions.

D. Plaster Finish Coats: Apply to provide float finish to match Architect's sample.

E. Acrylic-Based Finish Coatings: Apply coating system, including primers, finish coats, and sealing topcoats, according to manufacturer's written instructions.

F. Concealed Exterior Plasterwork: Where plaster application is used as a base for adhered finishes, omit finish coat.

G. Concealed Interior Plasterwork:

1. Where plaster application is concealed behind built-in cabinets, similar furnishings, and equipment, apply finish coat.
2. Where plaster application is used as a base for adhesive application of tile and similar finishes, omit finish coat.

3.4 PLASTER REPAIRS

A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

END OF SECTION 092400

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each texture finish indicated on same backing indicated for Work.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

A. Recycled Content of Gypsum Panel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 10 percent.

B. Regional Materials: Gypsum panel products shall be manufactured within 500 miles (800 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles (800 km) of Project site.

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

2.3 INTERIOR GYPSUM BOARD

A. Gypsum Wallboard: ASTM C 1396/C 1396M.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. American Gypsum.
b. Georgia-Pacific Building Products.
c. USG.

B. Gypsum Board, Type X: ASTM C 1396/C 1396M.

1. Thickness: 5/8 inch (15.9 mm).
2. Long Edges: Tapered.

C. Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.

1. Core: 5/8 inch (15.9 mm), Type X.
2. Long Edges: Tapered.
3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.4 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
2. Shapes:

a. Cornerbead.
b. LC-Bead: J-shaped; exposed long flange receives joint compound.
c. L-Bead: L-shaped; exposed long flange receives joint compound.
d. U-Bead: J-shaped; exposed short flange does not receive joint compound.
e. Expansion (control) joint.

2.5 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.

a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.

2.6 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

1. Laminating adhesive shall have a VOC content of 50 g/L or less).
2. Laminating adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

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.

E. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING PANELS

A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

B. Comply with ASTM C 840.

C. 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.

D. Prefill open joints and damaged surface areas.

E. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

F. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 2: Panels that are substrate for acoustical tile.
3. Level 3: Behind permanent cabinetry.

a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

4. Level 5: At all other locations.

a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

3.2 PROTECTION

A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 092900

SECTION 093000 - TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
   1. Floor tile (Showers and Utility Rm)
   2. Glazed wall tile. (see finish schedule and interior elevations)
   3. Glazed tile cove base (see Finish Schedule)
   4. Waterproof membrane for thin-set tile installations.
   5. Crack-suppression membrane for thin-set tile installations.
   6. Metal edge strips installed as part of tile installations.

B. Related Sections include the following:
   1. Division 03 Section "Cast-in-Place Concrete" for monolithic slab finishes specified for tile substrates.
   2. Division 09 Section "Gypsum Board" for water-resistant gypsum board.
   3. Division 09 Section “Portland Cement Plaster” for tile scheduled to be thinset over cement plaster substrates.

1.3 DEFINITIONS

A. Module Size: Actual tile size (minor facial dimension as measured per ASTM C 499) plus joint width indicated.

B. Facial Dimension: Nominal tile size as defined in ANSI A137.1.

1.4 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.

1.5 SUBMITTALS

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

B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

C. Samples for Initial Selection: For each type of tile and grout indicated. Include Samples of accessories involving color selection.

D. Samples for Verification:

1. Full-size units of each type and composition of tile and for each color and finish required.
2. Assembled samples with grouted joints for each type and composition of tile and for each color and finish required, at least 12 inches (300 mm) square and mounted on rigid panel. Use grout of type and in color or colors approved for completed work.
3. Full-size units of each type of trim and accessory for each color and finish required.
4. Stone thresholds in 6-inch (150-mm) lengths.
5. Metal edge strips in 6-inch (150-mm) lengths.

E. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.

F. Product Certificates: For each type of product, signed by product manufacturer.

G. Qualification Data: For Installer.

1.6 QUALITY ASSURANCE

A. Source Limitations for Tile: Obtain all tile of same type and color or finish from one source or producer.

1. Obtain tile from same production run and of consistent quality in appearance and physical properties for each contiguous area.

B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.

C. Source Limitations for Other Products: Obtain each of the following products specified in this Section through one source from a single manufacturer for each product:

1. Joint sealants.
2. Metal edge strips.

D. Mockups: Build mockups to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution.
1. Build mockup of each type of wall tile installation.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.7 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 in ANSI A137.1 for labeling sealed tile packages.

B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Store liquid latexes in unopened containers and protected from freezing.

E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

1.9 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size indicated.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified.
3. 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.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

5. Basis-of-Design Product: The design for each tile type is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

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.
2. For facial dimensions of tile, comply with requirements relating to tile sizes specified in Part 1 "Definitions" Article.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.

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 Architect's samples.

D. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

E. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer, unless otherwise indicated.

1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

2.3 TILE PRODUCTS

A. Manufacturers:

1. American Marazzi Tile, Inc.
2. American Olean; Div. of Dal-Tile International Corp.
3. Buchtal Corporation USA.
4. Cerim-Floor Gres Ceramiche.
5. Crossville Ceramics Company, L.P.
6. Daltile; Div. of Dal-Tile International Inc.
7. Florida Tile Industries, Inc.
8. GranitiFiandre.
9. Interceramic.
10. KPT, Inc.
11. Laufen USA.

12. Lone Star Ceramics Company.
13. Metropolitan Ceramics.
14. Monarch Tile, Inc.
15. Porcelanite, Inc.
16. Quarry Tile Company.

B. ANSI Ceramic Tile Standard: Provide Standard grade tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.

C. Glazed Ceramic Tile: Factory-mounted flat tile as follows:

1. Composition: Porcelain
2. Module Size: 2 by 2 inches (50.8 by 50.8 mm)
3. Thickness: 1/4 inch (6.35 mm).
4. Face: Plain with cushion edges.
5. Finish: Bright, opaque glaze.

D. Glazed Wall Tile: Flat tile as follows:

1. Module Size: 4-1/4 by 4-1/4 inches (108 by 108 mm).
2. Thickness: 5/16 inch (8 mm).
3. Face: Plain with cushion edges.
4. Finish: Bright, opaque glaze.
5. Mounting: Factory back-mounted.

E. Glazed Wall Tile Trim Units: Matching characteristics of adjoining flat tile and coordinated with sizes and coursing where applicable.

1. Base: Coved, module size 6 by 6 inches (152 by 152 mm).
2. Wainscot Cap: Bullnose
3. External Corners: Bullnose
4. Internal Corners: Field-butted square corners except with coved base and cap angle pieces designed to fit with stretcher shapes.

F. Glazed Wall Tile Trim Units: Matching characteristics of adjoining flat tile and coordinated with sizes and coursing of adjoining flat tile where applicable. Provide shapes as follows, selected from manufacturer's standard shapes:

1. Base for Portland Cement Mortar Installations: Coved, module size 4-1/4 by 4-1/4 inches (108 by 108 mm).
2. Base for Thin-Set Mortar Installations: Straight, module size 4-1/4 by 4-1/4 inches (108 by 108 mm).
3. Wainscot Cap for Portland Cement Mortar Installations: Bullnose cap, module size 4-1/4 by 4-1/4 inches (108 by 108 mm)
4. Wainscot Cap for Thin-Set Mortar Installations: Surface bullnose, module size 4-1/4 by 4-1/4 inches (108 by 108 mm).
5. Wainscot Cap for Flush Conditions: Regular flat tile for conditions where tile wainscot is shown flush with wall surface above.
6. External Corners for Portland Cement Mortar Installations: Bullnose shape with radius of at least 3/4 inch (19 mm), unless otherwise indicated.
7. External Corners for Thin-Set Mortar Installations: Surface bullnose.

8. Internal Corners: Field-butted square corners except with coved base and cap angle pieces designed to fit with stretcher shapes.

2.4 WATERPROOFING & CRACK-SUPPRESSION MEMBRANES FOR THIN-SET TILE INSTALLATIONS

A. General: Manufacturer's standard product that complies with ANSI A118.10**,** selected from the following.

B. Chlorinated-Polyethylene-Sheet Product: Nonplasticized, chlorinated polyethylene faced on both sides with high-strength, nonwoven polyester fabric, for adhering to latex-portland cement mortar; 60 inches (1524 mm) wide by 0.030-inch (0.76-mm) nominal thickness.

1. Product: Noble Company (The); Nobleseal TS.

C. PVC-Sheet Product: Two layers of PVC sheet heat-fused together and to facings of bondable nonwoven polyester, for adhering to latex-portland cement mortar; 60 inches (1524 mm) wide by 0.040-inch (1.01-mm) nominal thickness.

1. Product: Compotite Corporation; Composeal Gold.

D. Polyethylene-Sheet Product: Polyethylene faced on both sides with fleece webbing for adhering to latex-portland cement mortar; 39 inches (1000 mm) wide by 0.008-inch (0.203-mm) nominal thickness.

1. Product: Schluter Systems L.P.; KERDI.

E. Corrugated-Polyethylene Product: Corrugated polyethylene with dovetail-shaped corrugations for adhering to latex-portland cement mortar and with anchoring webbing on the underside; 39 inches (1000 mm) wide by 3/16-inch (4-mm) nominal thickness.

1. Product: Schluter Systems L.P.; DITRA.

F. Fabric-Reinforced, Modified-Bituminous-Sheet Product: Self-adhering SBS-modified-bituminous sheet with woven reinforcement facing for adhering to latex-portland cement mortar; 36 inches (914 mm) wide by 0.040-inch (1.01-mm) nominal thickness.

1. Product: National Applied Construction Products, Inc.; Strataflex.

G. Fabric-Reinforced, Fluid-Applied Product: System consisting of liquid-latex rubber and fabric reinforcement.

1. Products:

a. Custom Building Products; Trowel & Seal Waterproofing and Anti-Fracture Membrane.
b. LATICRETE International Inc.; Laticrete 9235 Waterproof Membrane.
c. MAPEI Corporation; PRP M19.
d. Summitville Tiles, Inc.; S-9000.

H. Unreinforced, Fluid-Applied Product: Liquid-latex rubber in a consistency suitable for trowel application and intended for use as waterproofing.

1. Products:

a. Boiardi Products Corporation; Elastiment 324.
b. Custom Building Products; LevelQuick Waterproofing and Anti-Fracture Membrane.
c. Jamo Inc.; Waterproof.

I. Latex-Portland Cement Product: Flexible mortar consisting of cement-based mix and acrylic-latex additive.

1. Products:

a. Boiardi Products Corporation; Elastiment 323.
b. MAPEI Corporation; PRP 315.
c. Southern Grouts & Mortars, Inc.; Southcrete 1100.
d. TEC Specialty Products Inc.; TA-324, Triple Flex.

J. Urethane Waterproofing and Tile-Setting Adhesive: One-part liquid-applied urethane**,** with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24), in a consistency suitable for trowel application and intended for use as both waterproofing and tile-setting adhesive in a two-step process.

1. Products:

a. Bostik; Hydroment Ultra-Set.
b. Southern Grouts & Mortars, Inc.; Deck-Seal 1000.

2.5 SETTING AND GROUTING MATERIALS

A. Manufacturers:

1. Atlas Minerals & Chemicals, Inc.
2. Boiardi Products Corporation.
3. Bonsal, W. R., Company.
4. Bostik.
5. C-Cure.
6. Custom Building Products.
7. DAP, Inc.
8. Jamo Inc.
9. LATICRETE International Inc.
10. MAPEI Corporation.
11. Southern Grouts & Mortars, Inc.
12. Summitville Tiles, Inc.
13. TEC Specialty Products Inc.

B. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4, consisting of the following:

1. Prepackaged dry-mortar mix containing dry, redispersible, ethylene vinyl acetate additive to which only water must be added at Project site.
2. Prepackaged dry-mortar mix combined with acrylic resin or styrene-butadiene-rubber liquid-latex additive.

a. For wall applications, provide nonsagging mortar that complies with Paragraph F-4.6.1 in addition to the other requirements in ANSI A118.4.

C. Medium-Bed, Latex-Portland Cement Mortar: Provide materials composed as follows, with physical properties equaling or exceeding those required for thin-set mortars based on testing of medium-bed specimens according to ANSI A118.4:

1. Prepackaged dry-mortar mix containing dry, redispersible, ethylene vinyl acetate additive to which only water must be added at Project site.
2. Prepackaged dry-mortar mix combined with acrylic resin or styrene-butadiene-rubber liquid-latex additive.

D. Chemical-Resistant, Water-Cleanable, Tile-Setting and -Grouting Epoxy: ANSI A118.3, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

1. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 deg F (60 deg C) and 212 deg F (100 deg C), respectively, and certified by manufacturer for intended use.

E. Water-Cleanable, Tile-Setting Epoxy Adhesive: ANSI A118.3**,** with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

F. Chemical-Resistant Furan Mortar: ANSI A118.5, with carbon filler, unless otherwise indicated.

G. Organic Adhesive: ANSI A136.1, Type I, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

H. Sand-Portland Cement Grout: ANSI A108.10, composed of white or gray cement and white or colored aggregate as required to produce color indicated.

I. Standard Sanded Cement Grout: ANSI A118.6, color as indicated.

J. Standard Unsanded Cement Grout: ANSI A118.6, color as indicated.

K. Polymer-Modified Tile Grout: ANSI A118.7, color as indicated.

1. Polymer Type: Ethylene vinyl acetate, in dry, redispersible form, prepackaged with other dry ingredients.
2. Polymer Type: Acrylic resin in liquid-latex form for addition to prepackaged dry-grout mix.

3. Polymer Type: Either ethylene vinyl acetate, in dry, redispersible form, prepackaged with other dry ingredients, or acrylic resin or styrene-butadiene rubber in liquid-latex form for addition to prepackaged dry-grout mix.

    a. Unsanded grout mixture for joints 1/8 inch (3.2 mm) and narrower.
    b. Sanded grout mixture for joints 1/8 inch (3.2 mm) and wider.

L. Chemical-Resistant Furan Grout: ANSI A118.5.

M. Grout for Pregrouted Tile Sheets: Same silicone rubber used in factory to pregrout tile sheets.

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 in Division 07 Section "Joint Sealants."

1. Use sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints, unless otherwise indicated.

C. One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and extreme temperatures.

1. Products:

    a. Dow Corning Corporation; Dow Corning 786.
    b. GE Silicones; Sanitary 1700.
    c. Pecora Corporation; Pecora 898 Sanitary Silicone Sealant.
    d. Tremco, Inc.; Tremsil 600 White.

D. Multipart, Pourable Urethane Sealant for Use T: ASTM C 920; Type M; Grade P; Class 25; Uses T, M, A, and, as applicable to joint substrates indicated, O.

1. Products:

    a. Bostik; Chem-Calk 550.
    b. Mameco International, Inc.; Vulkem 245.
    c. Pecora Corporation; NR-200 Urexpan.
    d. Tremco, Inc.; THC-900.

E. Chemical-Resistant Sealants: For chemical-resistant floors, provide chemical-resistant elastomeric sealant of type recommended and produced by chemical-resistant mortar and grout manufacturer for type of application indicated, with proven service record and compatibility with tile and other setting materials, and with chemical resistance equivalent to mortar/grout. Include primer and backer rod recommended by manufacturer.

2.7 MISCELLANEOUS MATERIALS

A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

B. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications, stainless steel; ASTM A 666, 300 Series exposed-edge material.
   1. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as temporary protective coating for tile.

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.

D. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints that does not change color or appearance of grout.

   1. Available Products:

      a. Bonsal, W. R., Company; Grout Sealer.
      b. Bostik; CeramaSeal Grout Sealer.
      c. C-Cure; Penetrating Sealer 978.
      d. Southern Grouts & Mortars, Inc.; Silicone Grout Sealer.
      e. Summitville Tiles, Inc.; SL-15, Invisible Seal Penetrating Grout and Tile Sealer.
      f. TEC Specialty Products Inc.; TA-256 Penetrating Silicone Grout Sealer.

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, with Installer present, 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 of 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 joint locations in consultation with Architect.

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

3.2 PREPARATION

A. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.

B. Provide concrete substrates for tile floors installed with thin-set mortar that comply with flatness tolerances specified in referenced ANSI A108 Series of tile installation standards.

1. Fill cracks, holes, and depressions with trowelable leveling and patching compound according to tile-setting material manufacturer's written instructions. Use product specifically recommended by tile-setting material manufacturer.
2. Remove protrusions, bumps, and ridges by sanding or grinding.

C. Blending: For tile exhibiting color variations within ranges selected during Sample submittals, verify that tile has been factory blended and packaged so tile units taken from one package show same range of 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.

D. Field-Applied Temporary Protective Coating: Where indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 INSTALLATION, GENERAL

A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 Series "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 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 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 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 indicated 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 in Division 07 Section "Joint Sealants."

H. Grout tile to comply with requirements of the following tile installation standards:

1. For ceramic tile grouts (sand-portland cement; dry-set, commercial portland cement; and latex-portland cement grouts), comply with ANSI A108.10.

I. At showers, tubs, and where indicated, install cementitious backer units and treat joints to comply with ANSI A108.11 and manufacturer's written instructions for type of application indicated.

3.4 CRACK-SUPPRESSION MEMBRANE INSTALLATION

A. Install crack-suppression membrane to comply with manufacturer's written instructions to produce membrane of uniform thickness bonded securely to substrate.

3.5 WALL TILE INSTALLATION

A. Install types of tile designated for wall installations to comply with requirements in the Wall Tile Installation Schedule, including those referencing TCA installation methods and ANSI setting-bed standards.

B. Install metal lath and scratch coat for walls to comply with ANSI A108.1A, Section 4.1.

C. Joint Widths: Install tile on walls with the following joint widths:
1. Glazed Wall Tile: 1/16 inch (1.6 mm).

3.6 CLEANING AND PROTECTING

A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

1. Remove latex-portland cement grout residue from tile as soon as possible.
2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
3. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent it from clogging drains.

B. When recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.

C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.

D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

3.7 FLOOR TILE INSTALLATION SCHEDULE

3.8 WALL TILE INSTALLATION SCHEDULE

A. Tile Installation: Interior wall installation over sound, dimensionally stable masonry or concrete; thin-set mortar; TCA W202 and ANSI A108.5.

1. Tile Type: Glazed wall tile.
2. Thin-Set Mortar: Latex- portland cement mortar.
3. Grout: Polymer-modified unsanded grout.

END OF SECTION 093000

SECTION 095123 - ACOUSTICAL TILE CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes acoustical tiles and concealed suspension systems for ceilings.

1.2 SUBMITTALS

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

B. Coordination Drawings: Drawn to scale and coordinating acoustical tile ceiling installation with hanger attachment to building structure and ceiling mounted items. Show size and location of initial access modules.

C. Samples: For each exposed finish.

D. Research/evaluation reports.

E. Maintenance data.

1.3 QUALITY ASSURANCE

A. Acoustical Testing Agency Qualifications: An independent testing laboratory, or an NVLAP-accredited laboratory.

B. Fire-Test-Response Characteristics:

1. Fire-Resistance Characteristics: Where indicated, provide acoustical tile ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

    a. Identify materials with appropriate markings of applicable testing and inspecting agency.

2. Surface-Burning Characteristics: Acoustical tiles complying with ASTM E 1264 for Class A materials, when tested per ASTM E 84.

    a. Smoke-Developed Index: 450 or less.

C. Seismic Standard: Comply with the following:

1. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E 580.

2. CISCA's Recommendations for Acoustical Ceilings: Comply with CISCA's "Recommendations for Direct-Hung Acoustical Tile and Lay-in Panel Ceilings--Seismic Zones 0-2."
3. CISCA's Guidelines for Systems Requiring Seismic Restraint: Comply with CISCA's "Guidelines for Seismic Restraint of Direct-Hung Suspended Ceiling Assemblies--Seismic Zones 3 & 4."
4. UBC Standard 25-2, "Metal Suspension Systems for Acoustical Tile and for Lay-in Panel Ceilings."
5. ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 9, "Earthquake Loads."

D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Preinstallation Conference: Conduct conference at Project site.

1.4 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Units: Full-size tiles equal as much as possible.
2. Suspension System Components: Quantity of each concealed grid and exposed component equal as much as possible.

PART 2 - PRODUCTS

2.1 ACOUSTICAL TILE CEILINGS, GENERAL

A. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

1. Anchors in Concrete: Expansion anchors fabricated from corrosion-resistant materials, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing per ASTM E 488 or ASTM E 1512 as applicable, conducted by a qualified testing and inspecting agency.
2. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM E 1190, conducted by a qualified testing and inspecting agency.

B. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.

1. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch diameter wire.

C. Seismic struts and seismic clips.

D. Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.

2.2 ACOUSTICAL TILES FOR ACOUSTICAL TILE CEILING per reflected ceiling plan

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

B. Products: Subject to compliance with requirements, provide one of the following:

1. Armstrong World Industries, Inc.; Kanopi, Dune Second Look or Equal.

2.3 METAL SUSPENSION SYSTEM FOR ACOUSTICAL TILE CEILING per details

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

B. Products: Subject to compliance with requirements, provide one of the following:

1. Armstrong World Industries, Inc.; designed for Panels Specified.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with ASTM C 636 and seismic design requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

B. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders.

C. Suspend ceiling hangers from building's structural members, plumb and free from contact with insulation or other objects within ceiling plenum. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, counter splaying, or other equally effective means. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers, use trapezes or equivalent devices.

When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.

1. Do not support ceilings directly from permanent metal forms or floor deck; anchor into concrete slabs.
2. Do not attach hangers to steel deck tabs or to steel roof deck.

D. Install edge moldings and trim of type indicated at perimeter of acoustical tile ceiling area and where necessary to conceal edges of acoustical tiles. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely.

E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

F. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension system flanges into kerfed edges so tile-to-tile joints are closed by double lap of material.

END OF SECTION 095123

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Resilient base.
2. Resilient stair accessories.
3. Resilient molding accessories.

B. Related Sections:

1. Division 09 Section "Resilient Sheet Flooring" for resilient sheet floor coverings.

1.3 SUBMITTALS

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

B. Samples for Initial Selection: For each type of product indicated.

C. Samples for Verification: For each type of product indicated, in manufacturer's standard-size Samples but not less than 12 inches Long, of each resilient product color, texture, and pattern required.

D. Product Schedule: For resilient products. Use same designations indicated on Drawings.

1.4 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

B. Mockups: Provide resilient products with mockups specified in other Sections.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F .

1.6 PROJECT CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F , in spaces to receive resilient products during the following time periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F .

C. Install resilient products after other finishing operations, including painting, have been completed.

1.7 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

PART 2 - PRODUCTS

2.1 RESILIENT BASE

A. Resilient Base:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Flexco, Inc.
   b. Johnsonite.
   c. Roppe Corporation, USA.

B. Resilient Base Standard: ASTM F 1861.

1. Material Requirement: Type TP (rubber, thermoplastic)
2. Manufacturing Method: Group I (solid, homogeneous)
3. Style: Cove (base with toe).

C. Minimum Thickness: 1/8 inch (3.2 mm)

D. Height: 4 inches (102 mm)

E. Lengths: Cut lengths 48 inches (1219 mm) long or coils in manufacturer's standard length.

F. Outside Corners: Job formed or preformed.

G. Inside Corners: Job formed or preformed.

H. Finish: As selected by Architect from manufacturer's full range.

I. Colors and Patterns: As selected by Architect from full range of industry colors.

2.2 RESILIENT MOLDING ACCESSORY

A. Resilient Molding Accessory:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Flexco, Inc.
   b. Johnsonite.
   c. Roppe Corporation, USA.

B. Description: Transition strips

C. Material: Rubber.

D. Profile and Dimensions: As indicated.

E. Colors and Patterns: As selected by Architect from full range of industry colors.

2.3 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

1. Use adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

   a. Cove Base Adhesives: Not more than 50 g/L.
   b. Rubber Floor Adhesives: Not more than 60 g/L.

C. Stair-Tread-Nose Filler: Two-part epoxy compound recommended by resilient tread manufacturer to fill nosing substrates that do not conform to tread contours.

D. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edges of tiles, and in maximum available lengths to minimize running joints.

E. Floor Polish: Provide protective liquid floor polish products as recommended by resilient stair tread manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates for Resilient Stair Treads and Accessories: Prepare according to ASTM F 710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings 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.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer.
4. Moisture Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.

    a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
    b. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have maximum 75 percent relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install resilient products until they are same temperature as the space where they are to be installed.

1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

E. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G. Preformed Corners: Install preformed corners before installing straight pieces.

H. Job-Formed Corners:

1. Outside Corners: Use straight pieces of maximum lengths possible. Form without producing discoloration (whitening) at bends.
2. Inside Corners: Use straight pieces of maximum lengths possible.

3.4 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of carpet that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.

B. Perform the following operations immediately after completing resilient product installation:

1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum surfaces thoroughly.

3. Damp-mop surfaces to remove marks and soil.

C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Cover resilient products until Substantial Completion.

END OF SECTION 096513

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes surface preparation and the application of paint systems on the following interior substrates:

1. Concrete.
2. Steel.
3. Galvanized metal.
4. Aluminum (not anodized or otherwise coated).
5. Wood.
6. Gypsum board.

1.2 SUBMITTALS

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

B. Samples: For each finish and for each color and texture required.

C. Product List: Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

1.3 QUALITY ASSURANCE

A. MPI Standards:

1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

B. Mockups: Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

a. Wall and Ceiling Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
b. Other Items: Architect will designate items or areas required.

2. Apply benchmark samples after permanent lighting and other environmental services have been activated.
3. Final approval of color selections will be based on benchmark samples.

a. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.

PART 2 - PRODUCTS

2.1 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base:

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Dry-Fog Coatings: 400 g/L.
4. Primers, Sealers, and Undercoaters: 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: 340 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Floor Coatings: 100 g/L.
9. Shellacs, Clear: 730 g/L.
10. Shellacs, Pigmented: 550 g/L.

D. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

3. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
4. Restricted Components: Paints and coatings shall not contain any of the following:

a. Acrolein.
b. Acrylonitrile.
c. Antimony.

d. Benzene.
e. Butyl benzyl phthalate.
f. Cadmium.
g. Di (2-ethylhexyl) phthalate.
h. Di-n-butyl phthalate.
i. Di-n-octyl phthalate.
j. 1,2-dichlorobenzene.
k. Diethyl phthalate.
l. Dimethyl phthalate.
m. Ethylbenzene.
n. Formaldehyde.
o. Hexavalent chromium.
p. Isophorone.
q. Lead.
r. Mercury.
s. Methyl ethyl ketone.
t. Methyl isobutyl ketone.
u. Methylene chloride.
v. Naphthalene.
w. Toluene (methylbenzene).
x. 1,1,1-trichloroethane.
y. Vinyl chloride.

E. Colors: As selected by Architect from manufacturer's full range.

2.2 PRIMERS/SEALERS

A. Interior Latex Primer/Sealer: MPI #50.

1. VOC Content: E Range of E2.
2. Environmental Performance Rating: EPR 2.

B. Interior Alkyd Primer/Sealer: MPI #45.

1. VOC Content: E Range of E2.

C. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint systems indicated.

2.3 METAL PRIMERS

A. Alkyd Anticorrosive Metal Primer: MPI #79.

1. VOC Content: E Range of E2

B. Quick-Drying Alkyd Metal Primer: MPI #76.

1. VOC Content: E Range of E2

C. Rust-Inhibitive Primer (Water Based): MPI #107.

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 2.

D. Cementitious Galvanized-Metal Primer: MPI #26.

1. VOC Content: E Range of E1.

E. Waterborne Galvanized-Metal Primer: MPI #134.

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 2.

F. Vinyl Wash Primer: MPI #80.

1. VOC Content: E Range of E2

G. Quick-Drying Primer for Aluminum: MPI #95.

1. VOC Content: E Range of E2

2.4 WOOD PRIMERS

A. Interior Latex-Based Wood Primer: MPI #39.

1. VOC Content: E Range of E2].
2. Environmental Performance Rating: EPR 2.

2.5 LATEX PAINTS

A. Interior Latex (Flat): MPI #53 (Gloss Level 1).

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 1.5.

B. Interior Latex (Low Sheen): MPI #44 (Gloss Level 2).

1. VOC Content: E Range of E2.
2. Environmental Performance Rating: EPR 2.

C. Interior Latex (Eggshell): MPI #52 (Gloss Level 3).

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 2.

D. Interior Latex (Satin): MPI #43 (Gloss Level 4).

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 2.5.

E. Interior Latex (Semigloss): MPI #54 (Gloss Level 5).

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 3.

F. Interior Latex (Gloss): MPI #114 (Gloss Level 6, except minimum gloss of 65 units at 60 deg).

1. VOC Content: E Range of E2].
2. Environmental Performance Rating: EPR 3.

G. Institutional Low-Odor/VOC Latex (Flat): MPI #143 (Gloss Level 1).

1. VOC Content: E Range of E3.
2. Environmental Performance Rating: EPR 4.

H. Institutional Low-Odor/VOC Latex (Low Sheen): MPI #144 (Gloss Level 2).

1. VOC Content: E Range of E3.
2. Environmental Performance Rating: EPR 4.5.

I. Institutional Low-Odor/VOC Latex (Eggshell): MPI #145 (Gloss Level 3).

1. VOC Content: E Range of E3.
2. Environmental Performance Rating: EPR 4.5.

J. Institutional Low-Odor/VOC Latex (Semigloss): MPI #147 (Gloss Level 5).

1. VOC Content: E Range of E3.
2. Environmental Performance Rating: EPR 3.

K. High-Performance Architectural Latex (Low Sheen): MPI #138 (Gloss Level 2).

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 5.

L. High-Performance Architectural Latex (Eggshell): MPI #139 (Gloss Level 3).

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 5.

M. High-Performance Architectural Latex (Satin): MPI #140 (Gloss Level 4).

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 4.5.

N. High-Performance Architectural Latex (Semigloss): MPI #141 (Gloss Level 5).

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 6.

O. Exterior Latex (Flat): MPI #10 (Gloss Level 1).

1. VOC Content: E Range of E2

P. Exterior Latex (Semigloss): MPI #11 (Gloss Level 5).

1. VOC Content: E Range of E2

Q. Exterior Latex (Gloss): MPI #119 (Gloss Level 6, except minimum gloss of 65 units at 60 deg).

1. VOC Content: E Range of E2

2. VOC Content: E Range of E2.

2.6 QUICK-DRYING ENAMELS

A. Quick-Drying Enamel (Semigloss): MPI #81 (Gloss Level 5).

1. VOC Content: E Range of E2

B. Quick-Drying Enamel (High Gloss): MPI #96 (Gloss Level 7).

1. VOC Content: E Range of E2

2.7 TEXTURED COATING

A. Latex Stucco and Masonry Textured Coating: MPI #42.

1. VOC Content: E Range of E2

2.8 FLOOR COATINGS

A. Interior Concrete Floor Stain: MPI #58.

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 2.

B. Interior/Exterior Clear Concrete Floor Sealer (Water Based): MPI #99.

1. VOC Content: E Range of E2

C. Interior/Exterior Clear Concrete Floor Sealer (Solvent Based): MPI #104.

1. VOC Content: E Range of E2

D. Interior/Exterior Latex Floor and Porch Paint (Low Gloss): MPI #60 (maximum Gloss Level 3).

1. VOC Content: E Range of E2
2. Environmental Performance Rating: EPR 3.

E. Exterior/Interior Alkyd Floor Enamel (Gloss): MPI #27 (Gloss Level 6).

1. VOC Content: E Range of E2.
2. Additives: Manufacturer's standard additive to increase skid resistance of painted surface.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Masonry (Clay and CMU): 12 percent.
3. Wood: 15 percent.
4. Gypsum Board: 12 percent.
5. Plaster: 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.

1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION AND APPLICATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

D. Painting Mechanical and Electrical Work: Paint items exposed in equipment rooms and occupied spaces including, but not limited to, the following:

1. Mechanical Work:

    a. Uninsulated metal piping.
    b. Uninsulated plastic piping.
    c. Pipe hangers and supports.
    d. Tanks that do not have factory-applied final finishes.
    e. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
    f. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
    g. Mechanical equipment that is indicated to have a factory-primed finish for field painting.

2. Electrical Work:

    a. Switchgear.
    b. Panelboards.
    c. Electrical equipment that is indicated to have a factory-primed finish for field painting.

E. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

F. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.3 INTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Latex System: MPI INT 3.1E.

    a. Prime Coat: Interior latex matching topcoat.
    b. Intermediate Coat: Interior latex matching topcoat.
    c. Topcoat: Interior latex gloss.

2. Latex Over Sealer System: MPI INT 3.1A.

    a. Prime Coat: Interior latex primer/sealer.
    b. Intermediate Coat: Interior latex matching topcoat.
    c. Topcoat: Interior latex.

3. Latex Over Latex Aggregate System: MPI INT 3.1B.

    a. Prime Coat: Latex stucco and masonry textured coating.
    b. Intermediate Coat: Exterior latex matching topcoat.
    c. Topcoat: Exterior latex gloss.

4. Clear Sealer System: MPI INT 3.2F.

a. First Coat: Interior/exterior clear concrete floor sealer (solvent based).
b. Topcoat: Interior/exterior clear concrete floor sealer (solvent based).

5. Water-Based Clear Sealer System: MPI INT 3.2G.

a. First Coat: Interior/exterior clear concrete floor sealer (water based).
b. Topcoat: Interior/exterior clear concrete floor sealer (water based).

B. Steel Substrates:

1. Quick-Drying Enamel System: MPI INT 5.1A.

a. Prime Coat: Quick-drying alkyd metal primer.
b. Intermediate Coat: Quick-drying enamel matching topcoat.
c. Topcoat: Quick-drying enamel high gloss.

C. Galvanized-Metal Substrates:

1. Latex Over Waterborne Primer System: MPI INT 5.3J.

a. Prime Coat: Waterborne galvanized-metal primer.
b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex semigloss.

D. Glue-Laminated Beam and Column Substrates:

1. Latex System: MPI INT 6.1M.

a. Prime Coat: Interior latex-based wood primer.
b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex semigloss.

E. Dressed Lumber Substrates: Including architectural woodwork

1. Latex System: MPI INT 6.3T.

a. Prime Coat: Interior latex-based wood primer.
b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex **(**gloss**)**.

F. Dimension Lumber Substrates, Nontraffic Surfaces: Including exposed beams.

1. Latex System: MPI INT 6.2D.

a. Prime Coat: Interior latex-based wood primer.
b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex semigloss.

2. Latex Over Alkyd Primer System: MPI INT 6.2A.

a. Prime Coat: Interior alkyd primer/sealer.

G. Gypsum Board Substrates:

1. Latex System: MPI INT 9.2A.

a. Prime Coat: Interior latex primer/sealer.
b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex low sheen.

END OF SECTION 099123

SECTION 101400 - SIGNAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Dimensional characters.
2. Panel signs.
3. Photoluminescent signs.

B. Related Sections include the following:
1. Division 26 Section "Interior Lighting" for illuminated Exit signs.

1.3 DEFINITIONS

A. ADA-ABA Accessibility Guidelines: U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines."

1.4 SUBMITTALS

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

B. Shop Drawings: Show fabrication and installation details for signs.

1. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
2. Provide message list, typestyles, graphic elements, including tactile characters and Braille, and layout for each sign.
3. Wiring Diagrams: Power, signal, and control wiring.

C. Samples for Initial Selection: Manufacturer's color charts consisting of actual units or sections of units showing the full range of colors available.

D. Sign Schedule: Use same designations indicated on Drawings.

E. Maintenance Data: For signs to include in maintenance manuals.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

B. Source Limitations for Signs: Obtain each sign type indicated from one source from a single manufacturer.

C. Regulatory Requirements: Comply with applicable provisions in ADA-ABA Accessibility Guidelines .

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.6 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when weather conditions permit installation of signs in exterior locations to be performed according to manufacturers' written instructions and warranty requirements.

B. Field Measurements: Verify recess openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.7 COORDINATION

A. For signs supported by or anchored to permanent construction, advise installers of anchorage devises about specific requirements for placement of anchorage. Provide anchorage to meet current CBC requirements and architects approval.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

    a. Deterioration of metal and polymer finishes beyond normal weathering.
    b. Deterioration of embedded graphic image colors and sign lamination Verify available warranties for units and components and insert number in subparagraph below.

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), Type UVA (UV absorbing).

B. Applied Vinyl: Die-cut characters from vinyl film of nominal thickness of 3 mils with pressure-sensitive adhesive backing, suitable for exterior applications.

2.2 PANEL SIGNS

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. ACE Sign Systems, Inc.
2. Advance Corporation; Braille-Tac Division.
3. Allen Industries Architectural Signage
4. Allenite Signs; Allen Marking Products, Inc.
5. APCO Graphics, Inc.
6. ASI-Modulex, Inc.
7. Best Sign Systems Inc.
8. Bunting Graphics, Inc.
9. Fossil Industries, Inc.
10. Gemini Incorporated.
11. Grimco, Inc.
12. Innerface Sign Systems, Inc.
13. InPro Corporation
14. Matthews International Corporation; Bronze Division.
15. Mills Manufacturing Company.
16. Mohawk Sign Systems.

C. Laminated Interior Room Signs (12/A8.8) for every room: Solid phenolic panel core with graphic image covered with thermosetting resin face layer.

1. Surface Finish: Mat.
2. Edge Condition: Square cut.
3. Corner Condition: Rounded to ½”radius.
4. Thickness: 1/4 inch (6 mm).

D. Tactile and Braille Sign: Manufacturer's standard process for producing text and symbols complying with ADA-ABA Accessibility Guidelines and with ICC/ANSI A117.1. Text shall be accompanied by Grade 2 Braille. Produce precisely formed characters with square-cut edges free from burrs and cut marks; Braille dots with domed or rounded shape.

1. Panel Material: Opaque acrylic sheet.
2. Raised-Copy Thickness: Not less than 1/32 inch (0.8 mm).

E. Colored Coatings for Acrylic Sheet: For copy and background colors, provide colored coatings, including inks, dyes, and paints, that are recommended by acrylic manufacturers for optimum adherence to acrylic surface and are UV and water resistant for five years for application intended.

1. Color: As selected by Architect from manufacturer's full range.

2.3 PHOTOLUMINESCENT SIGNS

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. Evenlite Inc.
2. Holophane Corporation.
3. Isolite Corporation.
4. Johnsonite; Division of Duramax, Inc.

C. Photoluminescent Exit Signs: Self-contained, single or double face, as follows:

1. Manufacturer's standard plastic frame with translucent lettering and transparent polycarbonate face.
2. Exit sign, UL 924.
3. Mounting: As indicated.

a. Ceiling mounted with concealed anchors.

4. Face Color: Green.
5. Frame Color: As selected by Architect from manufacturer's full range.
6. Service Life: 20 years.

2.4 ACCESSORIES

A. Anchors and Inserts: Provide nonferrous-metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion-bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

2.5 FABRICATION

A. General: Provide manufacturer's standard signs of configurations indicated.

1. Welded Connections: Comply with AWS standards for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of

exposed side. Clean exposed welded surfaces of welding flux and dress exposed and contact surfaces.

2. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.
3. Preassemble signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in location not exposed to view after final assembly.
4. Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.

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. 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.

2.7 ACRYLIC SHEET FINISHES

A. Colored Coatings for Acrylic Sheet: For copy and background colors, provide colored coatings, including inks, dyes, and paints, that are recommended by acrylic manufacturers for optimum adherence to acrylic surface and that are UV and water resistant for five years for application intended.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

B. Verify that items including anchor inserts are sized and located to accommodate signs.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Locate signs and accessories where indicated, using mounting methods of types described and complying with manufacturer's written instructions.

1. Install signs level, plumb, and at heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Interior Wall Signs: Install signs on walls adjacent to latch side of door where applicable. Where not indicated or possible, such as double doors, install signs on nearest adjacent walls. Locate to allow approach within 3 inches (75 mm) of sign without encountering protruding objects or standing within swing of door.

B. Wall-Mounted Signs: Comply with sign manufacturer's written instructions except where more stringent requirements apply.

1. Two-Face Tape: Mount signs to smooth, nonporous surfaces. Do not use this method for vinyl-covered or rough surfaces.
2. Hook-and-Loop Tapes: Mount signs to smooth, nonporous surfaces.
3. Magnetic Tape: Mount signs to smooth, nonporous surfaces.
4. Silicone-Adhesive Mounting: Attach signs to irregular, porous, or vinyl-covered surfaces.
5. Shim Plate Mounting: Provide 1/8-inch- (3-mm-) thick, concealed aluminum shim plates with predrilled and countersunk holes, at locations indicated, and where other mounting methods are not practicable. Attach plate with fasteners and anchors suitable for secure attachment to substrate. Attach panel signs to plate using method specified above.
6. Mechanical Fasteners: Use nonremovable mechanical fasteners placed through predrilled holes. Attach signs with fasteners and anchors suitable for secure attachment to substrate as recommended in writing by sign manufacturer.

C. Bracket-Mounted Signs: Provide manufacturer's standard brackets, fittings, and hardware for mounting signs that project at right angles from walls and ceilings. Attach brackets and fittings securely to walls and ceilings with concealed fasteners and anchoring devices to comply with manufacturer's written instructions.

D. Dimensional Characters: Mount characters using standard fastening methods to comply with manufacturer's written instructions for character form, type of mounting, wall construction, and condition of exposure indicated. Provide heavy paper template to establish character spacing and to locate holes for fasteners.
1. Projected Mounting: Mount characters at projection distance from wall surface indicated.

E. Cast-Metal Plaques: Mount plaques using standard fastening methods to comply with manufacturer's written instructions for type of wall surface indicated.

1. Concealed Mounting: Mount plaques by inserting threaded studs into tapped lugs on back of plaque. Set in predrilled holes filled with quick-setting cement.

3.3 CLEANING AND PROTECTION

A. After installation, clean soiled sign surfaces according to manufacturer's written instructions. Protect signs from damage until acceptance by Owner.

END OF SECTION 101400

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Public-use washroom accessories.
2. Private-use bathroom accessories.
3. Underlavatory guards.
4. Custodial accessories.

B. Related Sections include the following:

1. Division 08 Section "Mirrors" for frameless mirrors.
2. Division 09 Section "Tiling" for ceramic toilet and bath accessories.
3. Division 09 Section “Gypsum Board Assemblies”.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include the following:

1. Construction details and dimensions.
2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
3. Material and finish descriptions.
4. Features that will be included for Project.
5. Manufacturer's warranty.

B. Samples: Full size, for each accessory item to verify design, operation, and finish requirements.

1. Approved full-size Samples will be returned and may be used in the Work.

C. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.

1. Identify locations using room designations indicated on Drawings.
2. Identify products using designations indicated on Drawings.

1.4 QUALITY ASSURANCE

A. Source Limitations: For products listed together in the same articles in Part 2, provide products of same manufacturer unless otherwise approved by Architect.

B. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum 5 years documented experience.

C. Installer: Company specializing in performing Work of this section with minimum 3 years documented experience, and approved by the manufacturer.

1.5 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.6 WARRANTY

A. Provide 5-year warranty under provisions of Division 1 Section “Product Requirements”.

B. Include coverage for corrosion and degradation of finish.

C. Include special warranty for degradation of silver finish on mirrors.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, 0.0312-inch (0.8-mm) minimum nominal thickness, unless otherwise indicated.

B. Brass: ASTM B 19 flat products; ASTM B 16 (ASTM B 16M), rods, shapes, forgings, and flat products with finished edges; or ASTM B 30, castings.

C. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.0359-inch (0.9-mm) minimum nominal thickness.

D. Galvanized Steel Sheet: ASTM A 653/A 653M, with G60 (Z180) hot-dip zinc coating.

E. Galvanized Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

F. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.

G. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).

H. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

I. ABS Plastic: Acrylonitrile-butadiene-styrene resin formulation.

2.2 BATHROOM ACCESSORIES

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:

C. Basis-of-Design Product: The design for accessories is based on products indicated. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. Bobrick Washroom Equipment, Inc.(stainless steel, No. 4, satin finish). Install where indicated on the drawings or per architects instruction in the field. Provide backing to install per CBC code and per manufacturers instructions
2. Or equal.

Toilet Rooms:

A. Bobrick B-38034 Recessed Paper Towel Dispense/Waste Receptable,

B. Bobrick B-3094 Recessed Sanitary Napkin Disposal/Toilet Tissue Dispenser.

C. Bobrick B-822 Lavatory-Mounted Soap Dispenser for Soaps and Detergents.

D. Bobrick B-204-2 Vinyl Shower Curtains – 1 ¼ time fullness- waterproof

E. Bobrick B-6107 Heavy-Duty Shower Curtain Rod.

F. Bobrick B-6777 Surface-Mounted Towel Pin. (3) per toilet room.

G. Bobrick B-221 Toilet Seat Cover, Classic Series

H. Bobrick B-204-1 Shower Curtain Hooks

I. Bobrick B-290 Series Mirror with Stainless Steel Angle Frame and integral shelf.

Utility Room:

J. Bobrick B-239 Surface-Mounted Shelf w/ Mop & Broom Holders & Hooks.

K. Bobrick B-985 Vandal resistant hook strip.Delete "Basis-of-Design Product" subparagraphs in remainder of this Article if not applicable. Coordinate with specification method selected above.

2.3 UNDERLAVATORY GUARDS

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:

C. Basis-of-Design Product: The design for accessories is based on products indicated. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. Plumberex Specialty Products, Inc.
2. TCI Products.
3. Truebro, Inc.

D. Underlavatory Guard

1. Basis-of-Design Product:
2. Description: Insulating pipe covering for supply and drain piping assemblies, that prevent direct contact with and burns from piping, and allow service access without removing coverings.
3. Material and Finish: Antimicrobial, molded-plastic, white.

2.4 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

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. Grab Bars: Install to withstand a downward load of at least 250 lbf (1112 N), when tested according to method in ASTM F 446.

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

END OF SECTION 102800

SECTION 122124 - SHADES

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Provide manually operated, sunscreen and blackout roller shades as applicable.

B. Provide electrically operated, sunscreen and blackout roller shades as applicable. Work includes local control system for direct control line voltage shade operation.

C. Provide and install shade system at the following locations:
   1. For all windows and in the Captains Office provide EcoVeil 1350 Series (5% open) shades on Meco Slimline Bracket with SnapLoc Fascia.
   2. For all windows in the Dorm Rooms: Mecho/5 DoubleShades with ThermoVeil® sunscreens with Blackout Shadecloth on a Single Bracket with SnapLoc® Fascia.
   3. Provide Manual Control for all windows.

D. Related Sections:

   1. Division 09 - Gypsum Board Assemblies: Coordination with gypsum board assemblies for blocking, installation of shade pockets, closures and related accessories.
   2. Division 26 - Electrical: line voltage controls.
   3.

1.2 SUBMITTALS

A. Product Data: Manufacturer’s data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
   3. Storage and handling requirements and recommendations.
   4. Mounting details and installation methods.
   5. Typical wiring diagrams including integration of EDU controllers with building management system, audiovisual and lighting control systems as applicable.

B. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements. Shade cloth samples and aluminum finish sample as selected. Mark face of material to indicate interior faces.

C. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

D. Warranty: Provide manufacturer’s warranty documents as specified in this Section.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Obtain roller shades system through one source from a single manufacturer with a minimum of ten years experience and minimum of five projects of similar scope and size in manufacturing products comparable to those specified in this section. This includes but is not limited to all required extrusions, accessories, controls and fabricated roller shades or else all stated and published warranties may be void.

B. Installer Qualifications: Engage an installer, which shall assume responsibility for installation of all system components, with the following qualifications.
   1. Installer for roller shade system shall be trained and certified by the manufacturer with a minimum of ten years experience in installing products comparable to those specified in this section.

C. Shadecloth Anti-Microbial Characteristics: 'No Growth' per ASTM G 21 results for fungi ATCC9642, ATCC 9644, and ATCC9645.

D. PVC-Free Shadecloth: Comply with the following.
   1. Environmental Certification: Submit written certification from the manufacturer, including third party evaluation, recycling characteristics, and perpetual use certification as specified below. Initial submittals, which do not include the Environmental Certification, below will be rejected. Materials that are simply 'PVC free' without identifying their inputs shall not qualify as meeting the intent of this specification and shall be rejected.
   2. Recycling Characteristics: Provide documentation that the shade cloth can, and is part of a closed loop of perpetual use and not be required to be down cycled, incinerated or otherwise thrown away. Scrap material can be sent back to the mill for reprocessing and recycling into the same quality yarn and woven into new material, without down cycling. Certify that this process is currently underway and will be utilized for this project.
   3. Perpetual Use Certification: Certify that at the end of the useful life of the shade cloth, that the material can be sent back to the manufacturer for recapture as part of a closed loop of perpetual use and that the material can and will be reconstituted into new yarn, for weaving into new shade cloth. Provide information on each shade band indicating that the shade band can be sent back to the manufacturer for this purpose.

E. Requirements for Electronic Hardware, Controls, and Switches:
   1. Roller shade hardware, shade fabric, and all related controls shall be furnished and installed.

F. Mock-Up: Provide a mock-up, if Architect requires, of one roller shade assembly for evaluation of mounting, appearance and accessories.
   1. Locate mock-up in window designated by Architect.
   2. Do not proceed with remaining work until, mock-up is accepted by Architect.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver components in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings and in the Window Treatment Schedule.

1.5 PROJECT CONDITIONS

A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

B. Power and control wiring shall be complete and certified, fully operational with uninterrupted communication on the lines and minimal noise certified by a commissioning agent (engaged by others).
   1. 485, ICON, Lonmark and Dry Contract Network: Noise on the line not to exceed shade manufacturer's limits.

1.6 WARRANTY

A. Warranty: Provide manufacturer's standard warranties, including the following:
   1. Roller Shade Hardware, and Shadecloth: Manufacturer's standard non-depreciating twenty-five year limited warranty.
      a. EcoVeil standard non-depreciating 10-year limited warranty.
   2. Electronic Roller Shade EDU's and EDU Control Systems: Manufacturer's standard non-depreciating five-year warranty.
   3. Roller Shade Installation: One year from date of Substantial Completion, not including scaffolding, lifts or other means to access to the work above 12' Feet AFF, which are the responsibility of others.

   4.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. Basis of Design Manufacturer for Window Shade System: Products by MechoSystems; 42-03 35th Street, Long Island City, NY 11101. Tel: (718) 729-2020 ext 1901

2.2 SHADE BANDS

A. Shade Bands: Construction of shade band includes the fabric, the enclosed hem weight, shade roller tube, and the attachment of the shade band to the roller tube. Sewn hems and open hem pockets are not acceptable.
   1. Concealed Hembar: Shall be continuous extruded aluminum for entire width of shade band and with the following characteristics:
      a. Hembar shall be heat sealed on all sides.
      b. Open ends shall not be accepted.
   2. Shade Band and Shade Roller Attachment:
      a. Use extruded aluminum shade roller tube of a diameter and wall thickness required to support shade fabric without excessive deflection.
      b. Provide for positive mechanical attachment of shade band to roller tube; shade band shall be made removable / replaceable with a "snap-on" snap-off" spline mounting, without having to remove shade roller from shade brackets.
      c. Mounting Spline shall not require use of adhesives, adhesive tapes, staples, and/or rivets.
      d. Any method of attaching shade band to roller tube that requires the use of: adhesive, adhesive tapes, staples, and/or rivets, does not meet the performance

requirements of this specification and shall not be accepted.

2.3 ROLLER SHADE FABRICATION

A. Fabricate shade cloth to hang flat without buckling or distortion. Fabricate with heat-sealed trimmed edges to hang straight without curling or raveling. Fabricate unguided shadecloth to roll true and straight without shifting sideways more than 1/8 inch (3.18 mm) in either direction per 8 feet (2438 mm) of shade height due to warp distortion or weave design.

B. Provide battens in standard shades as required to assure proper tracking and uniform rolling of the shade bands. Contractor shall be responsible for assuring the width-to-height (W:H) ratios shall not exceed manufacturer's standards or, in absence of such standards, shall be responsible for establishing appropriate standards to assure proper tracking and rolling of the shadecloth within specified standards. Battens shall be roll-formed stainless steel or tempered steel, as required.

C. For railroaded shade bands, provide seams in railroaded multi-width shade bands as required to meet size requirements and in accordance with seam alignment as acceptable to Architect. Seams shall be properly located. Furnish battens in place of plain seams when the width, height, or weight of the shade exceeds manufacturer's standards. In absence of such standards, assure proper use of seams or battens as required to, and assure the proper tracking of the railroaded multi-width shade bands

D. Provide battens for railroaded shades when width-to-height (W:H) ratios meet or exceed manufacturer's standards. In absence of manufacturer's standards, be responsible for proper use and placement of battens to assure proper tracking and roll of shade bands.

E. Blackout shade bands, when used in side channels, shall have horizontally mounted, roll-formed stainless steel or tempered-steel battens not more than 3 feet (115 mm) on center extending fully into the side channels. Battens shall be concealed in an integrally colored fabric to match the inside and outside colors of the shade band, in accordance with manufacturer's published standards for spacing and requirements.
   1. Battens shall be roll formed of stainless steel or tempered steel and concave to match the contour of the roller tube.

2.4 ROLLER SHADE COMPONENTS

A. Access and Material Requirements:
   1. Provide shade hardware allowing for the removal of shade roller tube from brackets without removing hardware from opening and without requiring end or center supports to be removed.
   2. Provide shade hardware that allows for removal and re-mounting of the shade bands without having to remove the shade tube, drive or operating support brackets.
   3. Use only Delran engineered plastics by DuPont for all plastic components of shade hardware. Styrene based plastics, and /or polyester, or reinforced polyester shall not be accepted.

B. Manual Operated Chain Drive Hardware and Brackets:
   1. Provide for universal, regular and offset drive capacity, allowing drive chain to fall at front, rear or non-offset for all shade drive end brackets. Universal offset shall be adjustable for future change.

2. Provide hardware capable for installation of a removable fascia, for both regular and/or reverse roll, which shall be installed without exposed fastening devices of any kind.
3. Provide shade hardware system that allows for removable regular and/or reverse roll fascias to be mounted continuously across two or more shade bands without requiring exposed fasteners of any kind.
4. Provide shade hardware system that allows for operation of multiple shade bands (multi-banded shades) by a single chain operator, subject to manufacturer's design criteria. Connectors shall be offset to assure alignment from the first to the last shade band.
5. Provide shade hardware system that allows multi-banded manually operated shades to be capable of smooth operation when the axis is offset a maximum of 6 degrees on each side of the plane perpendicular to the radial line of the curve, for a 12 degrees total offset.
6. Provide positive mechanical engagement of drive mechanism to shade roller tube. Friction fit connectors for drive mechanism connection to shade roller tube are not acceptable.
7. Provide shade hardware constructed of minimum 1/8-inch (3.18 mm) thick plated steel or heavier as required to support 150 percent of the full weight of each shade.
8. Drive Bracket / Brake Assembly:
    a. MechoShade Drive Bracket model M5 shall be fully integrated with all MechoShade accessories, including, but not limited to: SnapLoc fascia, room darkening side / sill channels, center supports and connectors for multi-banded shades.
    b. M5 drive sprocket and brake assembly shall rotate and be supported on a welded 3/8 inch (9.525 mm) steel pin.
    c. The brake shall be an over running clutch design which disengages to 90 percent during the raising and lowering of a shade. The brake shall withstand a pull force of 50 lbs. (22 kg) in the stopped position.
    d. The braking mechanism shall be applied to an oil-impregnated hub on to which the brake system is mounted. The oil impregnated hub design includes an articulated brake assembly, which assures a smooth, non-jerky operation in raising and lowering the shades. The assembly shall be permanently lubricated. Products that require externally applied lubrication and or not permanently lubricated are not acceptable.
    e. The entire M5 assembly shall be fully mounted on the steel support bracket, and fully independent of the shade tube assembly, which may be removed and reinstalled without effecting the roller shade limit adjustments.
9. Drive Chain: #10 qualified stainless steel chain rated to 90 lb. (41 kg) minimum breaking strength. Nickel plate chain shall not be accepted.

10. Shade Type WT-5: Motorized interior room darkening blackout roller shades in all exterior / interior windows of rooms and spaces as shown on referenced Drawings, and related EDU control requirements systems. Include the following as scheduled and as indicated on the Drawings:

2.5 SHADECLOTH

A. Room Darkening (PVC Free) Shadecloth with Opaque Acrylic Backing: MechoSystems, "Equinox 0100 series", .008 inches thick (.19 mm) blackout material and weighing .94 lbs. per square yard, comprising of 53% fiberglass, 45% acrylic, 2% poly finish.
    1. Color: Selected from manufacturer's standard colors.

B. Environmentally Certified Shadecloth: MechoSystems, EcoVeil group, 1350 or 1550 Series, fabricated from TPO for both core yarn and jacket, single thickness, 0.018 opaque coated reinforced yarn, non-raveling 0.030 inch (0.762 mm) thick fabric.

1. Basket Weave: 5 percent open 2x2 basket weave
2. Color: Selected from manufacturer's standard colors.
3. Warranty: 10-Year Limited.

2.6 ROLLER SHADE ACCESSORIES

A. Fascia:
1. Continuous removable extruded aluminum fascia that attaches to shade mounting brackets without the use of adhesives, magnetic strips, or exposed fasteners.
2. Fascia shall be able to be installed across two or more shade bands in one piece.
3. Fascia shall fully conceal brackets, shade roller and fabric on the tube.
4. Provide bracket / fascia end caps where mounting conditions expose outside of roller shade brackets.

B. Room Darkening Side and Sill Channels:
1. Extruded aluminum with polybond edge seals and SnapLoc-mounting brackets and with concealed fastening. Exposed fasting is not acceptable. Channels shall accept one-piece exposed blackout hembar with vinyl seal to assure side light control and sill light control.
   a. MechoSystems side channels, 1-15/16 inches (49.2 mm) wide by 1-3/16 inches (30.1 mm) deep, two-band center channels, 2-5/8 inches (66.6 mm) wide by 1-3/16 inches (30.1 mm) deep. The 2-5/8-inch (66.6 mm) double-center channels may be installed at center-support positions of multi-band-shade ElectroShades. MechoSystems side channels 2-5/8 inch (66.6 mm) may be used as center supports for ElectroShades; shade bands up to 8 high. For shade bands over 8 feet (2438 mm), provide ElectroShade side channels.
   b. ElectroShade side channels, 2-1/2 inches (63.5 mm) wide by 1-3/16 inches (30.1 mm) deep; two-band center channels 5 inches (127 mm) wide by 1-3/16 inches (30.1 mm) deep. The 2-5/8-inch (66.6 mm) double-center channels may be installed at center-support positions of multi-band-shade ElectroShades. MechoSystems side channels 2-5/8 inches (66.6 mm) may be used as center supports for ElectroShades. Also provide for use with manually operated room darkening MechoSystems's over 8 feet (2438 mm) in height.
   c. Color: Selected from manufacturer's standard colors or custom color as selected by Architect.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 Turn-Key Single-Source Responsibility for Interior Roller Shades: To control the responsibility for performance of the electric roller shade system; assign the design, engineering, and installation of electronic drive roller shade control system, shades, addressable controls, communication interfaces, and any required sensors, switches and low voltage control wiring specified in this Section to the manufacturer of the shade and control system. The Architect will not produce a set of electrical drawings for the installation of control wiring for the electric roller shade control system.

A. General Contractor Responsibilities:
   1. Provide power panels and circuits of sufficient size to accommodate roller shade manufacturer's requirements, as indicated on the mechanical and electrical drawings and manufacturer's shop drawings.
   2. Coordinate with requirements of subcontractor for this section before inaccessible areas are constructed.
   3. Coordinate requirements of ALSCS before inaccessible areas are constructed.
   4. Provide conduit with pull wire in all areas, which might not be accessible to ALSCS due to building design, equipment location or schedule:
   5. Coordinate with the main building electrical subcontractor to provide duplex 120 VAC power receptacle in Electric closet for floor/riser Communication Gateways.
   6. Verify that wiring conditions, which have been previously installed under other sections or at a previous time, are acceptable for product installation in accordance with manufacturer's instructions.
   7. Comply with manufacturer's product data, including shop drawings, technical bulletins, product catalog installation instructions, and product carton instructions for installation.
   8. Protect installed product and finished surfaces from damage during all phases of installation including preparation, testing, and cleanup.
   9. Be responsible for all other required electrical work including but not limited to roof penetrations, conduits, fireproofing, etc.
   10. Provide conduit with pull wire in all areas, which might not be accessible to subcontractor due to building design, equipment location or schedule.

B. Window Covering Subcontractor (WC) Responsibilities:
   1. Shade Control Subcontractor shall furnish and install shade controllers, interfaces, splitters, coupler, sensors, switches, junction boxes, etc mounted in the ceiling in an accessible location. Locations for all visible devices to be coordinated with Architect. The shade control subcontractor shall inspect all material included in this contract prior to installation. Manufacturer shall be notified of unacceptable material prior to installation.

3.4 INSTALLATION OF ROLLER SHADES

A. Contractor Furnish and Install Responsibilities:
   1. Window Covering Contractor (WC) shall provide an on site, Project Manager, and shall be present for all related jobsite scheduling meetings.

2. WC shall supervise the roller shade installation, and setting of intermediate stops of all shades to assure the alignment of the shade bands within a single EDU group, which shall not exceed +/- 0.125 inches (3.175mm), and to assure the alignment between EDU groups, which shall not exceed +/- 0.25 inches (6.35mm).
3. WC shall be responsible for field inspection on an area-by- area and floor-by-floor basis during construction to confirm proper mounting conditions per approved shop drawings.
4. Verification of Conditions: examine the areas to receive the work and the conditions under which the work would be performed and notify General Contractor and Owner of conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected. Commencement of installation shall constitute acceptance of substrate conditions by the installer.
5. WC shall provide accurate to 0.0625 inch (1.5875mm); field measurements for custom shade fabrication on the Roller Shades manufacturers input forms.
6. WC Installer shall install roller shades level, plumb, square, and true according to manufacturer's written instructions, and as specified here in. Blocking for roller shades installed under the contract of the interior General Contractor shall be installed plumb, level, and fitted to window mullion as per interior architect's design documents and in accordance with industry standard tolerances. The horizontal surface of the shade pocket shall not be out-of-level more than 0.625 inch (15.875mm) over 20 linear feet (6.096 meters)
7. Shades shall be located so the shade band is not closer than 2 inches (50 mm) to the interior face of the glass. Allow proper clearances for window operation hardware.
8. Adjust, align and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
9. Installer shall set Upper, Lower and up to 3 intermediate stop positions of all motorized shade bands, and assure alignment in accordance with the above requirements.
10. WC shall certify the operation of all motorized shades and turn over each floor for preliminary acceptance.
11. The WC shall participate and cooperate with the electrical contractor, the window shade manufacturer and the Commissioning agent to verify and certify the installation is in full conformance with the specifications and is fully operational. This work to occur during the commissioning stage and is in addition to preliminary acceptance required for each floor.
12. Clean roller shade surfaces after installation, according to manufacturer's written instructions.
13. WC shall train Owner's maintenance personnel to adjust, operate and maintain roller shade systems.
14. Protect installed products until completion of project.
15. Touch-up, repair or replace damaged products before Substantial Completion.

3.5 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 123000 – GRANITE COUNTERTOPS

PART 1 - GENERAL

1.1 SCOPE:

This specification includes fabricated granite components required for the completion of the granite countertop and back splash in the north Bathroom, the EOC Bathroom, and the Open Office desktop.

1.2 DEFINITION OF TERMS

The definition of terms used in these specifications shall be those published by the National Building Granite Quarries Association, Inc.

1.2 SUBMITTALS

A. Product Data: All granite shall be obtained from quarries having adequate capacity and facilities to meet the specified requirements. Fabrication shall be by a firm equipped to process the material promptly in accordance with specifications. Evidence to this effect shall be provided by the supplier if required by the Design Professional.

B. Samples: Sufficient samples of granite shall be submitted to the Design Professional through the General Contractor.
1. Each sample set shall include three samples.
2. Sample set shall show anticipated range of color to be expected in the final installation. Natural variations in grain structure, inclusions or any other visual characteristic should also be included in the samples, or depicted in an accompanying photograph. In addition, a dated photograph may be issued to illustrate current quarry conditions.
3. Approved sample sets and/or mock up photographs with meeting minutes shall establish the standard by which stonework will be judged

1.3 SHOP DRAWINGS

A. Shop Drawings: The granite supplier shall submit: copies of required shop drawings to the Design Professional for approval. These drawings shall show all bedding, bonding, jointing and anchoring details, and the dimensions of each piece of granite. No final sizing or finishing shall be done until the shop drawings for that part of the work have been approved.

B. Samples: For each type of material exposed to view.

C. Defective Work: Any piece of granite showing manufacturing flaws upon receipt at the storage yard or building site shall be referred to the Design Professional for determination as to whether it shall be rejected, patched or redressed for use.

1.4 REFERENCES:

ASTM A 123: Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
ASTM C 97: Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.
ASTM C 119: Terminology Relating to Dimension Stone
ASTM C 170: Test Method for Compressive Strength of Dimension Stone
ASTM C 615: Specification for Granite Dimension Stone
ASTM C 880: Test Method for Flexural Strength of Dimensional Stone

PART 2 - MATERIALS

2.1 GRANITE

A. Granite Standard: Granite shall comply with ASTM C 615, “Standard Specification for Granite Dimension Stone” for material characteristics, physical requirements, and sampling for selection of granite.

GENERAL: All granite shall be of standard architectural grade, free of cracks, seams, or starts, which may impair its structural integrity or function. Color or other visual characteristics indigenous to the particular material and adequately demonstrated in the sampling or mock-up phases will be accepted provided they do not compromise the structural or durability capabilities of the material. Texture and finish shall be within the range of samples approved by the Design Professional.

B. Granite: The specifying party shall provide the following information for each different granite or finish required:

C. Dimensional Tolerance: Panel Thickness 3/4” to 1 5/8” (19 to 41 mm)

2.2 Flatness Tolerances.

Variation from true plane, or flat surfaces, shall be determined by a 4’ dimension in any direction on the surface. Such variations on polish, hone, and fine rubbed surfaces shall not exceed tolerances listed below or 1/3 of the specified joint width, whichever is greater. On surfaces having other finishes, the maximum variation from true plane shall not exceed the tolerance listed below or 1/2 of the specified joint width, whichever is greater.

Polished finishes.....1/16” (1.5 mm)
Sawn, 4-cut, 6-cut, and 8-cut finishes..... 1/8” (3 mm)
Thermal and coarse stippled finishes.....3/16” (5 mm)
Pointed or other rough cut finishes.....1” (25 mm)

2.3 Beds and Joints

1. Pieces shall be bedded and jointed as shown on the approved shop drawings, and bed and joint surfaces shall be cut as follows: 1. Bed and joint surfaces shall be sawn through the full thickness of the granite piece. Bed and joint surfaces shall be within ±3° of 90° to the face of the piece unless otherwise specified.

2. Beds and joints shall be sawn or cut full square 2” back from the face and from that point may fall under square not more than 1” in 12”. Both beds and joints shall be reasonably free of large depressions.

3. Beds and joints shall be split or rough sawn generally square with the face and may fall under square with the face not more than 2” in 12”.

2.4 Fabrication, General Requirements

A. Mouldings, washes and drips shall be constant in profile throughout their length, in strict conformity with details shown on approved shop drawings.
B. Dress joints straight and at 90 degree angle to face. Shape beds to fit supports.
C. Anchor Provision: Cut and drill sink provisions and holes in stone for anchors, fasteners, supports, and lifting devices as indicated or needed to set stone in place.
D. Allow room for expansion of the anchoring devices where necessary.
E. Where liners are required on the back of panels, secure by means of mechanical anchors. Comply with referenced standards.
F. Finish exposed faces and edges of stone, except sawed reveals, to comply with requirements indicated for finish and to match final samples and mockups.
G. Joint Width: Cut stone to produce uniform joints 3/8” or as shown on Drawings.
H. Provide chases, reveals, reglets, openings, and similar features as required to accommodate adjacent work.
I. Grade and mark stone to achieve uniform appearance when installed. Inspect finished stone units at fabrication plant. Replace defective units.

2.5 Incidental Cutting and Drilling

Panels in excess of 100 pounds (45 kg) may include, at installer’s option, lifting clamp dimples, Lewis holes, or other provisions as required to accommodate the lifting device(s) utilized by the installing contractor. Lifting holes in the top beds of panels or other locations where moisture collection is likely to occur shall be filled with non-expanding grout or high-modulus elastomeric sealant after installation and final alignment.

3. SHIPPING AND HANDLING

3.1 Packing and Loading

Finished granite shall be carefully packed and loaded for shipment using all reasonable and customary precautions against damage in transit. No material which may cause staining or discoloration shall be used for blocking or packing. Comment:

STAINING: Granite is highly resistant to staining, but should be protected from certain elements, such as

wet (green) wood, oils, mud, rust, construction waste, and asphalt compounds. Contact supplier for proper remedies to staining problems that occur.

3.2 Site Storage
Upon receipt at the building site or storage yard, the granite shall be stacked on timber or platforms at least 3” above the ground, and extreme care shall be taken to prevent staining during storage. If storage is to be for a prolonged period, polyethylene or other suitable plastic film shall be placed between any wood and finished surfaces, and shall be used also as an overall protective covering. All holes shall be plugged during freezing weather to prevent the accumulation of water. Salt shall not be used for melting of ice formed in Lewis holes or on pieces, or for any purpose involving its contact with the granite.

4. STONE INSTALLATION

Proceed with the installation of the stonework in accordance with Drawings and using skilled mechanics capable of proper handling of the setting of the stone and able to field cut where necessary with sharp and true edges. Set stone with joints uniform in appearance and stone edges and faces aligned to tolerances indicated. Clean surfaces that are dirty or stained. Scrub with fiber brushes, and then rinse with clear water. Provide expansion, control, and pressure-relieving joints of widths and at locations shown on Drawings.

5. CLEANING AND PROTECTION

5.1 Cleaning Granite shall be shop cleaned at the time of final fabrication. After installation and pointing or caulking are completed, the contractor shall carefully clean the granite, removing all dirt, excess mortar, weld splatter, stains, and/or other site incident defacements. Stainless steel wire brushes or wool may be used, but the use of other wire brushes or of acid or other solutions which may cause discoloration is expressly prohibited. Fabricator should be contacted before cleaners other than detergents are used.

5.2 Protection of Finished Work After the granite work is installed, the granite shall be properly and adequately protected from damage. Boxing or other suitable protection shall be provided wherever required, but no lumber which may stain or deface the granite shall be used. All nails used shall be non-corrosive. All granite work in progress shall be protected at all times during construction by use of a suitable strong, impervious film or fabric securely held in place.

END OF SECTION 123530

SECTION 123530 - RESIDENTIAL CASEWORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Open Office Desk, North Bathroom Vanity, EOC Bathroom Vanity, BC Bathroom Storage Lockers, Dormitory Lockers and Storage Cabinents, Bedside Tables, and Men’s Restroom Locker modification.
2. Cabinets, shelving.
3. Granite countertops and backsplashes.

1.2 SUBMITTALS

A. Product Data: For cabinets**,** countertop material, and cabinet hardware.

B. Shop Drawings: For cabinets and countertops. Include plans, elevations, details, and attachments to other work. Show materials, finishes, filler panels, hardware, edge and backsplash profiles, methods of joining countertops, and cutouts for plumbing fixtures.

C. Samples: For each type of material exposed to view.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.

B. Product Data for Credit IEQ 4.4: For adhesives and composite wood products, documentation indicating that product contains no urea formaldehyde.

C. Quality Standards: Unless otherwise indicated, comply with the following standards:

1. Cabinets: KCMA A161.1.

a. KCMA Certification: Provide cabinets with KCMA's "Certified Cabinet" seal affixed in a semi-exposed location.

2. Granite: counters to counters and backsplashes to be made of full slabs up to 10 ft in length and 5 ft in length.

PART 2 - PRODUCTS

2.1 CABINET MATERIALS

A. General:
1. Certified Wood Materials: Fabricate cabinets with wood and wood-based products produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."
2. Hardwood Plywood: HPVA HP-1; made with adhesive containing no urea formaldehyde.
3. Adhesives and Composite Wood and Agrifiber Products: Do not use adhesives that contain urea formaldehyde.
4. Hardwood Lumber: Kiln dried to 7 percent moisture content.
5. Softwood Lumber: Kiln dried to 10 percent moisture content.
6. Hardwood Plywood: HPVA HP-1**,** made without urea formaldehyde.
7. Particleboard: ANSI A208.1, Grade M-2**,** made without urea formaldehyde.
8. Hardboard: AHA A135.4, Class 1 Tempered.

B. Cabinet Boxes, Face Frames, Doors and Drawers:
1. Plywood: Hardwood plywood with face veneer of species indicated, with Grade A faces and Grade C backs of same species as faces.
2. Hardwood Lumber for face frames, door and drawer fronts. Owner to select door from manufacturer’s full range
    a. Colors, Textures, and Patterns: As selected by Architect from cabinet manufacturer's full range.

C. Concealed Materials: Solid wood or plywood, of any hardwood or softwood species, with no defects affecting strength or utility; particleboard; medium-density fiberboard; or hardboard.

2.2 CABINET HARDWARE

A. Owner to select from Manufacturer’s full range.

B. Drawer Guides: Epoxy-coated-metal, self-closing drawer guides; designed to prevent rebound when drawers are closed; with nylon-tired, ball-bearing rollers; and complying with BHMA A156.9, Type B05011 or Type B05091.

C. General: Manufacturer's standard units complying with BHMA A156.9, of type, size, style, material, and finish as selected by Architect from manufacturer's full range.

2.3 COUNTERTOP MATERIALS

A. Granite for all countertops in office, bathrooms, 6” high backsplash. Countertop edge to be selected by Owner from manufacturer’s full range.

B. Certified Wood Materials: Fabricate countertops with wood and wood-based products produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

C. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

2.4 CABINETS

A. Available Products: Subject to compliance with requirements, cabinets that may be incorporated into the Work include, but are not limited to, the following:

B. Products: Subject to compliance with requirements, provide one of the following:

C. Face Style: Flush overlay

D. Cabinet Style: Faceframe

E. Door and Drawer Fronts: 1/2-inch- (12.7-mm-) thick plastic-laminate-faced particleboard with PVC edge banding.

F. Exposed Cabinet End Finish: Plywood Veneer to match owner selected hardwood

2.5 GRANITE COUNTERTOPS

A. Granite for all countertops in office, kitchen, bathrooms, day room, janitor room, laundry room and full height backsplash (to bottom of upper cabinets). Countertop edge to be selected by Owner from manufacturer’s full range.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install cabinets with no variations in flushness of adjoining surfaces; use concealed shims. Where cabinets abut other finished work, scribe and cut for accurate fit. Provide filler strips, scribe strips, and moldings in finish to match cabinet face.

B. Install cabinets without distortion so doors and drawers fit openings and are aligned. Complete installation of hardware and accessories as indicated.

C. Install casework level and plumb to a tolerance of 1/8 inch in 8 feet (3 mm in 2.4 m).

D. Fasten cabinets to adjacent units and to backing.

1. Fasten wall cabinets through back, near top and bottom, at ends and not less than 24 inches (600 mm) o.c. with No. 10 wafer-head screws sized for 1-inch (25-mm) penetration into wood framing, blocking, or hanging strips.
2. Fasten wall cabinets through back, near top and bottom, at ends and not less than 24 inches (600 mm) o.c., with toggle bolts through metal backing behind gypsum board.

E. Fasten plastic-laminate countertops by screwing through corner blocks of base units into underside of countertop. Form seams using splines to align adjacent surfaces, and secure with glue and concealed clamping devices designed for this purpose.

F. Fasten solid-surfacing-material countertops by screwing through corner blocks of base units into underside of countertop. Align adjacent surfaces, and form seams to comply with manufacturer's written instructions using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

G. Adjust cabinets and hardware so doors and drawers are centered in openings and operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.

END OF SECTION 123530

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section covers general work of all Sections under Division 26.

B. Provide a complete working electrical installation with all equipment called for in proper operating condition. Documents do not undertake to show or list every item to be provided. When an item not shown or listed is clearly necessary for proper operation of equipment which is shown or listed, provide the item which will allow the system to function properly at no increase in Contract Price.

1.2 REFERENCES

A. The General Conditions, Supplementary Conditions, and applicable portions of Divisions 01 and 26 apply to the work of this Section as if printed herein.

1.3 SUBMITTALS

A. Forward all submittals in related groups. Individual or incomplete submittals are not acceptable.

B. Identify each item by manufacturer, brand, trade name, number, size, rating, or whatever other data is necessary to properly identify and check materials and equipment.

C. Identify each submittal item by reference to Specification Section paragraph in which item is specified or Drawing and Detail number.

D. Organize submittals in same sequence as they appear in Specification Sections, articles or paragraphs.

E. Shop Drawings shall show physical arrangement, construction details and finishes.
   1. Drawings shall be drawn to scale and dimensioned where applicable.
   2. Catalog cuts and published material may be included to supplement scale drawings.

F. Internal wiring diagrams of equipment shall show wiring as actually furnished for this project with all optional items clearly identified as included or excluded. Clearly identify external wiring connections. Identify and obliterate superfluous material.

G. Binders: Prepare submittal material in accordance with the following:
   1. Insert all literature in standard 3-ring binders for 8-1/2 inch by 11 inch pages with individual tabs. Do not staple literature on different products together.
   2. Number all binders on the outside of the cover and indicate the Specification Section. Mark Binder No. 1 Architect's copy and No. 2 Engineer's copy. Both of these binders shall contain original manufacturer's literature.
   3. Provide an index with binder. This index shall follow the same sequence as the Specifications.

H. Submittal literature, drawings and wiring diagrams shall be specifically applicable to this Project and shall not contain extraneous material or optional choices. Clearly mark literature to indicate the proposed item. Submittals shall include, but not be limited to those items listed in individual Sections.
   1. Include all physical and performance data, including materials, manufacturer's names, model numbers, weights, sizes, capacities, performance curves, finishes, colors, accessories and all other data required to completely describe equipment and to indicate complete compliance with Specifications and Drawings.
   2. Include with complete submittals above, complete, large scale, dimensioned Shop Drawings, certified by manufacturer, of all major equipment and other equipment as directed by Architect.

I. Resubmittals will be reviewed for compliance with comment made on the original submittal only and should be marked with a resubmittal number and dated.

J. Operating & Maintenance Instructions and Manuals:
   1. Subsequent to final completions and testing operations, this Division is responsible for instructing the Owner's authorized representatives in operation, adjustment and maintenance of electrical plant.
   2. Submit three (3) copies of certificate, signed by Owner's Representatives, attesting to their having been instructed.
   3. Before Owner's personnel assume operation of systems, submit three (3) sets of operating maintenance manuals. Bind data in vinyl covered loose-leaf binders with title index tabs identifying items therein to include:
      a. Fire Alarm and Smoke Detection System
      b. Miscellaneous Signal Systems.
   4. Provide two (2) full size prints of Record Drawing One-Line Diagram, in metal frame with glass front. Obtain record drawing prints from Architect at Contractor's cost and have prints framed in location as directed.

K. Submit as-built drawings showing actual constructed conditions, in accordance with the provisions of Section 01720.

1.4 QUALITY ASSURANCE

A. Materials and Systems:
   1. Labels: Provide materials listed and labeled by Underwriters' Laboratories or testing firm acceptable to authority having jurisdiction, where listing service is normally provided for product.
   2. Materials: Provide new and ship to jobsite in original manufacturer's containers or bundles.

B. Workmanship: Arrange work to obtain coordinated installation.

C. Code Compliance: Comply with applicable codes, laws, rules, regulations, and standards of applicable code-enforcing authorities.

D. References and Standards: All materials and equipment shall comply with all applicable standards and requirements of the standards listed below. Nothing in the Drawings or Specifications shall be construed to permit Work not conforming to applicable laws, ordinances, rules and regulations. It is not the intent of Drawings or Specifications to repeat requirements of codes except where necessary for completeness or clarity.
   1. American National Standards Institute (ANSI).

2. Association of Edison Illuminating Companies (AEIC).
3. Insulated Cable Engineers Association (ICEA).
4. Institute of Electrical and Electronics Engineers (IEEE).
5. National Electrical Manufacturer's Association (NEMA).
6. Underwriters' Laboratories, Inc. (UL).
7. 2022 California Building Code
8. 2022 California Electrical Code
9. 2022 California Mechanical Code
10. 2022 California Plumbing Code
11. 2022 California Fire Code
12. State of California Low-Voltage Electrical Safety Orders (CAL/OSHA).
13. State of California High-Voltage Electrical Safety Orders (CAL/OSHA).

E. Codes and regulations noted in other Sections in Division 26, applicable State and Local Codes and Ordinances. If any of the requirements of the above are in conflict with one another, or with the requirements of these specifications, the most stringent requirement shall govern.

1.5 DELIVERY, STORAGE AND HANDLING

A. Protect from loss or damage. Replace lost or damaged materials and equipment with new at no increase in Contract Sum.

1.6 DRAWINGS AND COORDINATION WITH OTHER WORK

A. Drawings:
1. For purposes of clarity, legibility, Drawings are essentially diagrammatic.
2. Exact routing of wiring and locations of outlets, panels, etc., shall be governed by structural conditions, obstructions and existing conditions. Architect reserves right, at no increase in price, to make any reasonable change in locations of electrical items, exposed at ceiling and/or on walls, to group them into orderly relationships and/or increase their utility. Contractor shall verify Architect's requirements in this regard prior to roughing-in.
3. Dimensions, location of doors, partitions, and similar physical features shall be taken from Architectural Drawings for exact location of outlets to center with Architectural features, panels, etc., at the approximate location shown on Electrical Drawings.
4. Mounting heights of brackets, outlets, etc., shall be as required to suit equipment served.
5. Drawings indicate, generally, routes of all branch circuits. All runs to panels are indicated as starting from nearest outlet, pointing in direction of panel. Continue all such circuits to panel as though routes were indicated in their entirety.

B. Coordination:
1. Work out all "tight" conditions involving Work under this Division and Work in other Divisions in advance of installation. If necessary, and before Work proceeds in these areas, prepare supplementary Drawings under this Division for review, showing all Work in "tight" area. Provide supplementary Drawings and additional Work necessary to overcome "tight" conditions.
2. Differences or disputes concerning coordination, interference or extent of Work between Divisions shall be decided by Contractor. His decision, if consistent with Contract Documents requirements, shall be final.

3. Coordinate electrical power and control wiring requirements of mechanical equipment with Division 23.
4. Where conflict exists between rough-in shown on drawings and that shown or required by equipment to be installed, obtain clarification from Architect and provide rough-in as directed.
5. Provide templates, information and instructions to other Divisions to properly locate holes and openings to be cut or provided for Electrical Work.
6. Coordinate chases, slots, inserts, sleeves, and openings for electrical supports, raceways, and cable with general construction work.
7. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment that requires positioning before closing in the building.
8. Coordinate location of access panels and doors for electrical items that are concealed by finished surfaces.
9. Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.

C. Large Scale Layout Drawings: In accordance with requirements of Section 017700, prepare large scale detailed layout Drawings showing locations of equipment, conduit runs, panels, and all other elements of electrical systems where required by other Sections of this Division, plus sections of all congested areas to show relative position and spacing of affected elements. All symbols and designations used in preparing record Drawings shall match those used in Contract Drawings.

D. Equipment Rough-In:
1. Rough-in locations shown on Electrical Drawings for equipment furnished by Owner and for equipment furnished under other Divisions are approximate only.
   a. Obtain exact rough-in locations from following sources:
      1) From shop drawings for Contractor-furnished and installed equipment.
      2) From Architect for Owner-furnished Contractor-installed equipment.
2. Verify electrical characteristics of equipment before starting rough-in. Where conflict exists between equipment and rough-in shown on Drawings obtain clarification from Architect and provide as directed.
3. Unless otherwise shown or specified, provide direct raceway and conductor connections from building wiring system to equipment terminals for direct connected equipment which is Contractor furnished and Contractor installed, Owner furnished and Contractor installed.
4. Provide plug-in receptacle cap for cord connected equipment which is Contractor furnished and Contractor installed, Owner furnished and Contractor installed. Provide new cord and cap if required on Owner furnished and Contractor installed equipment.
5. Provide disconnect switches, flush type in finished spaces, where shown or required by code for direct connected equipment.

PART 2 - PRODUCTS

2.1 MATERIALS FURNISHED

A. New, bearing label of Underwriter's Laboratories, or other testing laboratory acceptable to authority having jurisdiction, where labeling exists for the class of equipment.

B. Provide equipment of one manufacturer, alike in appearance and function.

C. For equipment specified by manufacturer's number, include all accessories, controls, etc., listed in catalogue as standard with equipment. Furnish optional or additional accessories as specified.

D. Where no specific make of material or equipment is mentioned, use any product of reputable manufacturer which conforms to requirements of system and other applicable specification sections.

E. Equipment and material damaged during transportation, installation, or operation is considered as totally damaged. Replace with new. Variance from this permitted only with written approval.

F. Provide an authorized representative to constantly supervise Work of this Division, check all materials prior to installation for conformance with Drawings, Specifications, and reviewed Shop Drawings.

2.2 SUPPORTING DEVICES

A. Material: Cold-formed steel, with corrosion-resistant coating.

B. Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel.

C. Slotted-Steel Channel: Flange edges turned toward web, and 9/16-inch- diameter slotted holes at a maximum of 2 inches o.c., in webs. Strength rating to suit structural loading.

D. Slotted Channel Fittings and Accessories: Recommended by the manufacturer for use with the type and size of channel with which used.

1. Materials: Same as channels and angles, except metal items may be stainless steel.

E. Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.

F. Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.

G. Cable Supports for Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for nonarmored electrical cables in riser conduits. Plugs have number and size of conductor gripping holes as required to suit individual risers. Body constructed of malleable-iron casting with hot-dip galvanized finish.

H. Expansion Anchors: Carbon-steel wedge or sleeve type.

I. Toggle Bolts: All-steel springhead type.

J. Powder-Driven Threaded Studs: Heat-treated steel.

2.3 ELECTRICAL IDENTIFICATION

A. Colored Adhesive Marking Tape for Raceways, Wires, and Cables: Self-adhesive vinyl tape, not less than 1 inch wide by 3 mils thick.

B. Tape Markers for Conductors: Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.

C. Color-Coding Cable Ties: Type 6/6 nylon, self-locking type. Colors to suit coding scheme.

D. Underground Warning Tape: Permanent, bright-colored, continuous-printed, vinyl tape compounded for permanent direct-burial service, and with the following features:
1. Not less than 6 inches wide by 4 mils thick.
2. Embedded continuous metallic strip or core.
3. Printed legend that indicates type of underground line.

E. Engraved-Plastic Labels, Signs, and Instruction Plates: Engraving stock, melamine plastic laminate punched or drilled for mechanical fasteners 1/16-inch minimum thickness for signs up to 20 sq. in. and 1/8-inch minimum thickness for larger sizes. Engraved legend in black letters on white background.

F. Warning and Caution Signs: Preprinted; comply with 29 CFR 1910.145, Chapter XVII. Colors, legend, and size appropriate to each application.
1. Interior Units: Aluminum, baked-enamel-finish, punched or drilled for mechanical fasteners.
2. Exterior Units: Weather-resistant, non-fading, preprinted, cellulose-acetate butyrate with 0.0396-inch, galvanized-steel backing. 1/4-inch grommets in corners for mounting.

G. Fasteners for Nameplates and Signs: Self-tapping, stainless-steel screws or No. 10/32 stainless-steel machine screws with nuts and flat and lock washers.

H. Electrical Outlets: Dymo labels, self adhesive.

2.4 CONCRETE BASES

A. Concrete Forms and Reinforcement Materials: As specified in Section 033000"Cast-in-Place Concrete."

B. Concrete: 3000-psi, 28-day compressive strength.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Manufacturer’s Directions: Follow in all cases where manufacturers of articles used furnish directions covering points not specified or shown.

B. Equipment: Accurately set and leveled with supports neatly placed and properly fastened as shown and specified. Provide means of bringing in and installing equipment into position inside building. Install to facilitate service, maintenance and repair or replacement of components. Connect for ease of disconnecting with minimum interference with other installations.

C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom.

D. Materials and Components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.

E. Right of Way: Give to raceways and piping systems installed at a required slope.

F. Conduit Systems:
1. Worked into complete, integrated arrangement with like elements to make Work neat appearing, finished.
2. Run concealed, except as shown or noted otherwise. Where exposed, install parallel with walls or structural elements: vertical runs plumb; horizontal runs level or parallel with structure as appropriate: groups racked together neatly with straight runs and bends both parallel and uniformly spaced.
3. Install as high as practicable to maintain adequate head room shown or required. Coordinate with Work of other Divisions to achieve proper headroom.
4. Flash and counter-flash all conduits through roof in accordance with requirements of Section 076200.
5. Clearance: Do not obstruct spaces required by code in front of electrical equipment, access doors, etc.

G. Penetrations:
1. Pack space between conduit, sleeve in walls with non-combustible materials.
2. Make penetrations through floors water-tight with non-hardening sealant even though concealed within wall or furred space.
3. Make penetrations through any damp-proofed/water-proofed surfaces damp-proof/waterproof by appropriate means to maintain integrity of system penetrated.
4. Seal around penetrations with fireproofing material to maintain integrity of fire rating where occurs.

H. Provide shrouds at light fixtures, electrical panelboards and like items to maintain integrity of rated wall or ceiling construction.

I. Hangers, Supports, Anchors and Chases:
1. Provide complete as required for installation of Electrical Work.
2. Equipment to be of metal only: no wood or combustible material will be permitted including supports for outlet boxes.
3. Hangers, anchors and supports for conduit runs: As specified.
4. Provide concrete insets for attachment of hangers; subject to structural engineer's review.
5. Provide anchors for floor and wall mounted equipment.
6. Provide supports for wall mounted equipment.

3.2 ELECTRICAL SUPPORTING DEVICE APPLICATION

A. Damp Locations and Outdoors: Hot-dip galvanized materials or nonmetallic, slotted channel system components.

B. Dry Locations: Steel materials.

C. Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four with, 200-lb minimum design load for each support element.

3.3 SUPPORT INSTALLATION

A. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.

B. Size supports for multiple raceway or cable runs so capacity can be increased by a 25 percent minimum in the future.

C. Support individual horizontal single raceways with separate, malleable-iron pipe hangers or clamps except use spring-steel fasteners for 1-1/2-inch and smaller single raceways above suspended ceilings and for fastening raceways to slotted channel and angle supports.

D. Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.

E. Secure electrical items and their supports to building structure, using the following methods unless other fastening methods are indicated:
   1. Wood: Wood screws or screw-type nails.
   2. Gypsum Board: Toggle bolts. Seal around sleeves with joint compound, both sides of wall.
   3. Masonry: Toggle bolts on hollow block and expansion bolts on solid block. Seal around sleeves with mortar, both sides of wall.
   4. New Concrete: Concrete inserts with machine screws and bolts.
   5. Existing Concrete: Expansion bolts.
   6. Structural Steel: Spring-tension clamps.
      a. Comply with AWS D1.1 for field welding.
   7. Light Steel Framing: Sheet metal screws.
   8. Fasteners for Damp, Wet, or Weather-Exposed Locations: Stainless steel.
   9. Light Steel: Sheet-metal screws.
   10. Fasteners: Select so load applied to each fastener does not exceed 25 percent of its proof-test load.

3.4 IDENTIFICATION MATERIALS AND DEVICES

A. Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

B. Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent designations throughout Project.

C. Self-Adhesive Identification Products: Clean surfaces before applying.

D. Tag and label circuits designated to be extended in the future. Identify source and circuit numbers in each cabinet, pull and junction box, and outlet box. Color-coding may be used for voltage and phase identification.

E. Install continuous underground plastic markers during trench backfilling, for exterior underground power, control, signal, and communication lines located directly above power and communication lines. Locate 6 to 8 inches below finished grade. If width of multiple lines installed in a common trench or concrete envelope does not exceed 16 inches, overall, use a single line marker.

F. Install warning, caution, and instruction signs where required to comply with 29 CFR 1910.145, Chapter XVII, and where needed to ensure safe operation and maintenance of electrical systems and of items to which they connect. Indoors install engraved plastic-laminated instruction signs with approved legend where instructions are needed for system or equipment operation. Install metal-backed butyrate signs for outdoor items.

G. Install engraved-laminated emergency-operating signs with white letters on red background with minimum 3/8-inch- high lettering for emergency instructions on power transfer, load shedding, and other emergency operations.

3.5 FIRESTOPPING

A. Apply firestopping to cable and raceway sleeves and other penetrations of fire-rated floor and wall assemblies to restore original undisturbed fire-resistance ratings of assemblies. Firestopping installation is specified in Section 078413 “Penetration Firestopping”.

3.6 CONCRETE BASES

A. Construct concrete bases of dimensions indicated, but not less than 4 inches larger, in both directions, than supported unit. Follow supported equipment manufacturer's anchorage recommendations and setting templates for anchor-bolt and tie locations, unless otherwise indicated.

3.7 DEMOLITION

A. Protect existing electrical equipment and installations indicated to remain. If damaged or disturbed in the course of the Work, remove damaged portions and install new products of equal capacity, quality, and functionality.

B. Accessible Work: Remove exposed electrical equipment and installations, indicated to be demolished, in their entirety.

C. Abandoned Work: Cut and remove buried raceway and wiring, indicated to be abandoned in place, 2 inches below the surface of adjacent construction. Cap raceways and patch surface to match existing finish.

D. Remove, store, clean, reinstall, reconnect, and make operational components indicated for relocation.

3.8 CUTTING AND PATCHING

A. Do all cutting, repairing, including structural reinforcing, necessary for Work under this Division. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.

B. Do not do any cutting or patching without approval. Repair, refinish and touch up disturbed finish materials and other surfaces to match adjacent undisturbed surfaces equal to original condition in Architect's opinion.

3.9 EXCAVATING & BACKFILLING

A. Provide as required for installation of work under this Division in accordance with requirements of Section 0327010.

B. Provide all necessary shoring, pumping as part of Work of this Division.

C. In any asphalt or concrete paved areas, backfill only to sub grade level.

3.10 TESTING AND ADJUSTING

A. Furnish all labor and test equipment required under this Division.

B. Test panels and branch circuits for grounds or shorts. Repair defective wiring as required.

C. Test each individual circuit at panel for proper operation.

D. Upon completion of Work, make final inspection; operate equipment under normal conditions, to satisfaction of Architect.

E. At completion of Work, provide written certification that all systems are functioning properly without defects.

F. Test all feeders for line-to-ground and line-to-line resistance with a 500 VDC motor driven "Megger". Minimum acceptable resistance is 100 meg-ohms. Schedule all feeders and indicate line-to-ground and line-to-line resistances. Have all tests witnessed by Architect or his authorized representative.

G. Perform testing at a time suitable to the Architect and Owner. Advise the Architect a minimum of two weeks prior to testing so that he can arrange to be present if he desires.

H. Provide for Grounding System: Test for ground currents with all equipment energized. Include ground impedance test by 2 or 3 point fall-of-potential method.

I. Submit six (6) sets of test reports for review.

3.11 CLEANING AND PAINTING

A. Properly prepare Work under this Division to be finish painted under Section 099113.

B. Refinish Work supplied with final finish under this Division if damaged under this Division to satisfaction of Architect.

C. After other Work is accomplished, clean exposed conduit, panels (interiors and exteriors), fixtures, equipment and leave in satisfactory condition.

3.12 VOLTAGE CHECK

A. At completion of job, check voltage at several points of utilization on the system which has been installed under this Contract. During test, energize all installed loads.

B. Adjust taps on transformers to give proper voltage, which is 118 to 122 volts for 120-volt nominal systems and proportionately equivalent for higher voltage systems. If proper voltage cannot be obtained, inform the Architect and the Owner.

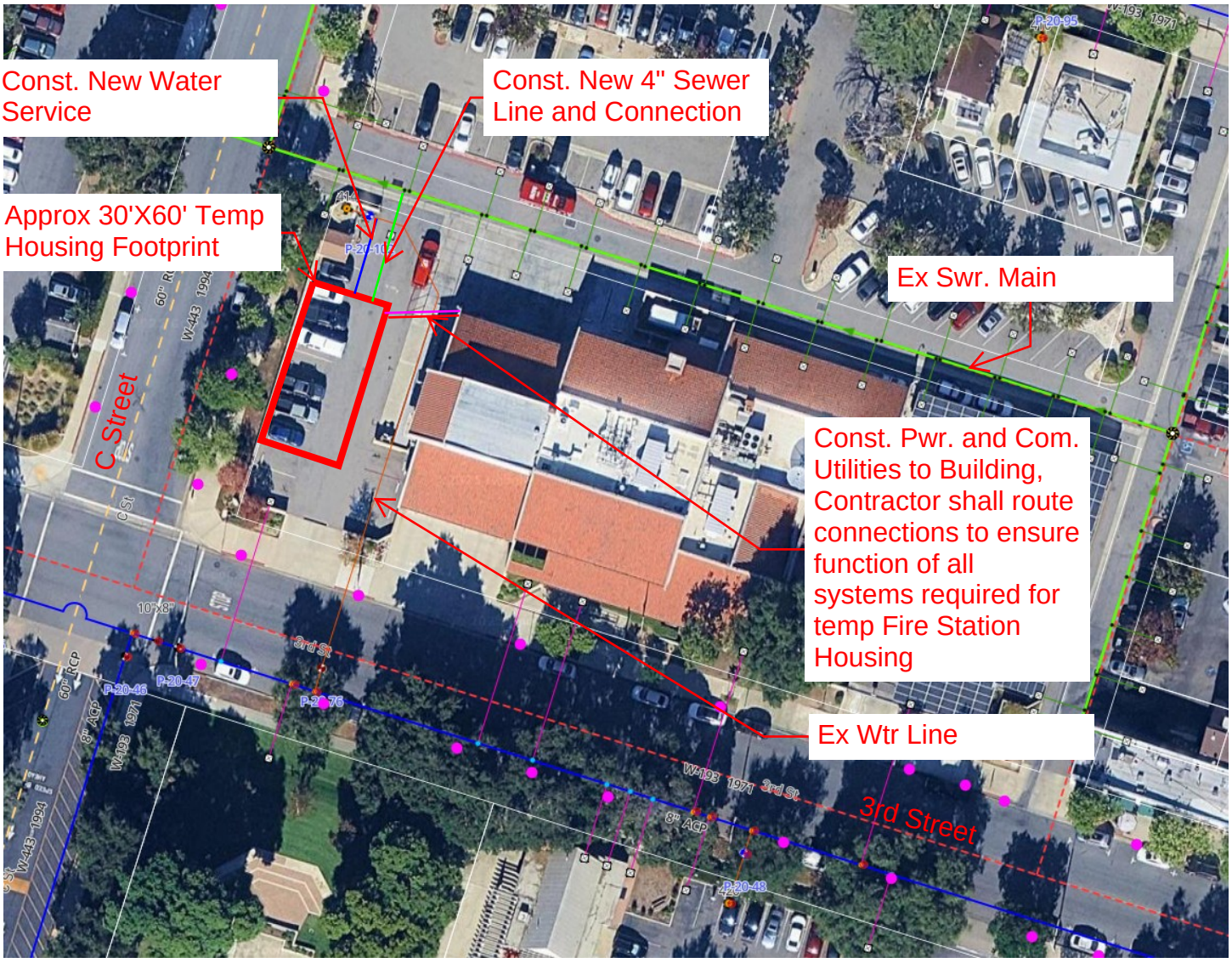
END OF SECTION

TECHNICAL SPECIFICATIONS & DESCRIPTION OF BID ITEMS

APPENDIX A

EXHIBITS

Temporary Fire Crew Housing Site Plan Concept



APPENDIX B

AVAILABLE BUILDING AS-BUILT PLANS

APPENDIX C

ASBESTOS TESTING REPORT

TRUST Environmental Solutions

Results Begin With TRUST

TRUST Assignment Number: 13791 & 14148

Limited Asbestos and Lead Assessment Survey

Survey Location:

Fire Station #1
2061 3rd Street
La Verne, California 91750

Report Prepared for:

City of La Verne
Attn: Colin Purdy
(909) 630-9464
cpurdy@cityoflaverne.org
3660 D. Street
La Verne, CA 91650

Survey Date: June 6, 2025 & July 1, 2025

Report Date: June 7, 2025

Revised Date: July 3, 2025

TRUST Assignment Number: 13791 & 14148

June 7, 2025

Revised July 2, 2025

City of La Verne
Attn: Colin Purdy
3660 D. Street
La Verne, CA 91650
cpurdy@cityoflaverne.org

Limited Asbestos and Lead Assessment Survey

Section I: Site Characterization and Background Information

On June 6, 2025, TRUST Environmental Solutions (TRUST Environmental) conducted a Limited Asbestos and Lead Assessment Survey of Fire Station #1 located at 2061 3rd Street, La Verne, California 91750. This survey was completed at the request of Colin Purdy from City of La Verne and was completed by Certified Site Surveillance Technician and Lead Sampling Technician, Ricardo Osorio (CSST# 23-7412 and LRC- 00006988) , under the direction of Certified Asbestos Consultant and Lead Inspector/Assessor, Victor Ruiz (CAC# 15-5589 and LRC-00011686) who are employees of TRUST Environmental Solutions located at 317 W. Ventura Blvd., #1067, Camarillo, California 93010. Asbestos samples were hand delivered to:

Eurofins Glendale (NVLAP; 200945-0) located at 1010 N. Central Avenue Suite 460, Glendale, CA 91202. EMLab Glendale can be reached at (866) 465-6653 or EBET.customerservice@et.eurofinsus.com.

Additionally, on July 1, 2025, TRUST Environmental Solutions (TRUST Environmental) conducted a Limited Asbestos Assessment Survey of the Fire Station #1 located at 2061 3rd Street, La Verne, California 91750. This survey was completed at the request of Colin Purdy from City of La Verne and was completed by Certified Site Surveillance Technician, Mitchell Martinez (CSST# 13-5045), under the direction of Certified Asbestos Consultant, Victor Ruiz (CAC# 15-5589) who are employees of TRUST Environmental Solutions located at 317 W. Ventura Blvd., #1067, Camarillo, California 93010. Asbestos samples were hand delivered to:

AIH Laboratory (NVLAP; 500079-0) located at 2556 West Woodland Drive in Anaheim, CA 92801. AIH Laboratory can be reached at (562) 860-2201 or FrontDesk@AIHLab.com.

Prior to inspection, TRUST Environmental was informed of a water loss, affecting the interior. Visible damage was noted from the Roof Access Stairwell Flooring. No obvious structural or fire damages were observed.

Section II: Results Summary

RESULT:
- ☒ Asbestos was Detected
- ☐ Asbestos was Not Detected
- ☐ Materials are Lead Based
- ☐ Materials are Lead Containing
- ☒ Materials are Lead Safe

Asbestos was detected within the black asphaltic flooring mastic, and grey fibrous backing.

All materials sampled for lead were found to be lead safe.

A total of 47 asbestos PLM bulk samples were collected. 50 samples were analyzed.
*TRUST Environmental includes the first three (3) layers of material analyzed. Each additional layer analyzed after three (3) is charged as one (1) additional sample. Per AQMD Rule 1403 and EPA Test Method (EPA/600/R 93/116) Section 2.1.5.2, for materials composed of distinct layers or two or more distinct building materials, each layer or distinct building material should be treated as a discrete sample. TRUST Environmental is required to analyze each layer of material until positive material is detected or until all layers are analyzed and no asbestos is detected.

A total of 2 lead XRF-Analyzer samples were collected and analyzed on site.

Please see Tables I and II below for a summary of the survey results followed by supplemental information including recommendations and testing methodologies.

Table I: Summary of Asbestos PLM Sample Results – June 6, 2025

Sample ID	Building Material Sampled	Result	Quantity	Friability	Condition	Air Quality District	P5 Req
A-01	Compressor Room – Drywall/Joint Compound	NAD	180 sf*	Friable	D	SCAQMD	No
A-02	Compressor Room – Drywall/Joint Compound	NAD	180 sf*	Friable	D	SCAQMD	No
A-03	Compressor Room – Drywall/Joint Compound	NAD	180 sf*	Friable	D	SCAQMD	No
B-01	Storage Room – Brown Cove Base, Dark Brown Mastic	NAD	18 sf*	Non-Friable	G	SCAQMD	No
B-02	Storage Room – Brown Cove Base, Dark Brown Mastic	NAD	18 sf*	Non-Friable	G	SCAQMD	No

B-03	Storage Room – Brown Cove Base, Dark Brown Mastic	NAD	18 sf*	Non-Friable	G	SCAQMD	No

Reference Legend:
NAD – No Asbestos Detected, CH – Chrysotile Asbestos
NAD (h) – No Asbestos Detected but material is still considered asbestos containing due to being part of a homogenous area.
NAD (t) – No Asbestos Detected but material is still considered to have trace level asbestos due to being part of a homogenous area.
sf* - Estimated Square Feet
G - Good, D – Damaged, SD – Significantly Damaged
SCAQMD – South Coast Air Quality Management District

Table II: Summary of Asbestos PLM Sample Results – July 1, 2025

Sample ID	Building Material Sampled	Result	Quantity	Friability	Condition	Air Quality District	P5 Req
A-1	Roof Access Stairwell Walls – White Joint Compound with Paint	NAD	320sf*	Non-Friable	G	SCAQMD	No
A-1	Roof Access Stairwell Walls – White Drywall with Paper	NAD	320sf*	Non-Friable	G	SCAQMD	No
A-2	Roof Access Stairwell Walls – White Joint Compound with Paint	NAD	320sf*	Non-Friable	G	SCAQMD	No
A-2	Roof Access Stairwell Walls – White Drywall with Paper	NAD	320sf*	Non-Friable	G	SCAQMD	No
A-3	Roof Access Stairwell Walls – White Joint Compound with Paint	NAD	160sf*	Non-Friable	G	SCAQMD	No
A-3	Roof Access Stairwell Walls – White Drywall with Paper	NAD	160sf*	Non-Friable	G	SCAQMD	No
A-4	Roof Access Stairwell Flooring – Brown Floor Tile, Dark Brown Brittle Mastic	NAD	160sf*	Non-Friable	D	SCAQMD	No
A-5	Roof Access Stairwell Flooring – Brown Floor Tile, Dark Brown Brittle Mastic	NAD	160sf*	Non-Friable	D	SCAQMD	No

A-6	Roof Access Stairwell Flooring – Brown Floor Tile, Dark Brown Brittle Mastic	NAD	160sf*	Non-Friable	D	SCAQMD	No
A-7	Roof Access Stairwell @ Base of Wall – Brown Flat Rubbery Material, Dark Brown Brittle Mastic	NAD	8sf*	Non-Friable	G	SCAQMD	No
A-8	Roof Access Stairwell @ Base of Wall – Brown Flat Rubbery Material, Dark Brown Brittle Mastic	NAD	8sf*	Non-Friable	G	SCAQMD	No
A-9	Roof Access Stairwell @ Base of Wall – Brown Flat Rubbery Material, Dark Brown Brittle Mastic	NAD	8sf*	Non-Friable	G	SCAQMD	No
A-10	Day Room Walls – White Joint Compound with Paint	NAD	620sf*	Non-Friable	G	SCAQMD	No
A-10	Day Room Walls – Brown Drywall with Paper	NAD	620sf*	Non-Friable	G	SCAQMD	No
A-11	Gym Room Walls – White Joint Compound with Paint	NAD	1000sf*	Non-Friable	G	SCAQMD	No
A-11	Gym Room Walls – Brown Drywall with Paper	NAD	1000sf*	Non-Friable	G	SCAQMD	No
A-12	Bathroom Walls – White Joint Compound with Paint	NAD	440sf*	Non-Friable	G	SCAQMD	No
A-12	Bathroom Walls – Brown Drywall with Paper	NAD	440sf*	Non-Friable	G	SCAQMD	No
A-13	Bedroom #2 Walls – White Joint Compound with Paint	NAD	600sf*	Non-Friable	G	SCAQMD	No
A-13	Bedroom #2 Walls – White Drywall with Paper	NAD	600sf*	Non-Friable	G	SCAQMD	No

A-14	Bedroom #3 Walls – White Joint Compound with Paint	NAD	400sf*	Non-Friable	G	SCAQMD	No
A-14	Bedroom #3 Walls – White Drywall with Paper	NAD	400sf*	Non-Friable	G	SCAQMD	No
A-15	Laundry @ Base of Wall – Brown Flat Rubbery Material, Dark Brown Brittle Mastic	NAD	6sf*	Non-Friable	G	SCAQMD	No
A-16	Laundry @ Base of Wall – Brown Flat Rubbery Material, Dark Brown Brittle Mastic	NAD	6sf*	Non-Friable	G	SCAQMD	No
A-17	Janitors Closet @ Base of Wall – Brown Flat Rubbery Material, Dark Brown Brittle Mastic	NAD	5sf*	Non-Friable	G	SCAQMD	No
A-18	Gym Room @ Base of Wall – Brown Flat Rubbery Material, Tan Mastic	NAD	25sf*	Non-Friable	G	SCAQMD	No
A-19	Stairwell Landing @ Base of Wall – Brown Flat Rubbery Material, Tan Mastic	NAD	18sf*	Non-Friable	G	SCAQMD	No
A-20	Hallway @ Base of Wall – Brown Flat Rubbery Material, Tan Mastic	NAD	7sf*	Non-Friable	G	SCAQMD	No
A-21	**Laundry Room Flooring – Black Asphaltic Mastic**	**2%CH**	**40sf***	**Non-Friable**	**G**	**SCAQMD**	**No**
A-21	Laundry Room Flooring – Beige Floor Tile	NAD(h)	40sf*	Non-Friable	G	SCAQMD	No
A-22	**Laundry Room Flooring – Black Asphaltic Mastic**	**2%CH**	**40sf***	**Non-Friable**	**G**	**SCAQMD**	**No**
A-22	Laundry Room Flooring – Beige Floor Tile	NAD(h)	40sf*	Non-Friable	G	SCAQMD	No
A-23	**Laundry Room Flooring – Black Asphaltic Mastic**	**2%CH**	**40sf***	**Non-Friable**	**G**	**SCAQMD**	**No**
A-23	Laundry Room Flooring – Beige Floor Tile	NAD(h)	40sf*	Non-Friable	G	SCAQMD	No

A-24	Janitor's Closet Multi-Layer Flooring – Black Asphaltic Mastic	2%CH	30sf*	Non-Friable	G	SCAQMD	No
A-24	Janitor's Closet Multi-Layer Flooring – Peach Vinyl Material, Grey Vinyl Tile, Clear Adhesive	NAD(h)	30sf*	Non-Friable	G	SCAQMD	No
A-25	Janitor's Closet Multi-Layer Flooring – Black Asphaltic Mastic	2%CH	30sf*	Non-Friable	G	SCAQMD	No
A-25	Janitor's Closet Multi-Layer Flooring – Peach Vinyl Material, Grey Vinyl Tile, Clear Adhesive	NAD(h)	30sf*	Non-Friable	G	SCAQMD	No
A-26	Janitor's Closet Multi-Layer Flooring – Black Asphaltic Mastic	2%CH	30sf*	Non-Friable	G	SCAQMD	No
A-26	Janitor's Closet Multi-Layer Flooring – Peach Vinyl Material, Grey Vinyl Tile, Clear Adhesive	NAD(h)	30sf*	Non-Friable	G	SCAQMD	No
A-27	Bathroom Flooring – Grey Fibrous Backing	40%CH	120sf*	Non-Friable	G	SCAQMD	No
A-27	Bathroom Flooring – Tan Vinyl Material, Yellow Mastic	NAD(h)	120sf*	Non-Friable	G	SCAQMD	No
A-28	Bathroom Flooring – Grey Fibrous Backing	40%CH	120sf*	Non-Friable	G	SCAQMD	No
A-28	Bathroom Flooring – Tan Vinyl Material, Yellow Mastic	NAD(h)	120sf*	Non-Friable	G	SCAQMD	No
A-29	Bathroom Flooring – Grey Fibrous Backing	40%CH	120sf*	Non-Friable	G	SCAQMD	No
A-29	Bathroom Flooring – Tan Vinyl Material, Yellow Mastic	NAD(h)	120sf*	Non-Friable	G	SCAQMD	No
A-30	Bedroom #2 – Yellow Mastic	NAD	200sf*	Non-Friable	G	SCAQMD	No
A-31	Bedroom #3 – Yellow Mastic	NAD	100sf*	Non-Friable	G	SCAQMD	No

A-32	Bedroom #4 – Yellow Mastic	NAD	100sf*	Non-Friable	G	SCAQMD	No
A-33	Gym Room Flooring – Brown Vinyl Material, Black Vinyl Tile, Yellow Mastic	NAD	625sf*	Non-Friable	G	SCAQMD	No
A-34	Stairwell Landing Flooring – Brown Vinyl Material, Black Vinyl Tile, Yellow Mastic	NAD	300sf*	Non-Friable	G	SCAQMD	No
A-35	Hallway Flooring – Brown Vinyl Material, Black Vinyl Tile, Yellow Mastic	NAD	40sf*	Non-Friable	G	SCAQMD	No
A-36	Conference Room Walls – White Joint Compound	NAD	490sf*	Non-Friable	G	SCAQMD	No
A-36	Conference Room Walls – White Drywall with Paper	NAD	490sf*	Non-Friable	G	SCAQMD	No
A-37	Conference Room Walls – White Joint Compound	NAD	490sf*	Non-Friable	G	SCAQMD	No
A-37	Conference Room Walls – White Drywall with Paper	NAD	490sf*	Non-Friable	G	SCAQMD	No
A-38	Conference Room Walls – White Joint Compound	NAD	490sf*	Non-Friable	G	SCAQMD	No
A-38	Conference Room Walls – White Drywall with Paper	NAD	490sf*	Non-Friable	G	SCAQMD	No
A-39	Conference Room Drop Ceiling – Grey Compressed Ceiling Tiles with Paint	NAD	300sf*	Friable	G	SCAQMD	No
A-40	Conference Room Drop Ceiling – Grey Compressed Ceiling Tiles with Paint	NAD	300sf*	Friable	G	SCAQMD	No
A-41	Engine Bay Drop Ceiling – Grey	NAD	2500sf*	Friable	G	SCAQMD	No

	Compressed Ceiling Tiles with Paint						

Reference Legend:
NAD – No Asbestos Detected, CH – Chrysotile Asbestos
NAD (h) – No Asbestos Detected but material is still considered asbestos containing due to being part of a homogenous area.
NAD (t) – No Asbestos Detected but material is still considered to have trace level asbestos due to being part of a homogenous area.
sf* - Estimated Square Feet
G - Good, D – Damaged, SD – Significantly Damaged
SCAQMD – South Coast Air Quality Management District

Table III: Summary of Lead XRF-gun Sample Results

Sample ID	Location	Color of Material	Type of Material Sampled	Condition	Result
L-01	Compressor Room	Tan	Drywall Wall	Intact	<0.1mg/cm^2
L-02	Storage Room	Tan	Cinder Block Wall	Intact	<0.1mg/cm^2

Section III: Recommendations

Asbestos Recommendations:

☐ NAD - Asbestos was not detected within the sampled area. No further action is required.

☐ ≤0.1% CH – This material was further analyzed by point count and the asbestos found was determined to be at trace level. The contractor must comply with Cal/OSHA asbestos exposure monitoring. Although the material is below quantifiable limits of asbestos, contracted employees should be instructed on wet methods of removal, HEPA vacuuming, prompt clean up, and the prevention of raising dust while work is performed.

☐ <1% CH - Asbestos was detected in trace amounts in the sampled area. This material may be further analyzed by 1000-point count at the request of the client to determine the method of removal that must be used. If not further analyzed or determined to be >0.1% and <1% CH by point count, this material must be treated as asbestos containing material. Any work that will disturb asbestos containing materials or asbestos containing construction materials must be completed by a California state licensed Asbestos Abatement Contractor. Abatement activities must be performed by asbestos trained personnel using proper PPE and controls. The abatement contractor must comply with all local, state, and federal regulations governing the removal and/or disturbance of Asbestos Containing Materials.

☒ Greater than 1% CH - Asbestos was detected in amounts greater than 1% CH in the sampled area. This material must be treated as asbestos containing material. Any work that will disturb asbestos containing materials or asbestos containing construction materials must be completed by a California state licensed Asbestos Abatement Contractor. Abatement activities must be performed by asbestos trained personnel using proper PPE and controls. The abatement contractor must comply with all local, state, and federal regulations governing the removal and/or disturbance of Asbestos Containing Materials.

Lead Recommendations:

☒ The material contains <200 PPM or <0.1 mg/cm2 – Material is considered Lead Safe.

☐ <5000PPM or <1.0 mg/cm2 (or <0.7mg/cm2 if in LA County) – This material is considered Lead Containing and does NOT require "Lead Abatement". This material may be handled by a regular contractor who has prepared a Cal/OSHA lead compliance plan for the protection of its workers.

☐ ≥5000PPM or ≥1.0 mg/cm2 (or ≥0.7mg/cm2 if in LA County) - This material is considered Lead Based Paint and requires "Lead Abatement". This material must be handled by a California state licensed Lead Contractor for any work that will disturb any Lead Based Paint.

Section IV: Purpose and Methodologies

The purpose of this survey assessment was to identify Asbestos Containing Materials (ACM) and Lead Containing Materials that may be impacted by planned repair, remodel, renovation and/or demolition activities at the survey location. TRUST Environmental first conducted a visual inspection of the survey location to identify and assess the condition of materials to be sampled.

Bulk material samples of suspected asbestos containing material were collected, categorized into homogenous groupings, labeled a unique sample number for each sample, and placed into a sealed container. Asbestos samples were analyzed via Polarized Light Microscopy (PLM) for asbestos content by an accredited laboratory listed below. Principles described in the EPA 600 method were used in the preparation and analysis of the bulk samples. US EPA government regulation requires that a limited number of samples be collected from each identified homogenous area. If one sample in a homogenous area is determined to be asbestos containing, the entire homogenous area must be considered asbestos containing, even if no asbestos was detected in any other samples within the homogenous area. Types of materials that are consistently found to be asbestos containing materials, may be assumed by the TRUST Environmental Solutions technician to be Asbestos Containing Material (ACM) via AQMD rule 1403. No destructive sampling was conducted. As such, any inaccessible areas that would require destructive sampling were not inspected or sampled. All areas that renovation or demolition plans will impact must be inspected or sampled. Asbestos bulk samples were delivered to and analyzed via PLM by an accredited laboratory.

The specific number of samples collected was determined by using the methods required by the Federal AHERA regulations (40 CFR, Part 763.86) as noted below:

1) For Surfacing Material:
1,000 ft2 or less - collect 3 samples
1,001 to 5,000 ft2 - collect 5 samples
5,001 ft2 or greater - collect 7 samples
2) For Thermal System Insulation:
"In a randomly distributed manner" - collect 3 samples
6 linear feet of patching or less - collect 1 sample
cementitious pipe fittings - "In a manner sufficient to determine"

3) For all Miscellaneous Material:

Collect samples "In a manner sufficient to determine whether material is ACM (asbestos containing material) or not ACM."

Lead samples were taken via XRF-gun and analyzed on site for lead content.

Section V: Limitations

TRUST Environmental Solutions presents this report and makes the above recommendations based on limitations of the analytical method, along with independent research and industry consensus. TRUST Environmental and representatives of TRUST Environmental are not licensed as Medical Professionals and can make no medical diagnoses. TRUST Environmental was limited to the conditions and observations present only on the day of inspection. Environmental testing is an imperfect science and Asbestos Surveying is limited. In addition, reports may contain inaccuracies. TRUST Environmental may revise the above content of this report at any time when presented with new information. Any reference to quantities within this report are estimates and are not actual. TRUST Environmental was limited to standard practices, the scope of services, parameters of the analytical method used, and conditions present at the time of inspection. In addition, TRUST Environmental was limited to the following:

- Additional suspect materials could be present between walls, in voids, or in other concealed areas. Caution should be exercised regarding these areas. In the event that additional materials are found which have not been sampled, TRUST Environmental recommends that work stops until those materials can be sampled for asbestos and/or lead content.
- Limitations due to sampling and laboratory analysis constraints can hinder the investigation. TRUST Environmental does not warrant, guarantee, or profess to have the ability to locate or identify all asbestos containing materials in a facility.
- Confined spaces, and areas determined by TRUST Environmental's personnel as unsafe to access, are excluded from the scope of work.
- TRUST Environmental does not guarantee or warrant that the facility or workplace is safe; nor does TRUST Environmental's involvement in this property relieve the Client, building owner/operator or tenant of any continuing responsibility of providing a safe facility or living space.
- TRUST Environmental is not, and has no responsibility as, a generator, operator, treater, storer, transporter or disposer of hazardous materials or waste found or identified as a result of TRUST Environmental's work.

Thank you for choosing TRUST Environmental Solutions. Please contact us at (805) 72-TRUST or TestIt@TRUSTenv.com for any additional testing needs. Please contact the Reports Department at GetResults@TRUSTenv.com for any questions or requested revisions regarding this report and we would be happy to assist you.

Written By:

Joey Caiazza
Senior Reports Department Supervisor
GetResults@TRUSTenv.com
(805) 72-TRUST
TRUST Environmental Solutions
317 W. Ventura Blvd., #1067
Camarillo, California 93010

Reviewed By:

Victor Ruiz
Certified Asbestos Consultant (15-5589) and LRC (00011686)
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TRUST Environmental Solutions
317 W. Ventura Blvd., #1067
Camarillo, California 93010

Section VI: Appendices

Please see below for any relevant analytical results, site diagrams, and certifications regarding the above project.

APPENDIX A – ANALYTICAL RESULTS AND CHAIN OF CUSTODY

eurofins | Built Environment Testing

Report for:

Lab Results
TRUST Environmental Solutions
317 Ventura Blvd.
#1067
Camarillo, CA 93010

Regarding: Eurofins Built Environment Testing West, LLC
Project: 13791; Fire Station #1 : 2061 3rd Street La Verne, CA 91750
EML ID: 4101425

Approved by:

Approved Signatory
Roshanak Kalantari

Dates of Analysis:
Asbestos PLM: 06-06-2025

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EB-AS-S-1267)
NVLAP Lab Code 200945-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins Built Environment Testing West, LLC
1010 N Central Avenue, Suite 460, Glendale, CA 91202
(833) 465-5857 www.eurofinsus.com/Built

Client: TRUST Environmental Solutions
C/O: Lab Results
Re: 13791; Fire Station #1 : 2061 3rd Street La Verne, CA 91750

Date of Sampling: 06-06-2025
Date of Receipt: 06-06-2025
Date of Report: 06-06-2025

ASBESTOS PLM REPORT

Total Samples Submitted:	6
Total Samples Analyzed:	6
Total Samples with Layer Asbestos Content > 1%:	0

Location: A-01, Compressor room DW/JC Lab ID-Version‡: 20460969-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: A-02, Compressor room DW/JC Lab ID-Version‡: 20460970-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: A-03, Compressor room DW/JC Lab ID-Version‡: 20460971-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

All components not quantified as asbestos content and non-asbestos content are considered to be non-fibrous matrix components. Matrix components may include, but are not limited to, gypsum, paint, silicate minerals, vinyl, binder, calcium carbonate, tar, and foam.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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1010 N Central Avenue, Suite 460, Glendale, CA 91202
(833) 465-5857 www.eurofinsus.com/Built

Client: TRUST Environmental Solutions
C/O: Lab Results
Re: 13791; Fire Station #1 : 2061 3rd Street La Verne, CA 91750

Date of Sampling: 06-06-2025
Date of Receipt: 06-06-2025
Date of Report: 06-06-2025

ASBESTOS PLM REPORT

Location: B-01, Compressor room cove base and mastic Lab ID-Version‡: 20460972-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Dark Brown Mastic	ND
Composite Non-Asbestos Content:	2% Talc
Sample Composite Homogeneity:	Moderate

Location: B-02, Compressor room cove base and mastic Lab ID-Version‡: 20460973-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Dark Brown Mastic	ND
Composite Non-Asbestos Content:	2% Talc
Sample Composite Homogeneity:	Moderate

Location: B-03, Storage room cove base and mastic Lab ID-Version‡: 20460974-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Dark Brown Mastic	ND
Composite Non-Asbestos Content:	2% Talc
Sample Composite Homogeneity:	Moderate

All components not quantified as asbestos content and non-asbestos content are considered to be non-fibrous matrix components. Matrix components may include, but are not limited to, gypsum, paint, silicate minerals, vinyl, binder, calcium carbonate, tar, and foam.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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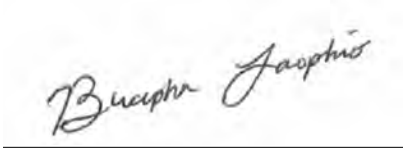
Client: TRUST Environmental Solutions
C/O: Lab Results
Re: 13791; Fire Station #1 : 2061 3rd Street La Verne, CA 91750

Date of Sampling: 06-06-2025
Date of Receipt: 06-06-2025
Date of Report: 06-06-2025

ASBESTOS PLM REPORT

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Buapha Laophio

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

AIH LABORATORY
2556 W Woodland Dr Anaheim, CA 92801

BULK ASBESTOS FIBER ANALYSIS
BY POLARIZED LIGHT MICROSCOPY

NVLAP TESTING
NVLAP LAB CODE 500079-0
Phone:(562) 860-2201
www.aihlab.com

Client Name: Trust Environmental Solutions
Project Manager: Jay Barkley
Client Address: 317 West Ventura Boulevard, #1067, Camarillo, CA 93010
Project Number: 14148-4134
Project Location: 2061 3rd Street, La Verne, CA 91750

Lab Batch Number: 2514120
Samples Submitted: 41
Samples Analyzed: 41
Analysis Method: EPA 600/R-93-116 & EPA 600/M4-82-020

Lab ID: 251412001 **Client ID:** A-1

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material with paint	**None Detected**	None Detected	JC/Binder, Paint
2.	White chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

Lab ID: 251412002 **Client ID:** A-2

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material with paint	**None Detected**	None Detected	JC/Binder, Paint
2.	White chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

Lab ID: 251412003 **Client ID:** A-3

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material with paint	**None Detected**	None Detected	JC/Binder, Paint
2.	White chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

Lab ID: 251412004 **Client ID:** A-4

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown floor tile	**None Detected**	None Detected	Binder/Filler
2.	Dark brown brittle mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412005 **Client ID:** A-5

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown floor tile	**None Detected**	None Detected	Binder/Filler
2.	Dark brown brittle mastic	**None Detected**	None Detected	Mastic/Binder

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Phone:(562) 860-2201
www.aihlab.com

Client Name: Trust Environmental Solutions
Project Manager: Jay Barkley
Client Address: 317 West Ventura Boulevard, #1067, Camarillo, CA 93010
Project Number: 14148-4134
Project Location: 2061 3rd Street, La Verne, CA 91750

Lab Batch Number: 2514120
Samples Submitted: 41
Samples Analyzed: 41
Analysis Method: EPA 600/R-93-116 & EPA 600/M4-82-020

Lab ID: 251412006 **Client ID:** A-6

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown floor tile	**None Detected**	None Detected	Binder/Filler
2.	Dark brown brittle mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412007 **Client ID:** A-7

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown flat rubbery material	**None Detected**	None Detected	Binder/Filler
2.	Dark brown brittle mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412008 **Client ID:** A-8

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown flat rubbery material	**None Detected**	None Detected	Binder/Filler
2.	Dark brown brittle mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412009 **Client ID:** A-9

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown flat rubbery material	**None Detected**	None Detected	Binder/Filler
2.	Dark brown brittle mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412010 **Client ID:** A-10

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material with paint	**None Detected**	None Detected	JC/Binder, Paint
2.	Brown chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

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Client Name: Trust Environmental Solutions
Project Manager: Jay Barkley
Client Address: 317 West Ventura Boulevard, #1067, Camarillo, CA 93010
Project Number: 14148-4134
Project Location: 2061 3rd Street, La Verne, CA 91750

Lab Batch Number: 2514120
Samples Submitted: 41
Samples Analyzed: 41
Analysis Method: EPA 600/R-93-116 & EPA 600/M4-82-020

Lab ID: 251412011 **Client ID:** A-11

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material with paint	**None Detected**	None Detected	JC/Binder, Paint
2.	White chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

Lab ID: 251412012 **Client ID:** A-12

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material with paint	**None Detected**	None Detected	JC/Binder, Paint
2.	Brown chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

Lab ID: 251412013 **Client ID:** A-13

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material with paint	**None Detected**	None Detected	JC/Binder, Paint
2.	White chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

Lab ID: 251412014 **Client ID:** A-14

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material with paint	**None Detected**	None Detected	JC/Binder, Paint
2.	White chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

Lab ID: 251412015 **Client ID:** A-15

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown flat rubbery material	**None Detected**	None Detected	Binder/Filler
2.	Dark brown brittle mastic	**None Detected**	None Detected	Mastic/Binder

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Client Name: Trust Environmental Solutions
Project Manager: Jay Barkley
Client Address: 317 West Ventura Boulevard, #1067, Camarillo, CA 93010
Project Number: 14148-4134
Project Location: 2061 3rd Street, La Verne, CA 91750

Lab Batch Number: 2514120
Samples Submitted: 41
Samples Analyzed: 41
Analysis Method: EPA 600/R-93-116 & EPA 600/M4-82-020

Lab ID: 251412016 **Client ID:** A-16

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown flat rubbery material	**None Detected**	None Detected	Binder/Filler
2.	Dark brown brittle mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412017 **Client ID:** A-17

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown flat rubbery material	**None Detected**	None Detected	Binder/Filler
2.	Dark brown brittle mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412018 **Client ID:** A-18

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Black flat rubbery material	**None Detected**	None Detected	Binder/Filler
2.	Tan mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412019 **Client ID:** A-19

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Black flat rubbery material	**None Detected**	None Detected	Binder/Filler
2.	Tan mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412020 **Client ID:** A-20

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Black flat rubbery material	**None Detected**	None Detected	Binder/Filler
2.	Tan mastic	**None Detected**	None Detected	Mastic/Binder

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Client Name: Trust Environmental Solutions
Project Manager: Jay Barkley
Client Address: 317 West Ventura Boulevard, #1067, Camarillo, CA 93010
Project Number: 14148-4134
Project Location: 2061 3rd Street, La Verne, CA 91750

Lab Batch Number: 2514120
Samples Submitted: 41
Samples Analyzed: 41
Analysis Method: EPA 600/R-93-116 & EPA 600/M4-82-020

Lab ID: 251412021 **Client ID:** A-21

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Beige floor tile	**None Detected**	None Detected	Binder/Filler
2.	Black asphaltic mastic	**Chrysotile 2%**	None Detected	Asphalt/Binder

Lab ID: 251412022 **Client ID:** A-22

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Beige floor tile	**None Detected**	None Detected	Binder/Filler
2.	Black asphaltic mastic	**Chrysotile 2%**	None Detected	Asphalt/Binder

Lab ID: 251412023 **Client ID:** A-23

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Beige floor tile	**None Detected**	None Detected	Binder/Filler
2.	Black asphaltic mastic	**Chrysotile 2%**	None Detected	Asphalt/Binder

Lab ID: 251412024 **Client ID:** A-24

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Peach vinyl material	**None Detected**	None Detected	Vinyl/Binder
2.	Grey vinyl tile	**None Detected**	None Detected	Vinyl/Binder
3.	Clear adhesive	**None Detected**	None Detected	Mastic/Binder
4.	Black asphaltic mastic	**Chrysotile 2%**	None Detected	Asphalt/Binder

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BULK ASBESTOS FIBER ANALYSIS

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Client Name: Trust Environmental Solutions
Project Manager: Jay Barkley
Client Address: 317 West Ventura Boulevard, #1067, Camarillo, CA 93010
Project Number: 14148-4134
Project Location: 2061 3rd Street, La Verne, CA 91750

Lab Batch Number: 2514120
Samples Submitted: 41
Samples Analyzed: 41
Analysis Method: EPA 600/R-93-116 & EPA 600/M4-82-020

Lab ID: 251412025 **Client ID:** A-25

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Peach vinyl material	**None Detected**	None Detected	Vinyl/Binder
2.	Grey vinyl tile	**None Detected**	None Detected	Vinyl/Binder
3.	Clear adhesive	**None Detected**	None Detected	Mastic/Binder
4.	Black asphaltic mastic	**Chrysotile 2%**	None Detected	Asphalt/Binder

Lab ID: 251412026 **Client ID:** A-26

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Peach vinyl material	**None Detected**	None Detected	Vinyl/Binder
2.	Grey vinyl tile	**None Detected**	None Detected	Vinyl/Binder
3.	Clear adhesive	**None Detected**	None Detected	Mastic/Binder
4.	Black asphaltic mastic	**Chrysotile 2%**	None Detected	Asphalt/Binder

Lab ID: 251412027 **Client ID:** A-27

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Tan vinyl material	**None Detected**	None Detected	Vinyl/Binder
2.	Grey fibrous backing	**Chrysotile 40%**	Cellulose 20%	Binder/Filler
3.	Yellow mastic	**None Detected**	None Detected	Mastic/Binder

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Client Name: Trust Environmental Solutions
Project Manager: Jay Barkley
Client Address: 317 West Ventura Boulevard, #1067, Camarillo, CA 93010
Project Number: 14148-4134
Project Location: 2061 3rd Street, La Verne, CA 91750

Lab Batch Number: 2514120
Samples Submitted: 41
Samples Analyzed: 41
Analysis Method: EPA 600/R-93-116 & EPA 600/M4-82-020

Lab ID: 251412028 **Client ID:** A-28

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Tan vinyl material	**None Detected**	None Detected	Vinyl/Binder
2.	Grey fibrous backing	**Chrysotile 40%**	Cellulose 20%	Binder/Filler
3.	Yellow mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412029 **Client ID:** A-29

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Tan vinyl material	**None Detected**	None Detected	Vinyl/Binder
2.	Grey fibrous backing	**Chrysotile 40%**	Cellulose 20%	Binder/Filler
3.	Yellow mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412030 **Client ID:** A-30

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Yellow mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412031 **Client ID:** A-31

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Yellow mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412032 **Client ID:** A-32

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Yellow mastic	**None Detected**	None Detected	Mastic/Binder

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Client Name: Trust Environmental Solutions
Project Manager: Jay Barkley
Client Address: 317 West Ventura Boulevard, #1067, Camarillo, CA 93010
Project Number: 14148-4134
Project Location: 2061 3rd Street, La Verne, CA 91750

Lab Batch Number: 2514120
Samples Submitted: 41
Samples Analyzed: 41
Analysis Method: EPA 600/R-93-116 & EPA 600/M4-82-020

Lab ID: 251412033 **Client ID:** A-33

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown vinyl material	**None Detected**	None Detected	Vinyl/Binder
2.	Black vinyl tile	**None Detected**	None Detected	Vinyl/Binder
3.	Yellow mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412034 **Client ID:** A-34

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown vinyl material	**None Detected**	None Detected	Vinyl/Binder
2.	Black vinyl tile	**None Detected**	None Detected	Vinyl/Binder
3.	Yellow mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412035 **Client ID:** A-35

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Brown vinyl material	**None Detected**	None Detected	Vinyl/Binder
2.	Black vinyl tile	**None Detected**	None Detected	Vinyl/Binder
3.	Yellow mastic	**None Detected**	None Detected	Mastic/Binder

Lab ID: 251412036 **Client ID:** A-36

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material	**None Detected**	None Detected	JC/Binder
2.	White chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

AIH LABORATORY
2556 W Woodland Dr Anaheim, CA 92801

BULK ASBESTOS FIBER ANALYSIS
BY POLARIZED LIGHT MICROSCOPY

NVLAP TESTING
NVLAP LAB CODE 500079-0
Phone:(562) 860-2201
www.aihlab.com

Client Name: Trust Environmental Solutions
Project Manager: Jay Barkley
Client Address: 317 West Ventura Boulevard, #1067, Camarillo, CA 93010
Project Number: 14148-4134
Project Location: 2061 3rd Street, La Verne, CA 91750

Lab Batch Number: 2514120
Samples Submitted: 41
Samples Analyzed: 41
Analysis Method: EPA 600/R-93-116 & EPA 600/M4-82-020

Lab ID: 251412037 **Client ID:** A-37

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material	**None Detected**	None Detected	JC/Binder
2.	White chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

Lab ID: 251412038 **Client ID:** A-38

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	White compacted powdery material	**None Detected**	None Detected	JC/Binder
2.	White chalky material with paper	**None Detected**	Cellulose 6%, Glass Fibers 2%	Gypsum/Binder

Lab ID: 251412039 **Client ID:** A-39

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Grey compressed fibrous material with paint	**None Detected**	Cellulose 65%, Glass Fibers 20%	Binder/Filler, Perlite, Paint

Lab ID: 251412040 **Client ID:** A-40

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Grey compressed fibrous material with paint	**None Detected**	Cellulose 65%, Glass Fibers 20%	Binder/Filler, Perlite, Paint

Lab ID: 251412041 **Client ID:** A-41

Layer	Layer Description	Asbestos Type %	Other Fibrous Material %	Other Non Fibrous Material
1.	Grey compressed fibrous material with paint	**None Detected**	Cellulose 65%, Glass Fibers 20%	Binder/Filler, Perlite, Paint

AIH LABORATORY
2556 W Woodland Dr Anaheim, CA 92801

BULK ASBESTOS FIBER ANALYSIS

BY POLARIZED LIGHT MICROSCOPY

NVLAP TESTING
NVLAP LAB CODE 500079-0
Phone:(562) 860-2201
www.aihlab.com

Client Name: Trust Environmental Solutions
Project Manager: Jay Barkley
Client Address: 317 West Ventura Boulevard, #1067, Camarillo, CA 93010
Project Number: 14148-4134
Project Location: 2061 3rd Street, La Verne, CA 91750

Lab Batch Number: 2514120
Samples Submitted: 41
Samples Analyzed: 41
Analysis Method: EPA 600/R-93-116 & EPA 600/M4-82-020

Analyzed by: Don Nguyen **Signature:** **Date:** 07-02-2025

Reviewed by: Zubair Ahmed **Signature:** **Date:** 07-02-2025

Reporting limit is 1%. If the sample was not collected by AIH Laboratory then the accuracy of the results is limited by the methodology and experience of the sample collector. Clients can verify specific reporting limit requirement from local regulatory agencies. Liability limited to cost of samples analysis. This report shall not be reproduced except in full, without written approval of AIH Laboratory. It shall not be used to claim product endorsement by NVLAP or any other agency of the government. Reported results relate only to the samples tested and may not be the representative of the sample area. AIH Laboratory shall dispose of the Customer's samples 14 days after receiving the samples unless instructed to store them for an alternate period of time in writing.

TRUST Environmental Solutions
Results Begin With TRUST

TRUST Environmental Solutions
317 W Ventura Blvd., #1067, Ca
(805) 72-TRUST | www.TRUSTenv.com | Test

004101425

ASBESTOS & LEAD CHAIN OF CUSTODY RECORD

TRUST Assignment #: 13791 Survey Type: ☒Lim ☐Comp TAT Requested: ☒3HR ☐24HR ☐Other

Client Name:
Site Name: Fire Station #1
Site Address: 2061 3rd Street, La Verne, CA 91750

Type of Loss: Water Loss Sample Count (Specify Type) 6 PLM & 2 Lead
Analysis Requested: ☐PLM ☐TEM (Wipe) ☐TEM (MV) ☐PCM ☐Lead Paint Chip ☐Other

Sample ID	Collection Location		Material Type		F	NF	Condition	Total (Vol./Size)	Additional Notes (Color, P5, etc.)	
A-01	Compressor Room		DW/SC		X		Damage	180 ft		
↓ 02	↓		↓		↓		↓	↓		
↓ 03										
B-01			Cove Base & Mastic			X	Intact	18 ft		
↓ 02			↓			↓	↓	↓		
↓ 03	Storage Room									
L-01	Compressor Room	Wall	DW	Tan			Good		XRF	<0.1
↓ 02	Storage Room	↓	Cinder Block	↓			↓		↓	↓

Relinquished By

Date & Time: 6/6/25 9:00
Company Name: TRUST Environmental Solutions
Sampling Technician (Print): Rickie Osorio
Sampling Technician (Sign): Rickie Osorio

Received By

Date & Time: JUN 0 6 2025 2:00 pm
Company Name:
Laboratory Recipient (Print): Caleb Hershon
Laboratory Recipient (Sign): Caleb Hershon

Please send all results to
LabAnalysis@TRUSTenv.com

2514120

ASBESTOS & LEAD CHAIN OF CUSTODY RECORD

TRUST Assignment #: 14148-4134

TAT Requested: ☒3HR ☐24HR ☐Other

Client Name:

Analysis Requested: ☒PLM ☐TEM (Wipe) ☐TEM (MV) ☐PCM ☐Lead Paint Chip ☐Other

Site Name: Fire Station #1

Site Address: 2061 3rd Street, La Verne CA 91750

Sample Count (Specify Type): 41 ASB

A-1	Roof Access Stairwell	- Walls	DW/JC	X	Good	320	[redacted] ⓔ
2	↓	- ↓	↓			↓	
3		- Ceiling				160	
4		- Floor	12" Brown streaked VFT w/ Brown adhesive	X	DMG	160	(6 DMG)
5		-					
6		- ↓	↓			↓	↓
7		- @ Base of Wall	4" Brown Covebase w/ Brown Adhesive	X	Good	8	
8		-					
9	↓	- ↓	↓			↓	
A-10	Day Room	Walls	DW/JC	X	Good	620	
11	Gym Room					1000	
12	Bathroom					440	
13	Bedroom #2					600	
14	↓ #3	↓	↓	↓	↓	400	
15	Laundry	@ Base of Wall	4" Brown Covebase w/ Brown Adhesive	X	Good	6	
16	↓					↓	
17	Janitors closet	↓	↓	↓	↓	5	
18	Gym Room	↓	4" Black Covebase w/ Brown Adhesive	X	Good	25	

Date & Time: 07-01-25 @ 1000AM

Company Name: TRUST Environmental Solutions

Sampling Technician (Print): Mitchell Martinez

Sampling Technician (Sign): [signature]

Date & Time: 7.1.25 5:10

Company Name: AIHLab

Laboratory Recipient (Print): Audrey Aquino

Laboratory Recipient (Sign): [signature]

Page____of____

2514120

ASBESTOS & LEAD CHAIN OF CUSTODY RECORD

TRUST Assignment #: 1414B - 4134

TAT Requested: ☒3HR ☐24HR ☐Other

Client Name:

Analysis Requested: ☐PLM ☐TEM (Wipe) ☐TEM (MV) ☐PCM ☐Lead Paint Chip ☐Other

Site Name: FIRE STATION #1

Site Address: 2061 3rd STREET, LA VERNE CA 91750

Sample Count (Specify Type): 41 ASB

A-19	Stairwell landing - @ BASE OF wall	↓	x	Good	18ϕ
20	Hallway - ↓		x	↓	7ϕ
21	LAUNDRY Room - FLOOR	12"x12" TAN VFT w/ BLACK MASTIC	|		40ϕ
22	↓ - ↓				
23		↓	x		↓
24	JANITORS CLOSET - FLOOR	12"x12" TAN Patterned VFT w/ BLACK MASTIC	|		30ϕ
25	↓ - ↓				
26		↓	x		↓
27	BATHROOM - FLOOR	TAN SPECKLED LINOLEUM w/ Yellow adhesive	x		120ϕ
28	↓ - ↓		|		
29		↓			↓
30	BEDROOM #2 - under Carpet squares	Yellow Carpet Glue	x		200ϕ
31	#3 -		|		100ϕ
32	↓ #4 - ↓	↓			100ϕ
33	GYM Room - FLOOR	BROWN WOOD Patterned laminate Flooring w/ Yellow adhesive	x		625ϕ
34	Stairwell landing -				300ϕ
35	Hallway - ↓	↓	↓	↓	40ϕ

Date & Time: 07-01-25 @ 1000AM

Company Name: TRUST Environmental Solutions

Sampling Technician (Print): Mitchell Martinez

Sampling Technician (Sign): [signature]

Date & Time: 7.1.25 5:10

Company Name: AIHLab

Laboratory Recipient (Print): Andrey Aquino

Laboratory Recipient (Sign): [signature]

2514120

ASBESTOS & LEAD CHAIN OF CUSTODY RECORD

TRUST Assignment #: 14148-4134

TAT Requested: ☒3HR ☐24HR ☐Other ____

Client Name: ____

Analysis Requested: ☐PLM ☐TEM (Wipe) ☐TEM (MV) ☐PCM ☐Lead Paint Chip ☐Other ____

Site Name: FIRE STATION #1

Site Address: 2061 3rd STREET, LA VERNE CA 91750

Sample Count (Specify Type): 41 ASB

Sample ID	Collection Location	Material Type	F	NF	Condition	Total (Vol./Size)	Additional Notes (Color, Fill, etc.)
A-36	Conference Room – walls	DW/JC		x	Good	490ф	
37	↓ – ↓	↓		|	↓	↓	
38	↓ – ↓	↓		|	↓	↓	
39	Conference Room – Drop ceiling	2'x4' Fissured Ceiling Tiles	x		↓	300ф	
40	↓ – ↓	↓	|		↓	↓	
41	Engine Bay – ↓	↓	|		↓	2500ф	

Date & Time: 07-01-25 @ 1000am

Company Name: TRUST Environmental Solutions

Sampling Technician (Print): Mitchell Martinez

Sampling Technician (Sign): [signature]

Date & Time: 7.1.25 5:10

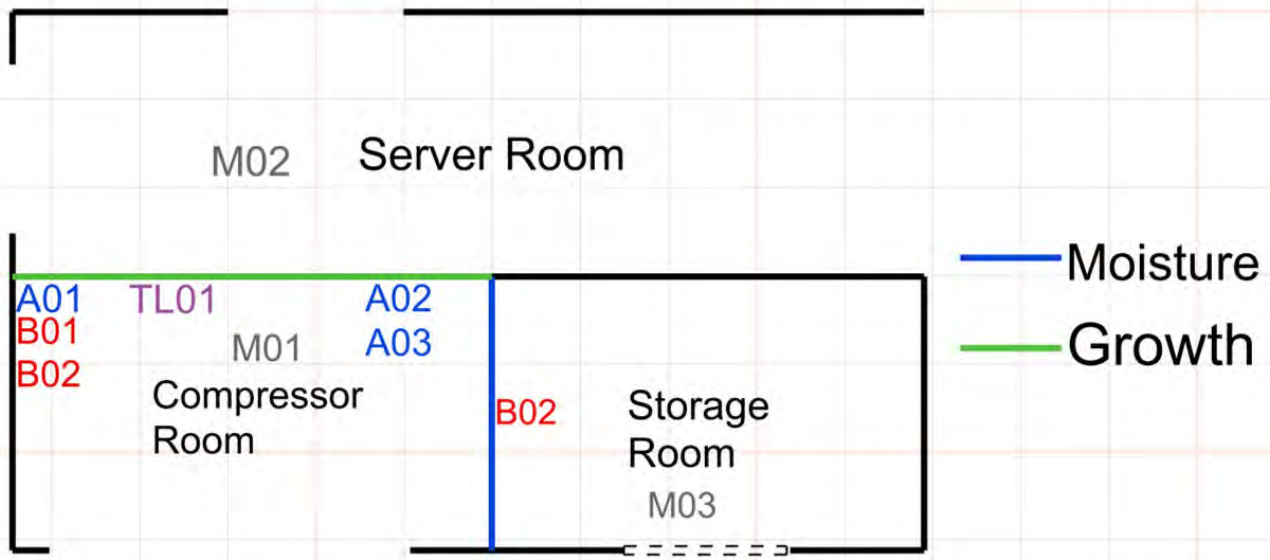
Company Name: AIH Lab

Laboratory Recipient (Print): Audrey Aquino

Laboratory Recipient (Sign): [signature]

Page____of____

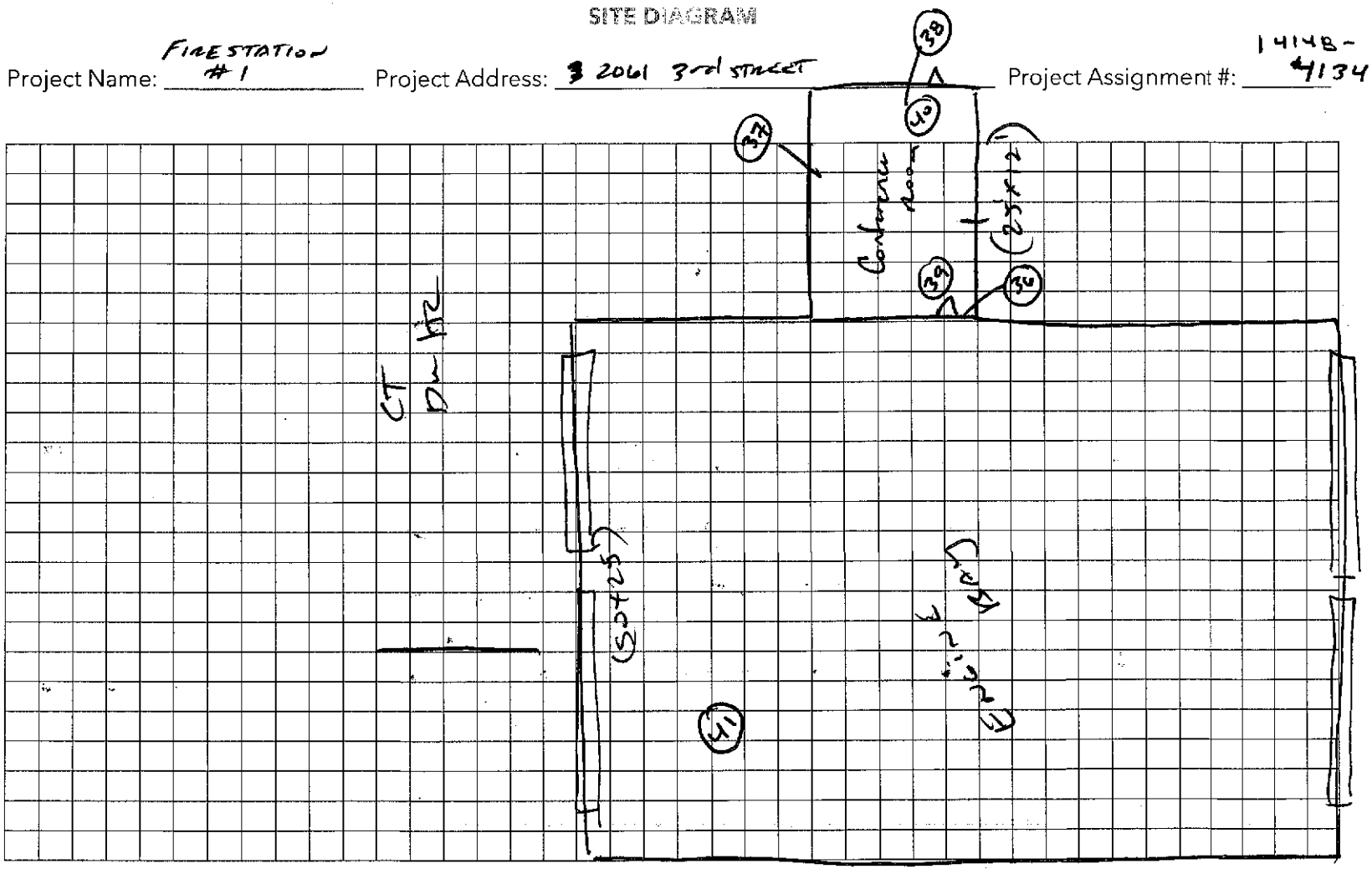
APPENDIX B – SITE DIAGRAM


M02
Server Room
A01
B01
B02
TL01
M01
A02
A03
Compressor
Room
B02
Storage
Room
M03
Moisture
Growth

2514120

SITE DIAGRAM

Project Name: FIRE STATION #1 Project Address: 2061 3rd STREET Project Assignment #: 14148-4134



Received by: Andrey Aquino
7-1-25 5:10

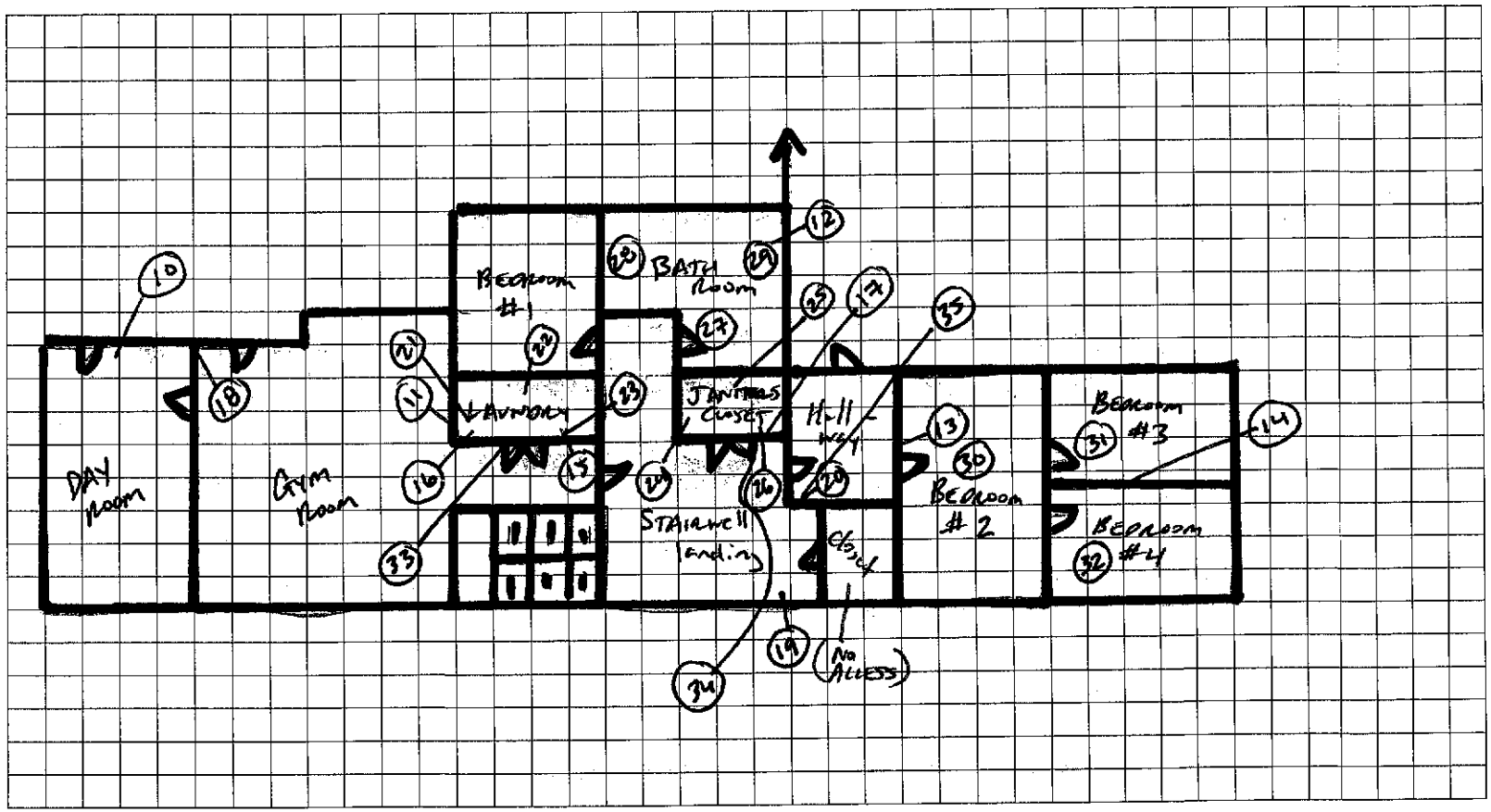
TRUST Environmental Solutions

ENVIRONMENTAL INDOOR AIR QUALITY TESTING
Tel (805) 72 TRUST | www.TRUSTenv.com

2514120

SITE DIAGRAM

Project Name: FIRE STATION #1 Project Address: 2061 3rd STREET, LA VERNE Project Assignment #: 14148-4134



Received by: Audrey Aguirre

7-1-25 5:10

TRUST Environmental Solutions

ENVIRONMENTAL | INDOOR AIR QUALITY TESTING
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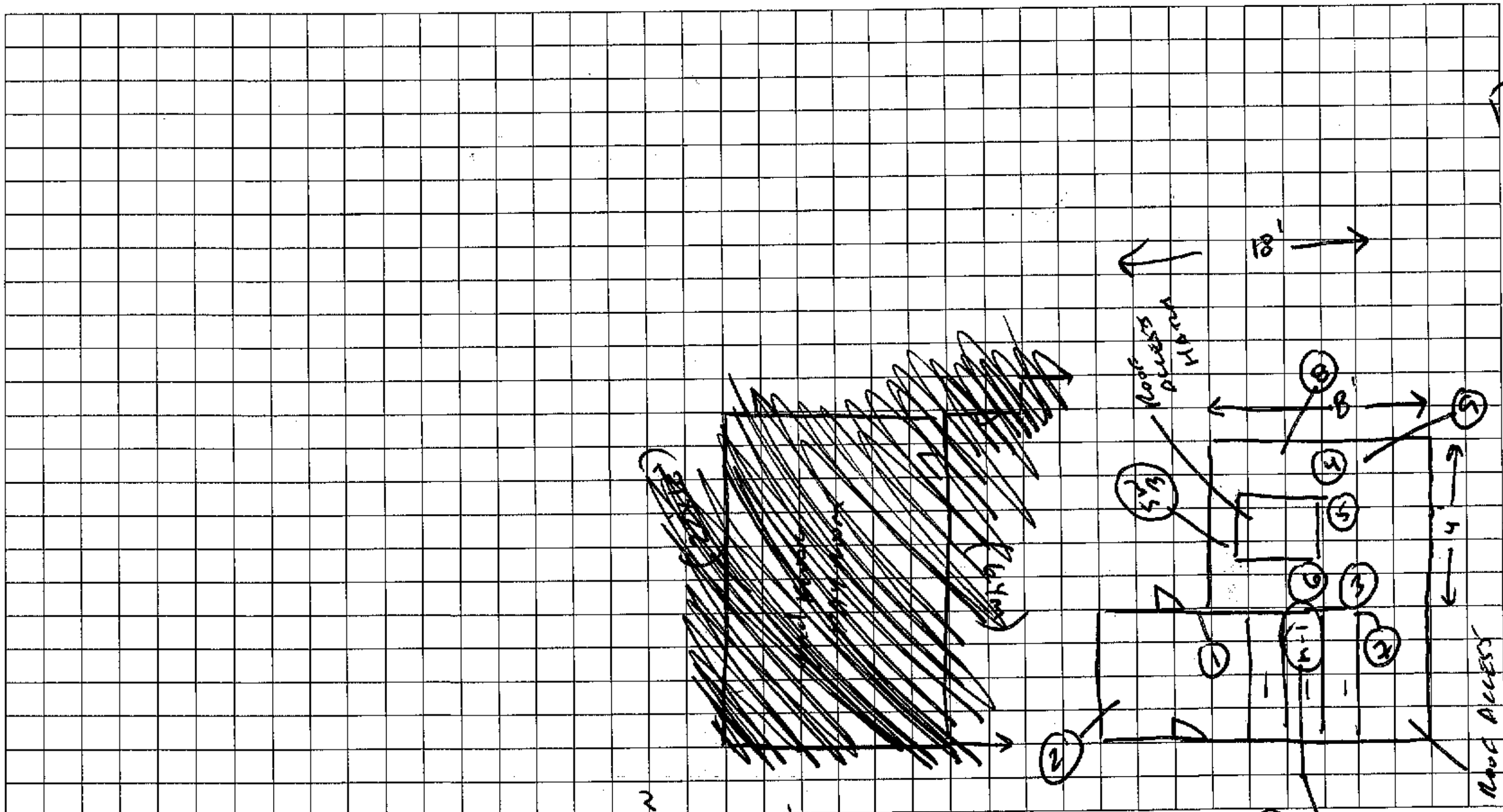
2514120

SITE DIAGRAM

Project Name: Fire STATION #1 Project Address: 2061 3rd STREET LA VERNE CA 91750 Project Assignment #: 14148-4134

ASB: 1st fire conference 2nd room. Fire station & Roof access stairwell

mold: Roof access stairwell



*SANDBAGS BROUGHT DOWN From roof wet, Drips on floor

{54.8% 70.7oF}

Collin Purdy Access

Received by: Audrey Aguino
7.1.25 5:10

APPENDIX C – CERTIFICATIONS

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
	Lead Sampling Technician	LRC-00006988	7/24/2025

Ricardo Osorio

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD

State of California
Division of Occupational Safety and Health

Certified Site Surveillance Technician

Mitchell A Martinez

Name

Certification No. **13-5045**

Expires on **07/17/25**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
 **Mitchell Martinez**	Lead Sampling Technician	LRC-00006761	10/2/2025

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD

State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant

Victor H Ruiz

Name

Certification No. 15-5589

Expires on 02/17/2026

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq of the Business and Professions Code.

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
 Victor Ruiz	Lead Inspector/Assessor	LRC-00011686	9/1/2025

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD