



**PACIFIC GROVE UNIFIED SCHOOL DISTRICT**

**PROJECT MANUAL**

**PROJECT NO. MD-041**

**ROBERT H. DOWN ELEMENTARY FIRE ALARM UPGRADES**

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Division 00      PROCUREMENT & CONTRACTING REQUIREMENTS

00 11 16                      NOTICE TO BIDDERS

**CALL FOR BIDS**

**Bid Number: MD-041**

**Title: Robert H. Down Elementary Fire Alarm Upgrade.**

The Pacific Grove Unified School District is requesting bids for: **Robert H. Down Elementary Fire Alarm Upgrade**

Call for Bids (CFB) must be received prior to 11:00 AM., on April 9, 2026. CFB's must be submitted in a sealed envelope, marked with the Name and Address of the bidder and the **Bid Number** and **Project Title**, and returned to the Pacific Grove Unified School District, District Office at 435 Hillcrest Ave, Pacific Grove, CA 93950.

Bids received later than the designated time and specified date will be returned to the bidder unopened. Emails or Facsimile (FAX) copies of the proposal will not be accepted. The District reserves the right to accept or reject any or all proposals or any combination thereof and to waive any informality in the bidding process. Bids will be opened at the District Office at 11:15AM on 4/9/2026.

There will be a mandatory site visit on March 26, 2026, from 2:30PM to 3:30PM. Bidders should meet at the front of the school, located at 485 Pine Ave, Pacific Grove, CA 93950

Copies of the Call for Bids (CFB) documents may be obtained from **Pacific Grove Unified School District, Maintenance, Operations, & Transportation Depart 435 Hillcrest Ave, Pacific Grove, CA 93950**, or at <https://www.pgusd.org/Parents--Community/Facilities/BID-OPPORTUNITIES/index.html>

Bid Questions: **Email to:** [facilities@pgusd.org](mailto:facilities@pgusd.org)

## INSTRUCTIONS FOR BIDDERS

BIDS/PROPOSALS- To receive consideration, Bids/Proposals shall be made in accordance with the following terms:

Contractors shall follow the instructions contained within this document. All documents and information requested in this document must be completed using the forms supplied in the Call for Bids except where noted in the instructions.

Pacific Grove Unified School District (“District”) will evaluate information submitted by the apparent low Bidder and, if incomplete or unsatisfactory to the District, Bidder’s bid may be rejected at the sole discretion of the District.

1. The District will receive sealed bids from bidders as stipulated in the Notice to Bidders.
  - a. All bids must be sealed in an envelope, marked with the name and address of the Bidder, name of the Project, the Project Number and/or bid number, and time of bid opening.
  - b. Bids must be submitted to the District Office, 435 Hillcrest Ave, Pacific Grove, California 93950. All bids shall be on the forms provided by the District and must be received by date and time shown in the Notice to Bidders. *If the bidder hand delivers the Bid, it is the Bidders responsibility to ensure that the office stamps the date and writes the time received on the envelope.*
  - c. Bids must contain all documents as required herein.
  - d. Bidders must submit Bids on the forms provided by the District included in the Bid package. Bids not submitted on the District's required forms shall be deemed nonresponsive and shall not be considered. When additional sheets are necessary, they are to be supplied with the required forms and NOT in lieu of.
  - e. Bid Forms shall not be modified. Bidders shall NOT submit forms that have been reformatted or retyped. Bidder shall NOT make additions or deletions to forms. The District reserves the right to reject any bid containing erasures, deletions, or illegible contents.
  - f. Bidders are advised that on the date that bids are opened, telephones will not be available at the District Office for use by bidders or their representatives.

DEFINITIONS – For the purposes of this document, the following definitions shall apply:

ADA: The Americans with Disabilities Act

BIDDER: Party submitting a bid for consideration by the District.

BICSI: Building Industry Consulting Service International

CBC: California Building Code, latest version.

BID: For the purpose of this document the terms *proposal* and *bid* are synonymous, meaning to offer to provide and service(s) or product(s) at a specified fee.

CONTRACT: For the purpose of this document the terms *contract*, *agreement*, and *purchase order* are synonymous, meaning a written agreement intended to be enforceable by law.

**CONTRACTOR:** The term Contractor refers to and indicates the party or parties contracting to perform the work to be done in pursuance of this contract and specifications.

**DISTRICT:** The Pacific Unified School District, Located in the City of Pacific Grove, CA.

**DSA:** The State of California Division of State Architect.

**EIA:** Electronics Industries Alliance

**NECA:** National Electrical Contractors Association

**NFPA:** National Fire Protection Association

**PLANS:** The project plans referred to herein.

**SPECIFICATIONS:** This document in its entirety.

**TDMM:** Telecommunications Distribution Methods Manual available from BICSI.

**TIA:** Telecommunication Industry Association

**THE BID** – All items on the forms should be stated in figures, and signatures of all individuals must be in long hand. The completed forms shall be without interlineations, alterations, or erasures. Unsigned bids will not be accepted.

**FACSIMILE/EMAIL** – Facsimile copies or Emails of bids will not be accepted.

**RESPONSIBLE BIDDER** - Responsible bidder as it pertains to this contract shall be as follows:

1. **Standards of Responsibility:** The District may reject bids on the basis of non-responsibility. A responsible bidder is one that has the capacity in all respects to perform fully the contract requirements, and the integrity and reliability which will assure good faith performance of the contract. Factors to be considered in determining whether the standard of responsibility has been met include whether a bidder has:
  - a. The appropriate financial, material, equipment, facility, capacity (adequate workforce to complete the job in a timely fashion) and personnel resources, including all required certifications, licenses, and expertise necessary to indicate its capacity to meet all contractual requirements, including the following specific requirements:
    - i. Adequate workforce to meet multiple critical work schedules at once;
    - ii. Ability to start projects on the commencement dates set forth by the District and satisfactorily complete them within the District's stated time limits.
  - b. A satisfactory record of performance, including but not limited to any prior work performed by bidder for the District or other agency;
  - c. Evidence of bidder's ability to provide the required bonding and insurance capacity. Apparent low bidder with cash or cashier's check as bid bond is required to submit a pre-qualification letter from an acceptable surety or cashier's check as performance bond within fourteen (14) calendar days of the bid opening;
  - d. A satisfactory record of integrity, diligence, and professionalism in the specific contract work;
  - e. The legal qualifications to contract with the District; and
  - f. Supplied all information requested by the District in connection with the inquiry concerning responsibility.

**NON-COLLUSION-** Bidders shall submit the Non-Collusion Declaration with their Bid. Bids submitted without the Non-Collusion Declaration shall be deemed non-responsive and will not be considered.

**CONTRACTOR QUALIFICATION-** All contractors must submit with their Bids a Contractor Qualification Information Form. This form includes information necessary to demonstrate to the District that the Contractor is duly qualified to perform the work for which they are bidding.

**SUBCONTRACTORS-** Bidders must submit with the Bid the Designated Subcontractors List for those subcontractors who will perform any portion of the Project, (“Subcontractor”) including labor, rendering of service, or specially fabricating and installing a portion of the Work or improvement according to detailed drawings and/or specifications contained in the Call For Bids, in excess of one half of one percent (0.5%) of the total Bid. Failure to submit this list when required by law shall result in bid being deemed nonresponsive and the bid will not be considered. After bids are accepted no Subcontractor substitutions can be made.

All of the listed subcontractors are required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code.

1. An inadvertent error in listing the California contractor license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the correct contractor’s license number is submitted to the DISTRICT within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.
2. An inadvertent error listing an unregistered subcontractor shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:
  - a. The subcontractor is registered prior to the bid opening.
  - b. The subcontractor is registered and has paid the penalty registration fee within 24 hours after the bid opening.
  - c. The subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.

**SITE INSPECTION-** When a mandatory pre-bid conference and/or site visit (“Site Visit”) is required as referenced in the Notice to Bidders, then Bidders must submit the Site Visit Certification with their Bid. During site visits or pre-bid conferences no questions will be answered or documented. All Bid Questions resulting from a site visit and/or pre-bid conference must be submitted in writing to The Maintenance, Operations & Transportation Department, at [facilities@pgusd.org](mailto:facilities@pgusd.org). All bid questions must be received 72 hours prior to the bid close to allow sufficient time for the District to answer questions. The bid due date may be extended at the discretion of the District to allow sufficient time to answer bid questions when necessary.

**INTERPRETATION OF SPECIFICATIONS-** Should a Bidder be in doubt as to the true meaning of any item in the Specifications or should Bidder discover items containing discrepancies or omissions, the District shall be immediately notified. All requests for interpretations must be submitted ninety-six (96) hours before bid opening. All questions must be directed to the Maintenance, Operations and Transportation department by emailing [facilities@pgusd.org](mailto:facilities@pgusd.org). The project name and number must be referenced in all communications.

**ADDENDA-** The District will transmit to all prospective Bidders of record such Addenda as District in its discretion when necessary in response to questions arising at the site visit and/or pre-bid conference. Oral statements shall not be relied upon and will not be binding or legally effective. Addenda issued by the District, if any, shall constitute the sole and exclusive record and statement of the results of bid questions. Such addenda are to be considered as part of the contract documents. No addenda can be issued less than forty-eight (48) hours before bid opening without an accompanying bid time extension. The District reserves the right to extending the bid period. Bidders must acknowledge all addenda if any on the Acknowledgement

of Addenda Form and submit the form with their Bid. When Addenda are issued, Bids submitted without the Acknowledgement of Addenda Form shall be deemed non-responsive and will not be considered.

**UNBALANCED BID** - Bids which are unbalanced may be rejected. For the purposes of this section, an unbalanced bid is a bid that has unit prices based on nominal prices for some items of work and enhanced unit prices for other items of work, and the amount and manner in which the unit prices are distributed is not reflective of the true cost to perform the work. Any unbalanced bid may be rejected by the District whether the result of the unbalanced bid increases the cost of the project to the District or not.

**WITHDRAWAL OF BID** – Bid proposals may be withdrawn by the bidders prior to the time fixed for the opening of bids. However, No Bidder may withdraw their bid for a period of **ninety (90) days** from the date of opening of the bids for the purpose of reviewing the bids and investigating the qualifications of Bidders, prior to awarding of the contract. A successful bidder shall not be relieved of the bid submitted without the District’s consent or bidder’s recourse to Public Contract Code Sections 5100 et. seq.

**BID NEGOTIATIONS** – A bid response to any specific item of this bid with terms such as “negotiable”, “will negotiate” or of similar intent, will be considered as non-responsive to the specific item.

**BID EXCEPTIONS** – All exceptions which are taken in response to this bid must be stated clearly. The taking of bid exceptions or providing false, incomplete, or unresponsive statements may result in the disqualification of the bid. Allowance of exceptions will be determined by the governing board whose decisions shall be final. Any bid exceptions or additional conditions requested after bid closure, which are not detailed within the bid response, may result in disqualification of the bid. No oral or telegraphic modification of any bid submitted will be considered.

**BID REJECTION or ACCEPTANCE**- The District reserves the right to reject any or all bids as the best interests of the District may dictate and, to the extent permitted by law, waive any irregularity in any bid. If there is any reason for believing that collusion exists among the bidders, the District may reject any or all bids. The District may purchase an individual item or combination of items, whichever is in the best interest of the District, provided also that bidder(s) may specify that the District’s acceptance of one item shall be contingent upon the District’s acceptance of one or more additional items submitted in the same bid. Bids shall remain open and valid and subject to acceptance for ninety (90) calendar days after the bid opening.

**BID PROTEST** - Any Bid protest by any Bidder regarding any other Bid must be submitted in writing to the District, before 5:00 p.m. of the FIFTH (5TH) business day following Bid opening.

1. Only a Bidder who has submitted a Bid, and who could be awarded the Contract if the bid protest is upheld, is eligible to submit a Bid protest. Subcontractors are not eligible to submit Bid protests. A Bidder may not rely on the bid protest submitted by another Bidder.
2. A Bid protest must contain a complete statement of any and all bases for the protest and all supporting documentation. Materials submitted after the Bid protest deadline will not be considered.
3. The protest must refer to the specific portions of all documents that form the basis for the protest.

- a. Without limitation to any other basis for protest, an inadvertent error in listing the California contractor's license number on the Designated Subcontractors List shall not be grounds for filing a Bid protest or grounds for considering the Bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.
  - b. Without limitation to any other basis for protest, an inadvertent error listing an unregistered subcontractor shall not be grounds for filing a Bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:
    - i. The Subcontractor is registered prior to the Bid opening.
    - ii. The Subcontractor is registered and has paid the penalty registration fee within 24 hours after the Bid opening.
    - iii. The subcontractor is replaced by another registered Subcontractor pursuant to Public Contract Code section 4107.
4. The protest must include the name, address and telephone number of the person representing the protesting party.
  5. The party filing the protest must concurrently transmit a copy of the protest and any attached documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other Bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.
  6. The procedure and time limits set forth in this paragraph are mandatory and are each Bidder's sole and exclusive remedy in the event of Bid protest. Failure to comply with these procedures shall constitute a waiver of any right to further pursue the Bid protest, including filing a Government Code Claim or legal proceedings.

## SCOPE OF WORK

**ACKNOWLEDGMENT OF CONDITIONS-** By submitting a Bid, bidders are acknowledging that they have fully examined the bid requirements, clearly understand the scope of work, logistical requirements and have had any bid questions sufficiently answered. Bidders must complete the tasks listed below as a condition of bidding. Submission of a Bid shall constitute the Bidder's express representation to District that Bidder has fully completed the following:

- a. Bidder has visited the site, if required, and has examined to the extent necessary to understand the Work, the project and work sites, location, and conditions, including as-built conditions, and all local conditions. Understands and has knowledge of applicable federal, state and local laws, and regulations that in any manner may affect site mobilization, cost, progress, performance, or timely completion of the Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by bidder and safety precautions and programs incident thereto;
- b. Bidder has conducted or obtained and has understood all examinations, investigations, explorations, tests, reports, and studies that pertain to the subsurface conditions, as-built conditions, underground utilities, and all other physical conditions at or adjoining the Work Site or otherwise that may affect the site mobilization, cost, progress, performance, or timely completion of the Work, as Bidder considers necessary for the performance of the Work at the Contract Sum, within the Contract Time, and in accordance with the other

terms and conditions of Contract Documents, including specifically the provisions of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies, or similar information or data are or will be required by the Bidder for such purposes;

- c. The Bidder has full knowledge of the results of all such observations, examinations, investigations, explorations, tests, reports, and studies as related to the terms and conditions of the Contract Documents;
- d. The Bidder has given the District prompt written notice of all perceived conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Contract Documents and the actual conditions, and the written resolution(s) thereof by the District is/are acceptable to the Bidder;
- e. Bidder has made a complete disclosure in writing to the District of all facts bearing upon any possible interest, direct or indirect, that the Bidder believes any representative of the District or other officer, or employee of the District presently has or will have in this Contract or in the performance thereof or in any portion of the profits thereof;
- f. The Bidder must, prior to bidding, perform the work, investigations, research, and analysis required by this document and that Bidder represented in its Bid Form and Proposal and the Contract that it performed prior to bidding. The Contractor under this Contract is charged with all information and knowledge that a reasonable bidder would ascertain from having performed this required work, investigation, research, and analysis. Bid prices must include entire cost of all work “incidental” to completion of the Work.
- g. Conditions Shown on the Contract Documents: Information as to underground conditions, as-built conditions, or other conditions or obstructions, indicated in the Contract Documents, e.g., on Drawings or in Specifications, has been obtained with reasonable care, and has been recorded in good faith. However, the District only warrants, and the Contractor may only rely, on the accuracy of limited types of information.
  - i. As to above-ground conditions or as-built conditions shown or indicated in the Contract Documents, there is no warranty, express or implied, or any representation express or implied, that such information is correctly shown or indicated. This information is verifiable by independent investigation and the Contractor is required to make such verification as a condition to bidding. In submitting its Bid, Contractor shall rely on the results of its own independent investigation. In submitting its Bid, Contractor shall not rely on District-supplied information regarding above-ground conditions or as built conditions.
  - ii. As to any subsurface condition shown or indicated in the Contract Documents, Contractor may rely only upon the general accuracy of actual reported depths, actual reported character of materials, actual reported soil types, actual reported water conditions, or actual obstructions shown or indicated. The District is not responsible for the completeness of such information for bidding or construction; nor is the District responsible in any way for any conclusions or opinions that the Contractor has drawn from such information; nor is the District responsible for subsurface conditions that are not specifically shown (for example, District is not responsible for soil conditions in areas adjoining areas where a subsurface condition is shown).
- h. Conditions Shown in Reports and Drawings Supplied for Informational Purposes: Reference is made to the document entitled Geotechnical Data, and the document entitled Existing Conditions, for identification of:

- i. Subsurface Conditions: Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by Architect in preparing the Contract Documents; and
- ii. Physical Conditions: Those drawings of physical conditions in or relating to existing surface or subsurface structures at or adjoining to the Site that has been utilized by Architect in preparing the Contract Documents.
- iii. These reports and drawings are not Contract Documents and, except for any “technical” data regarding subsurface conditions specifically identified in Geotechnical Data and Existing Conditions, and underground facilities data, the Contractor may not in any manner rely on the information in these reports and drawings. Subject to the foregoing, the Contractor must make its own independent investigation of all conditions affecting the Work and must not rely solely on information provided by District.

***END OF DOCUMENT***

00 31 13.16 PAYMENT BOND



**PAYMENT BOND**

CONTRACTOR'S LABOR & MATERIAL BOND

(100% OF CONTRACT PRICE)

**(Note: Contractor must use this form, NOT a surety company form.)**

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Pacific Grove Unified School District, ("PGUSD") and ("Principal"): \_\_\_\_\_ have entered into a contract for the furnishing of all materials and labor, services, and transportation, necessary, convenient, and proper to perform the following project:

Project Title: \_\_\_\_\_

("Project" or "Contract") which Contract dated \_\_\_\_\_, 20\_\_\_\_, and all of the Contract

Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

WHEREAS, pursuant to law and the Contract, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by which the Contract is awarded in an amount equal to one hundred percent (100%) of the Contract price, to secure the claims to which reference is made in sections 9000 through 9510 and 9550 through 9566 of the Civil Code, and

division 2, part 7, of the Labor Code.

NOW, THEREFORE, the Principal and \_\_\_\_\_

("Surety")

are held and firmly bound unto all laborers, material men, and other persons referred to in said statutes in the sum of \_\_\_\_\_

Dollars (\$ \_\_\_\_\_), lawful money of the United States, being a sum not less than the total amount payable by the terms of Contract, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, by these presents.

The condition of this obligation is that if the Principal or any of its subcontractors, or their heirs, executors, administrators, successors, or assigns of any, all, or either of them shall fail to pay for any labor, materials, provisions, or other supplies, 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 required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal or any of his or its subcontractors of any tier under Section 13020 of the Unemployment Insurance Code with respect to such work or labor, that the Surety will pay the same in an amount not exceeding the amount herein above set forth, and also in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under section 9100 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void; otherwise, it shall be and remain in full force and affect.

And the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of Contract or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Principal: \_\_\_\_\_ By: \_\_\_\_\_

Surety: \_\_\_\_\_ By: \_\_\_\_\_

Name of California Agent of Surety: \_\_\_\_\_

Address of California Agent of Surety: \_\_\_\_\_

Telephone of California Agent of Surety: \_\_\_\_\_

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

00 41 26

## BID FORM AND PROPOSAL

To: Governing Board of the Pacific Grove Unified School District (“District” or “Owner”)

From: (Proper Name of Bidder) \_\_\_\_\_

The undersigned declares that Bidder has read and understands the Contract Documents, including, without limitation, the Notice to Bidders and the Instructions to Bidders, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications of the Project number MD-041 for the following project known as: Robert H. Down Elementary School Fire Alarm System Upgrade (“Project” or “Contract”) and will accept in full payment for that Work the following total lump sum amount, all taxes included:

Bid Form

<b>A. Fire Alarm Upgrades</b>		\$
<b>B. District Allowance for Unforeseen Conditions</b>	Seventy-Five Thousand Dollars and no cents	\$75,000.00
<b>Total Base Bid (item A +B)</b>		\$

***END OF DOCUMENT***

00 43 13

BID BOND



BID BOND

(Note: If Bidder is providing a bid bond as its bid security, Bidder must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

That the undersigned, \_\_\_\_\_, as Principal (“Principal”),

and \_\_\_\_\_, as Surety (“Surety”), a corporation organized and existing under and by virtue of the laws of the State of California and authorized to do business as a surety in the State of California, are held and firmly bound unto the Pacific Grove Unified School District (“DISTRICT”) of Monterey County, State of California, as Obligee, in an amount equal to ten percent (10%) of the Base Bid plus alternates, 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, and each of us, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted a bid to the DISTRICT for all Work specifically described in the accompanying bid for the following project: \_\_\_\_\_ (“Project” or “Contract”).

NOW, THEREFORE, if the Principal is awarded the Contract and, within the time and manner required under the Contract Documents, after the prescribed forms are presented to Principal for signature, enters into a written contract, in the prescribed form in accordance with the bid, and files two bonds, one guaranteeing faithful performance and the other guaranteeing payment for labor and materials as required by law, and meets all other conditions to the Contract between the Principal and the Obligee becoming effective, or if the Principal shall fully reimburse and save harmless the Obligee from any damage sustained by the Obligee through failure of the Principal to enter into the written contract and to file the required performance and labor and material bonds, and to meet all other conditions to the Contract between the Principal and the Obligee becoming effective, then this obligation shall be null and void; otherwise, it shall be and remain in full force and effect. The full payment of the sum stated above shall be due immediately if Principal fails to execute the Contract within seven (7) days of the date of the DISTRICT's Notice of Award to Principal.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or the call for bids, or to the work to be performed thereunder, or the specifications accompanying the same, shall in any way affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or the call for bids, or to the work, or to the specifications.

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 attorneys' fee to be fixed by the Court.

If the DISTRICT awards the bid, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Principal

\_\_\_\_\_  
By

\_\_\_\_\_  
Surety

\_\_\_\_\_  
By

\_\_\_\_\_  
Name of California Agent of Surety

\_\_\_\_\_  
Address of California Agent of Surety

\_\_\_\_\_  
Telephone Number of California Agent of Surety

**Bidder must attach Power of Attorney and Certificate of Authority for Surety and a Notarial Acknowledgment for all Surety's signatures. The California Department of Insurance must authorize the Surety to be an admitted Surety Insurer.**

***END OF DOCUMENT***

00 43 36

# REGISTERED SUBCONTRACTORS LIST



## REGISTERED SUBCONTRACTORS LIST

**(LABOR CODE SECTION 1771.1)**

**PROJECT: Pacific Grove Unified School District – \_\_\_\_\_**

Date Submitted (for Updates): \_\_\_\_\_

Contractor acknowledges and agrees that it must clearly set forth below the name and Department of Industrial Relations (DIR) registration number of each subcontractor for all tiers who will perform work or labor or render service to Contractor or its subcontractors in or about the construction of the Work at least two (2) weeks before the subcontractor is scheduled to perform work. This document is to be updated as all tiers of subcontractors are identified.

Contractor acknowledges and agrees that, if Contractor fails to list as to any subcontractor of any tier who performs any portion of Work, the Contract is subject to cancellation and the Contractor will be subjected to penalty under applicable law.

If further space is required for the list of proposed subcontractors, attach additional copies of page 2 showing the required information, as indicated below.

1. Subcontractor Name: \_\_\_\_\_

DIR Registration #: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

2. Subcontractor Name: \_\_\_\_\_

DIR Registration #: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

3. Subcontractor Name: \_\_\_\_\_

DIR Registration #: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

4. Subcontractor Name: \_\_\_\_\_

DIR Registration #: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

5. Subcontractor Name: \_\_\_\_\_

DIR Registration #: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

6. Subcontractor Name: \_\_\_\_\_

DIR Registration #: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

7. Subcontractor Name: \_\_\_\_\_

DIR Registration #: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

8. Subcontractor Name: \_\_\_\_\_

DIR Registration #: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

***END OF DOCUMENT***

00 45 01

## SITE VISIT CERTIFICATION



### Site Visit Certification

**Bid Number:** \_\_\_\_\_

**Project Title:** \_\_\_\_\_

I hereby certify that I, \_\_\_\_\_

an employee of \_\_\_\_\_ (the Bidder)

has visited the site(s) associated with the project.

The bidder has acquainted themselves with the nature of the sites, geographical and exact location of the proposed works; the general conditions required for works execution; the neighboring buildings and other constraints that might affect the construction methods; the physical conditions specific to the construction sites; means of communication and transport; sources of construction materials and all conditions and circumstances which might influence the execution of the works as pertaining to the bid.

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***END OF DOCUMENT***

00 45 19

# NONCOLLUSION DECLARATION



## NONCOLLUSION DECLARATION

This Form Must be Submitted with Bid

The undersigned declares: I am the \_\_\_\_\_ of \_\_\_\_\_, the party making the foregoing bid.

The bid submitted 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 a sham bid. The bidder has not directly or indirectly colluded, agreed, or conspired 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 cost element or the bid including overhead and profit of the bid price, or of that of any other bidder. All statements contained in the bid are genuine. The bidder has not, directly, or indirectly, submitted their 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 a 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 this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ in

\_\_\_\_\_ [city], \_\_\_\_\_ County, California.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name and Title

**END OF DOCUMENT**

00 45 26

# WORKERS' COMPENSATION CERTIFICATION



## WORKERS' COMPENSATION CERTIFICATION

PROJECT TITLE: \_\_\_\_\_ CONTRACT/BID NO. \_\_\_\_\_

between the Pacific Grove Unified School District ("PGUSD") and \_\_\_\_\_ ("Contractor" or "Bidder").

Labor Code section 3700, in relevant part, provides:

Every employer except the State shall secure the payment of compensation in one or more of the following ways:

- a. By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this state; and/or
- b. By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his employees.

I am aware of the provisions of section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work of this Contract.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Company: \_\_\_\_\_

(In accordance with Labor Code sections 1860 and 1861, the above certificate must be signed and filed with the awarding body prior to performing any Work under this Contract.)

**END OF DOCUMENT**

00 45 32      CRIMINAL BACKGROUND INVESTIGATION  
FINGERPRINTING CERTIFICATION



CRIMINAL BACKGROUND INVESTIGATION  
FINGERPRINTING CERTIFICATION

PROJECT TITLE: \_\_\_\_\_ CONTRACT/BID NO. \_\_\_\_\_  
between the Pacific Grove Unified School District (“PGUSD”) and \_\_\_\_\_  
 (“Contractor” or “Bidder”).

The undersigned does hereby certify to the governing board of the PGUSD as follows:  
That I am a representative of the Contractor currently under contract with the PGUSD; that I am familiar  
with the facts herein certified; and that I am authorized and qualified to execute this certificate on behalf  
of Contractor.

Contractor certifies that it has taken at least one of the following actions with respect to the construction  
Project that is the subject of the Contract (check all that apply):

The Contractor is a sole proprietor and intends to comply with the fingerprinting requirements of  
Education Code section 45125.1(k) with respect to all Contractor’s employees who may have contact  
with PGUSD pupils in the course of providing services pursuant to the Contract, and hereby agrees to the  
PGUSD’s preparation and submission of fingerprints such that the California Department of Justice may  
determine that none of those employees has been convicted of a felony, as that term is defined in  
Education Code section 45122.1. No work shall commence until such a determination by DOJ has been  
made.

As an authorized PGUSD official, I am familiar with the facts herein certified, and am authorized to  
execute this certificate on behalf of the PGUSD and undertake to prepare and submit Contractor’s  
fingerprints as if he or she was an employee of the PGUSD.

PGUSD Representative’s Name and Title: \_\_\_\_\_

PGUSD Representative’s Signature: \_\_\_\_\_

Date: \_\_\_\_\_

The Contractor, who is not a sole proprietor, has complied with the fingerprinting requirements of  
Education Code section 45125.1 with respect to all Contractor’s employees and all of its Subcontractors’

employees who may have contact with PGUSD pupils in the course of providing services pursuant to the Contract, and the California Department of Justice has determined that none of those employees has been convicted of a felony, as that term is defined in Education Code section 45122.1. A complete and accurate list of Contractor's employees and of all of its subcontractors' employees who may come in contact with PGUSD pupils during the course and scope of the Contract is attached hereto; and/or

Pursuant to Education Code section 45125.2, Contractor has installed or will install, prior to commencement of Work, a physical barrier at the Work Site, that will limit contact between Contractor's employees and PGUSD pupils at all times; and/or

Pursuant to Education Code section 45125.2, Contractor certifies that all employees will be under the continual supervision of, and monitored by, an employee of the Contractor who the California Department of Justice has ascertained, or as described below, will ascertain, has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Contractor's and its subcontractors' employees is:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**NOTE:** If the Contractor is a sole proprietor, and elects the above option, Contractor must have the above-named employee's fingerprints prepared and submitted by the PGUSD, in accordance with Education Code section 45125.1(k). No work shall commence until such determination by DOJ has been made.

As an authorized PGUSD official, I am familiar with the facts herein certified, and am authorized to execute this certificate on behalf of the PGUSD and undertake to prepare and submit Contractor's fingerprints as if he or she was an employee of the PGUSD.

PGUSD Representative's Name and Title: \_\_\_\_\_

PGUSD Representative's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

*The Work on the Contract is either (i) at an unoccupied school site and no employee and/or subcontractor or supplier of any tier of the Contract shall come in contact with the PGUSD pupils or (ii) Contractor's employees or any subcontractor or supplier of any tier of the Contract will have only limited contact, if any, with PGUSD pupils and the PGUSD will take appropriate steps to protect the safety of any pupils that may come in contact with Consultant's employees, subcontractors or suppliers so that the fingerprinting and criminal background investigation requirements of Education Code section 45125.1 shall not apply to Contractor under the Contract.*

*As an authorized PGUSD official, I am familiar with the facts herein certified and am authorized to execute this certificate on behalf of the PGUSD.*

PGUSD Representative's Name and Title: \_\_\_\_\_

PGUSD Representative's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Contractor's responsibility for background clearance extends to all of its employees, Subcontractors, and employees of Subcontractors coming into contact with PGUSD pupils regardless of whether they are designated as employees or acting as independent contractors of the Contractor.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Company: \_\_\_\_\_

END OF DOCUMENT

00 45 46.01

# PREVAILING WAGE CERTIFICATION



## PREVAILING WAGE AND RELATED LABOR REQUIREMENTS CERTIFICATION

The Contract for Project Titled: \_\_\_\_\_ between the Pacific Grove Unified School District (“District”) and \_\_\_\_\_ (“Contractor” or “Bidder”).

I hereby certify that I will conform to the State of California Public Works Contract requirements regarding prevailing wages, benefits, on-site audits with 48-hours’ notice, payroll records, and apprentice and trainee employment requirements, for all Work on the above Project including, without limitation, labor compliance monitoring and enforcement by the Department of Industrial Relations.

Date: \_\_\_\_\_ Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT

00 45 46.03

# DRUG & ALCOHOL CERTIFICATION



## DRUG AND ALCOHOL-FREE SCHOOLS CERTIFICATION PROJECT

The Contract for Project Titled: \_\_\_\_\_ between the Pacific Grove Unified School District (“District”) and \_\_\_\_\_ (“Contractor” or “Bidder”).

Pursuant to, without limitation, District Board policies, all District sites, including the Project site, are drug and alcohol-free schools. Possession, use, or sale of drugs and alcohol is prohibited at any time in district-owned or leased buildings, on district property, and in district vehicles unless otherwise permitted by law.

I acknowledge that I am aware of the District’s policy number 3513.4 regarding drug and alcohol-free schools, including the Project site, and hereby certify that I will adhere to the requirements of that policy and not permit any of my firm’s employees, agents, subcontractors, or my firm’s subcontractors’ employees or agents, to possess, use or sell:

1. Any substance which may not lawfully be possessed, used, or sold in California
2. Cannabis or cannabis products (Health and Safety Code 11362.3; 21 USC 812, 844)
3. Alcoholic beverages, unless approved by the Superintendent or designee for limited purposes specified in Business and Professions Code 25608

Date: \_\_\_\_\_ Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

***END OF DOCUMENT***

00 45 46.04

# TABACCO FREE CERTIFICATION



## TOBACCO-FREE ENVIRONMENT CERTIFICATION

The Contract for Project Titled: \_\_\_\_\_ between the Pacific Grove Unified School District (“District”) and \_\_\_\_\_ (“Contractor” or “Bidder”).

This Tobacco-Free Environment Certification form is required from the successful Bidder.

Pursuant to, without limitation, 20 U.S.C. section 6083, Labor Code section 6400 et seq., Health & Safety Code section 104350 et seq., Business and Professions Code section 22950 et seq., and Monterey County Board of Education policies, all DISTRICT sites, including the Project site, are tobacco-free environments. Smoking and the use of tobacco products by all persons is prohibited on or in DISTRICT property. DISTRICT property includes school buildings, school grounds, school-owned vehicles and vehicles owned by others while on DISTRICT property. The prohibition on smoking includes the use of any electronic smoking device that creates an aerosol or vapor, in any manner or in any form, and the use of any oral smoking device for the purpose of circumventing the prohibition of tobacco smoking. Further, Health & Safety Code section 11362.3 prohibits the smoking or use of cannabis or cannabis products in any place where smoking tobacco is prohibited.

I acknowledge that I am aware of the DISTRICT’s policy regarding tobacco-free environments at DISTRICT sites, including the Project site and hereby certify that I will adhere to the requirements of that policy and not permit any of my firm’s employees, agents, subcontractors, or my firm’s subcontractors’ employees or agents, to use tobacco and/or smoke on the Project site.

Date: \_\_\_\_\_ Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

***END OF DOCUMENT***

00 45 46.07 HAZARDOUS MATERIALS CERTIFICATION



**HAZARDOUS MATERIALS CERTIFICATION**

The Contract for Project Titled: \_\_\_\_\_ between the Pacific Grove Unified School District (“District”) and \_\_\_\_\_ (“Contractor” or “Bidder”).

Contractor hereby certifies that no asbestos, or asbestos-containing materials, polychlorinated biphenyl (PCB), or any material listed by the federal or state Environmental Protection Agency or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules, or regulations, (“New Hazardous Material”), shall be furnished, installed, or incorporated in any way into the Project or in any tools, devices, clothing, or equipment used to affect any portion of Contractor's work on the Project for DISTRICT.

Contractor further certifies that it has instructed its employees with respect to the above-mentioned standards, hazards, risks, and liabilities.

Asbestos and/or asbestos-containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Any or all material containing greater than one-tenth of one percent (0.1%) asbestos shall be defined as asbestos-containing material.

Any disputes involving the question of whether or not material is New Hazardous Material shall be settled by electron microscopy or other appropriate and recognized testing procedure, at the DISTRICT’s determination. The costs of any such tests shall be paid by Contractor if the material is found to be New Hazardous Material.

All Work or materials found to be New Hazardous Material or Work or material installed with equipment containing New Hazardous Material will be immediately rejected and this Work will be removed at Contractor's expense at no additional cost to the DISTRICT.

Contractor has read and understood the document titled Hazardous Materials Procedures & Requirements, and shall comply with all the provisions outlined therein.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Company: \_\_\_\_\_

**END OF DOCUMENT**

00 45 46.08 LEAD-BASED MATERIALS CERTIFICATION



# LEAD-BASED MATERIALS CERTIFICATION

PROJECT TITLE: \_\_\_\_\_ CONTRACT/BID NO. \_\_\_\_\_

between the Pacific Grove Unified School District ("District") and \_\_\_\_\_  
("Contractor" or "Bidder").

This certification provides notice to the Contractor that:

1. Contractor's work may disturb lead-containing building materials.
2. Contractor shall notify the District if any work may result in the disturbance of lead containing building materials.
3. Contractor shall comply with the Renovation, Repair and Painting Rule, if lead-based paint is disturbed in a six-square-foot or greater area indoors or a 20-square-foot or greater area outdoors.

## 1. Lead as a Health Hazard

Lead poisoning is recognized as a serious environmental health hazard facing children today. Even at low levels of exposure, much lower than previously believed, lead can impair the development of a child's central nervous system, causing learning disabilities, and leading to serious behavioral problems. Lead enters the environment as tiny lead particles and lead dust disburse when paint chips, chinks, peels, wears away over time or is otherwise disturbed. Ingestion of lead dust is the most common pathway of childhood poisoning: lead dust gets on a child's hands and toys and then into a child's mouth through common hand-to-mouth activity. Exposure may result from construction or remodeling activities that disturb lead paint, from ordinary wear and tear of windows and doors, or from friction on other surfaces. Ordinary construction and renovation or repainting activities carried out without lead-safe work practices can disturb lead-based paint and create significant hazards. Improper removal practices, such as dry scraping, sanding, or water blasting painted surfaces, are likely to generate high volumes of lead dust.

Because the Contractor and its employees will be providing services for the District, and because the Contractor's work may disturb lead-containing building materials, CONTRACTOR IS HEREBY NOTIFIED of the potential presence of lead-containing materials located within certain buildings utilized by the District. All school buildings built prior to 1978 are presumed to contain some lead-based paint until sampling proves otherwise.

## 2. Overview of California Law

Education Code section 32240 et seq. is known as the Lead-Safe Schools Protection Act. Under this act, the Department of Health Services is to conduct a sample survey of schools in the State of California for the purpose of developing risk factors to predict lead contamination in public schools. (Ed. Code, § 32241.)

Any school that undertakes any action to abate existing risk factors for lead is required to utilize trained and state-certified contractors, inspectors, and workers. (Ed. Code, § 32243, subd. (b).) Moreover, lead based paint, lead plumbing, and solders, or other potential sources of lead contamination, shall not be utilized in the construction of any new school facility. (Ed. Code, § 32244.)

Both the Federal Occupational Safety and Health Administration ("Fed/OSHA") and the California

Division of Occupational Safety and Health ("Cal/OSHA") have implemented safety orders applicable to all construction work where a contractor's employee may be occupationally exposed to lead. The OSHA Regulations apply to all construction work where a contractor's employee may be occupationally exposed to lead. The OSHA Regulations contain specific and detailed requirements imposed on contractors subject to those regulations. The OSHA Regulations define construction work as work for construction, alteration, and/or repair, including painting and decorating. Regulated work includes, but is not limited to, the following:

- b. Demolition or salvage of structures where lead or materials containing lead are present;
- b. Removal or encapsulation of materials containing lead;
- b. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;
- b. Installation of products containing lead;
- b. Lead contamination/emergency cleanup;
- b. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- b. Maintenance operations associated with the construction activities described in the subsection.

Because it is assumed by the DISTRICT that all painted surfaces (interior as well as exterior) within the DISTRICT contain some level of lead, it is imperative that the Contractor, its workers and subcontractors fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials (including title 8, California Code of Regulations, section 1532.1).

Contractor shall notify the DISTRICT if any Work may result in the disturbance of lead-containing building materials. Any and all Work that may result in the disturbance of lead-containing building materials shall be coordinated through the DISTRICT. A signed copy of this Certification shall be on file prior to beginning Work on the Project, along with all current insurance certificates.

3. Renovation, Repair and Painting Rule, Section 402(c)(3) of the Toxic Substances Control Act  
The EPA requires lead safe work practices to reduce exposure to lead hazards created by renovation, repair and painting activities that disturb lead-based paint. Pursuant to the Renovation, Repair and Painting Rule (RRP), renovations in homes, childcare facilities, and schools built prior to 1978 must be conducted by certified renovations firms, using renovators with training by a EPA-accredited training provider, and fully and adequately complying with all applicable laws, rules and regulations governing lead-based materials, including those rules and regulations appearing within title 40 of the Code of Federal Regulations as part 745 (40 CFR 745).

The RRP requirements apply to all contractors who disturb lead-based paint in a six-square-foot or greater area indoors or a 20-square-foot or greater area outdoors. If a DPH-certified inspector or risk assessor determines that a home constructed before 1978 is lead-free, the federal certification is not required for anyone working on that particular building.

#### 4. Contractor's Liability

If the Contractor fails to comply with any applicable laws, rules, or regulations, and that failure results in a site or worker contamination, the Contractor will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify, and hold harmless the DISTRICT, pursuant to the indemnification provisions of the Contract, for all damages and other claims arising therefrom.

If lead disturbance is anticipated in the Work, only persons with appropriate accreditation, registrations, licenses, and training shall conduct this Work.

It shall be the responsibility of the Contractor to properly dispose of any and all waste products, including, but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Contractor to provide

the proper disposal of any hazardous waste by a certified hazardous waste hauler. This company shall be registered with the Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any school site within the DISTRICT. The Contractor shall provide the DISTRICT with any sample results prior to beginning Work, during the Work, and after the completion of the Work. The DISTRICT may request to examine, prior to the commencement of the Work, the lead training records of each employee of the Contractor.

THE CONTRACTOR HEREBY ACKNOWLEDGES, UNDER PENALTY OF PERJURY, THAT IT:

1. HAS RECEIVED NOTIFICATION OF POTENTIAL LEAD-BASED MATERIALS ON THE OWNER'S PROPERTY;
  
2. IS KNOWLEDGEABLE REGARDING AND WILL COMPLY WITH ALL APPLICABLE LAWS, RULES AND REGULATIONS GOVERNING WORK WITH, AND DISPOSAL, OF LEAD. THE UNDERSIGNED WARRANTS THAT HE/SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF AND BIND THE CONTRACTOR. THE DISTRICT MAY REQUIRE PROOF OF SUCH AUTHORITY.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Company: \_\_\_\_\_

***END OF DOCUMENT***

## 00 45 46.10 CRIMINAL BACKGROUND INVESTIGATION/FINGERPRINTING CERTIFICATION



# CRIMINAL BACKGROUND INVESTIGATION /FINGERPRINTING CERTIFICATION

The Contract for Project Titled: \_\_\_\_\_ between the Pacific Grove Unified School District (“District”) and \_\_\_\_\_ (“Contractor” or “Bidder”).

The undersigned does hereby certify to the governing board of the DISTRICT as follows:

That I am a representative of the Contractor currently under contract with the DISTRICT; that I am familiar with the facts herein certified; and that I am authorized and qualified to execute this certificate on behalf of Contractor.

Contractor certifies that it has taken at least one of the following actions with respect to the construction Project that is the subject of the Contract (check all that apply):

- The Contractor is a sole proprietor and intends to comply with the fingerprinting requirements of Education Code section 45125.1(k) with respect to all Contractor’s employees who may have contact with DISTRICT pupils in the course of providing services pursuant to the Contract, and hereby agrees to the DISTRICT’s preparation and submission of fingerprints such that the California Department of Justice may determine that none of those employees has been convicted of a felony, as that term is defined in Education Code section 45122.1. No work shall commence until such determination by DOJ has been made.

As an authorized DISTRICT official, I am familiar with the facts herein certified, and am authorized to execute this certificate on behalf of the DISTRICT and undertake to prepare and submit Contractor’s fingerprints as if he or she was an employee of the DISTRICT.

Date: \_\_\_\_\_

DISTRICT Representative’s Name and Title: \_\_\_\_\_

DISTRICT Representative’s Signature: \_\_\_\_\_

- The Contractor, who is not a sole proprietor, has complied with the fingerprinting requirements of Education Code section 45125.1 with respect to all Contractor’s employees and all of its Subcontractors’ employees who may have contact with DISTRICT pupils in the course of providing services pursuant to the Contract, and the California Department of Justice has determined that none of those employees has been convicted of a felony, as that term is defined in Education Code section 45122.1. A complete and accurate list of Contractor's employees and of all of its subcontractors' employees who may come in contact with DISTRICT pupils during the course and scope of the Contract is attached hereto; and/or
- Pursuant to Education Code section 45125.2, Contractor has installed or will install, prior to commencement of Work, a physical barrier at the Work Site, that will limit contact between Contractor's employees and DISTRICT pupils at all times; and/or
- Pursuant to Education Code section 45125.2, Contractor certifies that all employees will be under the continual supervision of, and monitored by, an employee of the Contractor who the California Department of Justice has ascertained, or as described below, will ascertain, has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Contractor's and its subcontractors' employees is:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**NOTE:** If the Contractor is a sole proprietor, and elects the above option, Contractor must have the above-named employee's fingerprints prepared and submitted by the DISTRICT, in accordance with Education Code section 45125.1(k). No work shall commence until such determination by DOJ has been made.

As an authorized DISTRICT official, I am familiar with the facts herein certified, and am authorized to execute this certificate on behalf of the DISTRICT and undertake to prepare and submit Contractor's fingerprints as if he or she was an employee of the DISTRICT.

Date: \_\_\_\_\_

DISTRICT Representative's Name and Title: \_\_\_\_\_

DISTRICT Representative's Signature: \_\_\_\_\_

- The Work on the Contract is either (i) at an unoccupied school site and no employee and/or subcontractor or supplier of any tier of the Contract shall come in contact with the DISTRICT pupils or (ii) Contractor's employees or any subcontractor or supplier of any tier of the Contract will have only limited contact, if any, with DISTRICT pupils and the DISTRICT will take appropriate steps to protect the safety of any pupils that may come in contact with Consultant's employees, subcontractors or suppliers so that the fingerprinting and criminal background investigation requirements of Education Code section 45125.1 shall not apply to Contractor under the Contract.*

*As an authorized DISTRICT official, I am familiar with the facts herein certified, and am authorized to execute this certificate on behalf of the DISTRICT.*

Date: \_\_\_\_\_

DISTRICT Representative's Name and Title: \_\_\_\_\_

DISTRICT Representative's Signature: \_\_\_\_\_

Contractor's responsibility for background clearance extends to all of its employees, Subcontractors, and employees of Subcontractors coming into contact with DISTRICT pupils regardless of whether they are designated as employees or acting as independent contractors of the Contractor.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Company: \_\_\_\_\_

**END OF DOCUMENT**

00 51 00      NOTICE OF AWARD



**NOTICE OF AWARD**

Dated: \_\_\_\_\_, 202\_\_.

To: \_\_\_\_\_ (Contractor)

\_\_\_\_\_  
(Address)

From: The Governing Board ("Board") of the Pacific Grove Unified School District ("District")

Project Name: \_\_\_\_\_ Project No. \_\_\_\_\_  
\_\_\_\_\_ ("Project").

Contractor has been awarded the Contract for the above-referenced Project on \_\_\_\_\_, 202\_\_, by action of the District's Board.

The Contract Price is \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ ), and includes alternates \_\_\_\_\_.

1. One electronic copy of the proposed Contract Documents listed below accompanies this Notice of Intent to Award. Two (2) sets of the Drawings will be delivered separately or otherwise made available. Additional copies are available at cost of reproduction.
2. You must comply with the following conditions within TENTH (10) calendar days of the date of this Notice of Award. The Contractor shall execute and submit the following documents by 4:00 p.m. of the Tenth (10th) calendar day following the date of the Notice of Award.
  - a. Agreement: To be executed by successful Bidder. District requires Contractor to submit one (1) copy bearing an original signature.
  - b. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
  - c. Payment Bond (Contractor's Labor & Material Bond) (100%) on the form provided in the Contract Documents and fully executed as indicated on the form.
  - d. Insurance Certificates and Endorsements as required. Workers' Compensation Certification.

- e. Prevailing Wage and Related Labor Requirements Certification.
- f. Drug-Free Workplace Certification.
- g. Tobacco-Free Environment Certification.
- h. Workplace Violence Prevention Plan Certification.
- i. Hazardous Materials Certification.
- j. Lead-Based Materials Certification.
- k. Imported Materials Certification.
- l. Criminal Background Investigation/Fingerprinting Certification.

Failure to comply with these conditions within the time specified will entitle District to consider your bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited, as well as any other rights the District may have against the Contractor.

After you comply with those conditions, the District will return one fully executed copy of the Agreement.

*END OF DOCUMENT*

00 52 13            **SAMPLE CONSTRUCTION CONTRACT**

**LUMP SUM – FIXED PRICE**

THIS CONSTRUCTION CONTRACT (this “Agreement”) is entered into on this (Date): March 07, 2022

Between the Owner: **PACIFIC GROVE UNIFIED SCHOOL**  
435 Hillcrest Ave Pacific Grove CA 93950

**DISTRICT**

And the Contractor:

### **RECITALS**

- Owner desires to contract with Contractor for the PGUSD [Project Title and Address] Project FY \_\_\_\_ - \_\_\_\_ (the "Project"), Located:

Pacific Grove Unified School District  
[PROJECT TITLE AND ADDRESS]

- B.** Contractor desires to construct the Project on the terms and conditions contained herein. NOW THEREFORE, for good and valuable consideration the receipt and adequacy of which are hereby acknowledged, the parties agree as following.

#### **Section 1. Definitions.**

**Work.** As used herein the "Work" shall mean all labor and materials, or both, necessary to perform the Project, to full completion, and shall consist of the components described in the *Notice to Bidders, Jobsite Walk, Contract Documents, And Drawings as provided by HGHB Architecture*. The Work shall be done and the materials furnished in accordance with the information provided in the *Notice to Bidders, Jobsite Walk, Contract Documents, And Drawings as provided by HGHB Architecture*, and as discussed in all correspondence prior to bid time and at the job walk.

#### **Section 2. Obligations of Contractor.**

Contractor agrees to furnish and transport all necessary labor, permits, materials, tools, implements, supplies, building materials and component parts, and appliances required to perform and finish the Work to industry standards and all applicable codes, free of any and all liens and claims of laborers, materialmen, suppliers, and subcontractors, free from any and all defects or deficiencies. Contractor shall further endeavor to use its best faith efforts to complete the Project timely, and continually keep Owner apprised of the status of the Project.

#### **Section 3. The Work.**

(a) Contractor has reviewed the Scope of Work (*Notice to Bidders, Jobsite Walk, Contract Documents, And Drawings as provided by HGHB Architecture*), and represents that: (i) if the Work is performed in accordance therewith, the Work shall have been constructed in accordance with all applicable state, county, and municipal laws, codes, and regulations, including, but not limited to, all applicable building codes; and (ii) the Plans and Specifications are sufficiently complete and detailed to permit Contractor to perform the entire Work on the basis of the Notice to Bidders and Jobsite Walk for the Fixed Price Cost. No changes in the scope of work or Fixed Price shall be made unless in a change order signed by both parties. (iii) contractor will be responsible for locating all utilities (above and below ground) with a licensed locating service prior to commencing work on the site. The

contractor will be provided with information from the owner locating said utilities to the best of the owner's knowledge.

**(b)** If at any time or times during the process of the Work, Owner desires to add to, alter, deviate from, or make omissions from the Work to be performed under the *Notice to Bidders, Jobsite Walk, Contract Documents, And Drawings as provided by HGHB Architecture*. Owner shall be at liberty to do so and the same shall in no way affect or make void this Agreement. Any such alterations to the scope of work, or deviations from *Notice to Bidders, Jobsite Walk, Contract Documents, And Drawings as provided by HGHB Architecture*, shall be made only in a writing signed by both parties. Any verbal changes in the scope of Work defined within the *Notice to Bidders, Jobsite Walk, Contract Documents, And Drawings as provided by HGHB Architecture* shall be of no force nor effect. This Agreement shall be considered completed when: (i) the Work is finished in strict accordance with the *Notice to Bidders, Jobsite Walk, Contract Documents, And Drawings as provided by HGHB Architecture* as amended by any written change order

(ii) the Owner approves of the Work;

(iii) a notice of completion has been recorded; and (iv) the Contractor has received final payment.

#### **Section 4. Contract Time.**

Contractor agrees to commence the Work or as mutually agreed after receiving written notification to proceed from Owner, and shall complete the Work in no event later than **[time allotted]** from the Notice to Proceed (the "Completion Date"). Contractor shall carry out the Work at all times with the greatest possible dispatch and diligence. If Contractor has not completed the Work by the Completion Date, then Owner may terminate this Agreement, Contractor shall immediately terminate its Work, Owner may withhold payment to the Contractor to complete the Work and the Project with another contractor, and in the event withholding such funds is insufficient to complete the Work and the Project, the Contractor will refund to the Owner such funds necessary to complete the Work and the Project within **[time allotted for work]** of receipt of written demand.

#### **Section 5. Fixed Price.**

1. Owner agrees, in consideration of Contractor's performance of this Agreement, to pay Contractor the **Fixed Price of [spell out amount] Dollars (\$0.0)**. (This sum shall constitute payment in full for all costs incurred by Contractor under this Agreement in performing and completing the Work, including, but not limited to, the costs incurred for insurance, overhead, subcontractor's materials, supplies, bonds (if any are required by Owner), permits and compliance with all building codes and laws, and Social Security, unemployment, sales, use, and all other taxes and costs.

#### **A contingency / tracking log to be maintained during the project.**

0. Progress payments on account of the Fixed Price cost shall be made as follows. Please note that Contractor must submit an invoice to the PGUSD for all progress payments as listed below:

**(a)** Applications for payment as set forth according to the schedule below:

1. **\$1,000.00 - Upon Execution of Contract.**  
**(\$1,000 or 10% of the contract, whichever is less)**
  0. **35% (+/-) - Material Acquisition and Mobilization.**

- 0. 45% - Progress Payments**
- 0. 10% - Upon Final Inspection and Sign Off of Punch List.**

**(b)** The balance of ten percent (10%) of the contract price shall not become due until completion and final acceptance of the Work. As a condition precedent to Owner's obligation to make any progress payment, Contractor shall provide Owner with the following documents upon Owner's written request: (i) a conditional mechanics' lien release from each laborer, material supplier, and other subcontractor who provided labor, materials, or supplies for the component(s) of the Work covered by such progress payment. (c) As an additional condition precedent to Contractor's right to receive final payment, Contractor shall discharge and release the Work from any and all claims or liens that may have accrued from the performance of this Agreement and the final building inspection by Owner and the applicable governmental agency shall have been completed and accepted, and shall provide Owner with the following documents upon Owner's written request: (i) an unconditional mechanics' lien release from each such claimant who provided a conditional mechanics' lien release for the payment due (if any) to such claimant from the immediately preceding progress payment once the funds clear the contractors account. (ii) a recorded notice of completion; and (iii) "as built" drawings.

- 0.** If at any time during the progress of the Work or before the final payment is made, any lien or claim or lien is filed, or notification to withhold money for labor or material furnished by Contractor under this Agreement is served on Owner, and Owner has performed its obligations under this Agreement, then Owner shall have the right to: (i) withhold from any payment due to Contractor an amount sufficient to discharge any and all such liens or claims; (ii) pay the lien holder directly and offset any such amount against the Fixed Price Cost; and (iii) bond around the lien at Contractor's sole cost and expense.
- 0.** Owner reserves the right to make payments to Contractor in the form of checks payable jointly to Contractor and to any of its subcontractors or suppliers if Owner reasonably suspects that Contractor is not making payment to any such subcontractors or suppliers, or to protect Owner from any liens or encumbrances.
- 0.** Owner may withhold any progress payment or final payment, or nullify any certification for payment previously issued, to the extent necessary to protect Owner from loss due to: (i) claims filed (including litigation, mechanic's liens, stop notices ("Claims")); (ii) reasonable evidence indicating probable filing of Claims; (iii) failure of Contractor to make timely payments to subcontractors or material suppliers; (iv) any material breach of this Agreement; (v) any reasonable doubt that the Agreement can be completed for the balance then unpaid; or (vi) defective or deficient work.
- 0.** Final payment is due within thirty days of satisfaction of all completion conditions referenced above.

## **Section 6. Warranty.**

All Work that is not completed to plans and specifications, applicable codes, and industry standards shall be immediately repaired, removed, and replaced with Work of a quality approved by the Owner, without additional compensation to the Contractor. The Contractor guarantees that the Work done under this Agreement will be free from faulty materials or workmanship and will comply with all applicable laws. Upon receiving notification from Owner, Contractor agrees to remedy, repair, or replace, immediately, without cost to Owner and to Owner's

satisfaction, all defects, damages, or imperfections appearing in the Work (including labor and materials) within a period of one (1) year after the date of final completion and acceptance by the applicable governmental agency and Owner of the Work. Payments to Contractor shall not relieve Contractor of these obligations. Contractor will keep clean on a weekly basis the jobsite and grounds around the jobsite, and keep it in a safe, orderly, and neat condition. At the completion of the Work, the entire jobsite will be left in a broom-clean condition. Contractor shall assign all material and parts warranties to the Owner, and shall deliver to the Owner evidence of any such warranties as well as all product information and specifications. Contractor warrants that it is licensed by the Contractors State Licensing Board, and currently in good standing.

## **Section 7. Insurance/Bonds/Indemnity**

**7.0** Before commencement of any Work under this Agreement, Contractor shall obtain and maintain in full force and effect the following:

A **Performance Bond** in the amount of one hundred percent (100%) of the Contract Sum to insure Owner during construction, and for one year after completion and during any warranty or guarantee period, against faulty or improper materials or workmanship and to assure Owner of full and prompt performance of the Contract.

A **Payment Bond (Labor and Material)** in the amount of one hundred percent (100%) of the Contract Sum in accordance with the laws of the State of California to secure payment of any and all claims for labor and materials used or consumed in performance of this Contract.

1. Comprehensive General Liability insurance that names Owner as an additional insured and that protects Contractor and Owner against any liability that Contractor may incur: (a) Because of bodily injuries to or the death of one person other than an employee of Contractor and consequential damages arising therefrom to the extent of not less than \$2,000,000.00 and on account of bodily injuries to or the death of more than one such person, subject to the same limit for each. (b) Because of damage to or destruction of any property, to the extent of not less than 2,000,000.00 for each incident and aggregate.
0. Worker's Compensation insurance in statutory form and amount and employer's liability insurance covering Contractor's liability to the extent of not less than \$2,000,000.00 for damages because of bodily injuries to or death of such person or persons.
0. The insurance described in Paragraph 7.1 above also shall provide contractual liability coverage satisfactory to Owner with respect to liability assumed by Contractor under the indemnity provisions in this Agreement. Written proof of compliance with these requirements shall be filed with and approved by Owner before commencement of Work. The insurance provided in Section 7.1 shall name Owner, as an additional insured, and Contractor shall cause to be issued certificates and endorsements evidencing such coverage prior to the commencement of construction. The insurance to be maintained by the Contractor shall at all times be primary to the insurance maintained by Owner.
0. To the maximum extent permitted by law, Contractor shall indemnify, defend, and save harmless Owner and hold Owner, harmless from any and all losses, damages (whether general, punitive or otherwise),

liabilities, claims, causes of action, judgments, and other costs and expenses, including attorneys' fees and court costs ("Claim"), including but not limited to Claims involving personal injuries or property damage, which Owner may suffer or incur as a consequence of (i) Contractor's failure to perform any of Contractor's obligations as and when required hereunder, including any failure of any representation or warranty of Contractor to be true and correct and any errors, omissions or negligent acts committed by Contractor, its agents, subcontractors, or employees, (ii) any Claim or cause of action to the effect that Owner is in any way responsible or liable for any act or omission of Contractor, (iii) any act or omission by Contractor or any person or entity hired or employed by Contractor to perform any services relating to the subject matter of this Agreement; (iv) any Claim in any manner arising out of Contractor's performance of the Work; or (v) any breach of this Agreement by Contractor. Contractor shall pay any indebtedness arising under this indemnity to Owner immediately upon demand by Owner together with interest thereon from the date such indebtedness arises until paid at the rate equal to the greater of ten percent (10%) per annum or the highest lawful rate. Contractor's duty to indemnify Owner shall survive the termination of this Agreement. The foregoing indemnity shall not apply if the Owner's sole gross negligence or willful misconduct is the cause of the Claim.

## **Section 8. Work Stoppage**

If Contractor at any time during the progress of the Work refuses or neglects, without the fault of Owner, to supply sufficient materials or workers to continue or complete the Work for a period of more than ten (7) days, not due to conditions beyond control of the contractor are not the cause, after having been notified in writing by Owner to furnish them, Owner shall have the power to terminate this Agreement and/or furnish and provide such materials and workers as are necessary to finish the Work, and the reasonable expense thereof shall be deducted from the amount of the contract price as determined in this Agreement.

## **Section 9. Termination.**

### **1. Termination by the Owner for Cause**

- a. The Owner may terminate the Contract if the Contractor repeatedly refuses or fails to supply enough properly skilled workers or proper materials; fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors; repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of a public authority; or otherwise is guilty of substantial breach of a provision of the Contract Document
- b. When any of the above reasons exists, the Owner, may determine that sufficient cause exists to justify such action, may, without prejudice to any other remedy the Owner may have and after giving the Contractor seven days' written notice, terminate the Contract and take possession of the site and of all materials, thereon owned by the Contractor and may finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.
- c. When the Owner terminates the Contract for one of the reasons stated in Section 20.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

- d. If the unpaid balance of the Contract Sum exceeds the reasonable costs of finishing the Work. If such reasonable costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner.

## **9.2 Termination by the Owner for Convenience**

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

## **9.3 Termination by the Contractor**

If the Owner fails to make payment as provided in Section 5.2 for a period of 7 days, the Contractor may, upon seven additional days' written notice to the Owner and or the Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

## **Section 10. Independent Contractor.**

Contractor agrees to perform the Work as an independent contractor and not as the agent, employee, or servant of Owner. Contractor has and hereby retains the right to exercise full control and supervision of the Work and full control over the employment, direction, method of performing, compensation, and discharge of all persons assisting in the Work. Contractor agrees to be solely responsible for all matters relating to payment of its employees, including compliance with Social Security, withholding, and all other regulations governing such matters. Contractor agrees to be responsible for its own acts and those of its subordinates, employees, and subcontractors during this Agreement.

## **Section 11. Assignment.**

Contractor shall not assign this Agreement or any interest in it or any money due or to become due under it voluntarily, involuntarily, or by operation of law without Owner's prior written consent. In the event of any such purported assignment without Owner's prior written consent,

Owner shall have the right, in addition to all other rights provided by law, to terminate this Agreement by giving written notice to Contractor.

## **Section 12. Miscellaneous.**

Contractor shall at all times operate in good faith to coordinate job site installation and the work of other trades at the Project and to complete the Work in a time efficient manner and in a manner which will minimize disturbance, noise and inconvenience to the surrounding residents. Time is of the essence of this Agreement.

This Agreement shall be governed by the laws of the State of California.

**Section 13. Mediation.**

Any dispute arising of this Agreement shall first be submitted to mediation in an informal attempt to resolve such dispute. The mediation shall be conducted by a mediator experienced in the area of construction and construction contracts. Any party who first files any claim, including a complaint, without first seeking in good faith to participate in mediation, shall not be entitled to recover its attorney's fees pursuant to Section 14 of this Agreement, regardless of whether such party is the "prevailing party" in any such action.

**Section 14. Attorney Fees.**

If any suit or action is brought to enforce or construe any provision of this Agreement, the prevailing party shall be entitled to recover its costs and expenses arising out of such litigation, including attorneys' fees and court costs, from the non-prevailing party.

**CONTRACTOR: [Name]**

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

**OWNER(S) / AGENT(S): Pacific Grove Unified School District**

Signature: \_\_\_\_\_

Print Name: Joshua Jorn

Title: Assistant Superintendent of Business Services

Attachments:

Exhibit A: Schedule of Value

Exhibit B: Performance and Material Bonds

***END OF DOCUMENT***

00 55 00

NOTICE TO PROCEED



Dated: \_\_\_\_\_, 202\_\_

TO: \_\_\_\_\_  
(Contractor)

ADDRESS: \_\_\_\_\_

PROJECT: \_\_\_\_\_

PROJECT/CONTRACT NO: \_\_\_\_\_

between the Pacific Grove School District and Contractor ("Contract").

You are notified that the Contract Time under the above Contract will commence to run on \_\_\_\_\_, 202\_\_. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the Agreement executed by Contractor, the date of completion is \_\_\_\_\_, 202\_\_.

You must submit the following documents by 5:00 p.m. of the TENTH (10TH) calendar day following the date of this Notice to Proceed:

- a) Contractor's preliminary schedule of construction.
- b) Contractor's preliminary schedule of values for all of the Work.
- c) Contractor's preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals
- d) Contractor's Safety Plan specifically adapted for the Project.
- e) A designated subcontractors list, including the name, address, telephone number, facsimile number, California State Contractors License number, classification, and monetary value of all Subcontracts.

Thank you. We look forward to a very successful Project,

Pacific Grove School District

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

*END OF DOCUMENT*

00 61 13.13

# PERFORMANCE BOND



(100% OF CONTRACT PRICE)

(Note: Contractor must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board (“Board”) of the Pacific Grove Unified School District, (“PGUSD”) and (“Principal”):  
\_\_\_\_\_ have entered into a contract for the furnishing of all materials and labor, services, and transportation, necessary, convenient, and proper to perform the following project:

Project Title: \_\_\_\_\_

(“Project” or “Contract”) which Contract dated \_\_\_\_\_, 20\_\_\_\_, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

WHEREAS, said Principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract.

NOW, THEREFORE, the Principal and \_\_\_\_\_ (“Surety”)

are held and firmly bound unto the Board of the PGUSD in the penal sum  
of \_\_\_\_\_

Dollars (\$ \_\_\_\_\_), lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents, to:

- Promptly perform all the work required to complete the Project; and
- Pay to the PGUSD all damages the PGUSD incurs as a result of the Principal’s failure to perform all the Work required to complete the Project.

Or, at the PGUSD’s sole discretion and election, the Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by the PGUSD of the lowest responsible bidder, arrange for a contract between such bidder and the PGUSD and make available as Work progresses sufficient funds to pay the cost of completion less the “balance of the Contract Price,” and to pay and perform all obligations of Principals under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of liquidated damages. The term “balance of the Contract Price,” as used in this paragraph, shall mean the total amount payable to Principal by the PGUSD under the Contract and any modifications thereto, less the amount previously paid by the PGUSD to the Principal, less any withholdings by the PGUSD allowed under the Contract. PGUSD shall not be required or obligated to accept a tender of a completion contractor from the Surety for any or no reason.

The condition of the obligation is such that, if the above bound Principal, its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and

agreements in the Contract and any alteration thereof made as therein provided, on its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and warranties of materials and workmanship, and shall indemnify and save harmless the PGUSD, its trustees, officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and virtue.

Surety expressly agrees that the PGUSD may reject any contractor or subcontractor proposed by Surety to fulfill its obligations in the event of default by the Principal. Surety shall not utilize Principal in completing the Work nor shall Surety accept a Bid from Principal for completion of the Work if the PGUSD declares the Principal to be in default and notifies Surety of the PGUSD's objection to Principal's further participation in the completion of the Work.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for a period equal to the warranty and/or guarantee period of the Contract, during which time Surety's obligation shall continue if Contractor shall fail to make full, complete, and satisfactory repair and replacements and totally protect the PGUSD from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the PGUSD's rights or the Contractor or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond. The Surety also stipulates and agrees that it shall not be exonerated or released from the obligation of this bond by any overpayment or underpayment by the PGUSD that is based upon estimates approved by the Architect. The Surety does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work or to the specifications.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Principal: \_\_\_\_\_ By: \_\_\_\_\_ Surety:  
\_\_\_\_\_  
By: \_\_\_\_\_ Name of California Agent  
of Surety: \_\_\_\_\_ Address of California Agent of Surety:  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone of California Agent of Surety:  
\_\_\_\_\_

**Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.**

*END OF DOCUMENT*

## Division 01 General Conditions

### 01 10 00 Summary of Work

#### 1.01 WORK REQUIRED BY CONTRACT DOCUMENTS

##### A. Purpose of Bid:

1. The purpose of this bid is to solicit offers from qualified Contractors (C-7, C10, C-16) to perform Fire Alarm Upgrades at Robert Down Elementary School. Work shall include but not be limited to the

following:

- a. Removal of obsolete fire alarm system components.
  - b. Installation of new nonproprietary fire alarm system components to bring system to current code compliance.
2. The Contractor shall be responsible for scheduling and coordinating the work with the PGUSD Staff, Representatives, and contractors on other PGUSD projects working concurrent with this project. Reference paragraph 1.04 of this section.
  3. The work to be done includes all labor, tools and equipment necessary to furnish and install all materials and equipment shown on the drawings and described herein and to perform tests described herein, to provide complete and operating systems to the extent specified and shown on the drawings. The Contractor shall furnish all equipment, material and supplies, except where specifically noted as existing or supplied by the District.
- B. Overview of the District/Location of Work:
1. The Pacific Grove Unified School District (“District”) is located in Monterey County. The District consists of two elementary schools, one middle school, one high school, one community high school, one charter school, one adult school and a district office. The District serves approximately 1,800 students in the city of Pacific Grove. The District’s administrative offices are located at 435 Hillcrest Ave, Pacific Grove, CA 93950.
  2. This project is located at Robert Down Elementary School – 485 Pine Ave., Pacific Grove, CA 93950.
- C. Limits of Work:
- As shown on Drawings.

## **1.02 SUBSTANTIAL COMPLETION**

Substantial Completion shall only be applicable to the entire Work.

## **1.03 FUTURE WORK**

Reference sub section 1.04

## **1.04 WORK SEQUENCE OR PHASING**

- A. All work must be completed within the contract time.

## **1.05 SITE ACCESS**

- A. All construction vehicles and material/equipment deliveries shall access the work area using main roads. Contractor parking will be coordinated with District’s representative and may not be directly at the work site.
- B. Contractor’s main access and staging will be located as shown on Exhibit A in Section 007313 (Special Conditions).
- C. Sequence all construction, including connections to existing utilities to preserve the following: existing site access, circulation, and use adjacent to the Sites (access must be paved, lighted, and uninterrupted).

## **1.06 CONTRACTOR'S USE OF PROJECT SITE**

- A. Contractor's use of the Project site for work, staging, and storage is strictly to be coordinated with the construction manager and owner.
- B. Coordinate use of premises under direction of the District's Representative or Construction Manager. Cooperate with the District to minimize conflict and to facilitate the District's on-going operations and activities on and about the site.
- C. Cooperate with other contractors to facilitate work to be done within Limits of Work under the Contract. Access on major roads and access right-of-way is to be shared with other contractors. All weather access is to be adequately maintained for all major roads and right-of-ways within the Project Limits of Work.
- D. Contractor shall provide and maintain all fencing, barricades, guard rails, bridges, warning signs, lights, paved paths, and the like as are necessary to protect Contractor’s own personnel, PGUSD staff and students, and

outside public from the work site.

- E. Contractor shall be responsible for protection and safekeeping of products furnished under the Contract that are stored within Limits of Work.
- F. Move products stored under the Contractor's control that interfere with operations of the District.
- G. Stockpiling of materials, storage of equipment, trailers and other appurtenances related to construction operations will be limited to specific locations to be approved by the District's Representative or the District's Construction Manager in their sole reasonable discretion.
- H. Note that construction operations within drip lines of existing trees are restricted. Refer to Section 015639 for requirements.
- I. All areas within Limits of Work that do not require specific work shall be returned to the District at completion of the Project in same condition as received by the Contractor; the Contractor shall repair, replace or correct any condition within the area of the Limits of Work that are damaged, destroyed or altered during performance of the Work to the condition(s) existing immediately prior to the Contractor's commencement of Work.
- J. Disagreements between Contractor and other contractors about concurrent use of work areas or access to the site that are not resolved by the participants shall be referred to the District's Representative. Contractor shall agree to abide by the District Representative's determination as to concurrent use or priority of access and to perform its work in compliance with the District Representative's resolution at no additional cost to the District.
- K. The Limits of Work shall not be used for stockpiling or storage of materials, equipment, trailers, and other appurtenances not related to the construction operations of this Project without written approval from the District's Representative. Reference paragraph G above.
- L. All material and equipment deliveries shall be made only to the Project site. The District's receiving personnel will not accept any material and equipment for this project that is received at the District's warehouse or other facilities.

#### **1.07 CONDUCT OF THE CONTRACTOR'S PERSONNEL**

- A. The Contractor shall at all times maintain discipline among personnel employed at or having business at the Project site, including during meal and break periods. The Contractor shall act promptly to correct conduct which the District's Representative and/or The Construction Manager deems intimidating, offensive, or hostile to the District's personnel, students, and visitors; such as: whistling or staring at, calling to, or commenting on persons passing the site (whether intended as complimentary or offensive); making obscene gestures; making or displaying offensive drawings, graffiti, or photographs; making propositions or invitations for dates or sex; or making racially, sexually, or ethnically related remarks or jokes. The Contractor shall inform all new personnel of this policy.
- B. In the event that any Contractor's employee initiates such unwarranted or unwanted interaction, or utilizes profanity or offensive language, the Contractor shall, either upon the request of the District, Construction Manager, or on its own initiative, replace the employee with another of equivalent skill, at no additional cost to the District.
- C. The Contractor shall be responsible to ensure that its employees observe the District's rules on Tobacco policies. The project site has been designated as a Tobacco-free zone. No Tobacco products of any kind are allowed on the Project site.
- D. The Contractor shall be responsible to ensure that its employees do not bring to, possess at, or consume alcoholic beverages on or near the Project site.
- E. The Contractor shall be responsible to ensure that its employees are properly attired at all times. Proper attire includes, but is not limited to, shirts, full-length pants, appropriate work shoes and boots, safety head gear, and safety eye protection. No suggestive, offensive or sexually explicit clothing shall be worn or displayed.

#### **1.08 OCCUPANCY**

The District's Occupancy: The District will occupy existing adjacent buildings during the entire period of construction. Contractor shall cooperate fully with the District during construction operations to minimize conflicts and to facilitate the District's usage. Contractor shall perform all work so as not to interfere with the District's operations.

#### **1.09 DISTRICT-FURNISHED ITEMS**

Not Applicable.

#### **1.10 APPLICABILITY OF ALL SECTIONS OF SPECIFICATIONS**

All sections of the Specifications and Drawings are interdependent and applicable to the Project as a whole.

#### **1.11 DIVISION OF THE SPECIFICATIONS**

The Specifications are divided for convenience into sections as set forth in the Table of Contents. The actual limitation of work in the various trades and/or sections of the Specifications are the responsibility of Contractor.

#### **1.12 START OF WORK**

The Contractor shall commence Work as of the date set forth in the Notice to Proceed issued by or on behalf of the District to the Contractor. The Contract Time shall be computed from the date for commencement of Work set forth in the Notice to Proceed issued by or on behalf of the District; the Contract Time will not be extended or otherwise adjusted if the Contractor does not commence Work as of the date established in the Notice to Proceed for commencement of the Work.

#### **1.13 SURROUNDING SITE CONDITION SURVEY**

Prior to commencing the Work, Contractor, the District, and the District's Representative shall tour the Project site together to examine and record damage to existing adjacent buildings, curbs, roads, paved parking areas, and other structures and improvements. This record shall serve as a basis for determination of subsequent damage due to Contractor's operations and shall be signed by all parties making the tour. Any cracks, sags, or damage to existing adjacent buildings, curbs, roads, paved parking areas, and other structures and improvements not noted in the original survey, but subsequently discovered, shall be reported to the District's Representative.

#### **1.14 EXAMINATION OF THE SITE AND VERIFICATION OF CONDITIONS**

Contractor shall examine the site and become acquainted with the conditions under which the Work is to be carried out. Upon submitting Contractor's bid, Contractor shall be held to have made such examination, and no allowance for extras will be allowed for any error or oversight resulting from Contractor's unfamiliarity with the site or existing conditions. Contractor shall obtain accurate field dimensions of all related areas, spaces, openings, levels, and items of adjacent work and, before commencing work, report to the District, in writing, via the District's Representative, all discrepancies between the Contract Documents and the actual field conditions.

Commencement of work by Contractor shall constitute acceptance of all existing conditions affecting the work.

#### **1.15 INTENT OF THE CONTRACT DOCUMENTS**

The intent is to provide the District with a Project that is complete in all respects as described in these Contract Documents. All Work, labor, materials, equipment, services or items necessary or reasonably required are to be provided to produce a complete and operational Project are deemed included within the Contract Price and shall be completed within the Contract Time.

#### **1.16 ORDER OF PRECEDENCE**

A. The order of precedence of the documents set forth below will be used by the District's Representative to; (1) define the intent and meaning of the Contract Documents; (2) resolve apparent inconsistencies in Submittals and Contract Documents; (3) determine the adequacy and completeness of Contractor's submittals; (4) determine the acceptability of construction; and (5) determine entitlement to extra compensation:

1. Modifications
2. The Agreement
3. Addenda
4. Special Conditions
5. Division 1, General Requirements
6. General Conditions
7. Technical Specifications
8. Drawings
9. Standard Specifications

10. Standard Drawings

11. Submittals (as favorably reviewed)

**1.17 INTERPRETATION OF CONTRACT DOCUMENTS**

Should Contractor find discrepancies in, or omissions from the Drawings or Specifications, or should the Contractor be in doubt as to their meaning, the Contractor shall at once notify the District's Representative in writing and should it be found that the point in question is not clearly and fully set forth, a written clarification will be issued. Neither the District's Representative nor the District will be responsible for any oral instructions.

**1.18 ORAL MODIFICATIONS**

It shall be distinctly understood that no oral statement of any person shall be allowed in any manner to modify any of the Contract provisions. Changes shall be made only on written authorization of the District's Representative, except in an emergency endangering life or property.

**1.19 TRANSMITTAL**

Any correspondence from one party to the other under the Contract shall be via email from the party initiating such correspondence or by duly authorized representative of such party. Correspondence and other communications relating to the Work shall be through the Construction Manager.

**1.20 CORRESPONDENCE**

Correspondence requirements will be determined by the Construction Manager at the commencement of work and discussed at the pre-construction meeting (Reference section 013119).

**1.21 COPIES OF DOCUMENTS**

Contractor will be furnished with an electronic copy of all Contract Documents for Contractor's requirements as stated in the General Conditions.

**1.22 SPECIFICATIONS AND DRAWINGS**

- A. Contractor shall keep on the Project site / maintain a record of the Contract documents, including but not limited to; Specifications, Drawings, Responses to Requests for Information (RFI), Change Orders, and the same shall be available at all reasonable times for inspection and use by the District's Representative and by any other person authorized by the District's Representative. Any Drawings listed in the detail Specifications shall be regarded as a part thereof and of the Contract. Anything mentioned in these Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in these Specifications, shall be of like effect as though shown or mentioned in both.
- B. It shall be the duty of Contractor to see that the provisions of these Specifications are complied with in detail irrespective of the inspection given the work during its progress by the District's Representative or others. Any failure on the part of Contractor to strictly comply with the requirements of the contract documents, including without limitation the Specifications, will be sufficient cause for the rejection of the work at any time before its acceptance and/or constitute an event of Contractor default.
- C. The District's Representative will furnish from time to time, such detail drawings, plans, profiles, and information, as the District's Representative may consider necessary for Contractor's guidance to insure the proper and adequate execution of the Contract. Contractor shall comply with such detail drawings, plans, profiles and information without adjustment of the Contract Price or the Contract Time.
- D. Only favorably reviewed shop drawings and submittals shall be used in construction. Refer to Section 013300.

**1.23 MANUFACTURER'S INSTRUCTIONS**

- A. Where the contract documents state that products, processes, equipment or the like shall be installed or applied in accordance with manufacturer's instructions, directions or specifications, they shall be construed to mean that said application or installation shall be in strict accordance with printed instructions furnished by the manufacturer of the material concerned for use under conditions similar to those at the Project site.
- B. The manufacturer's directions do not take precedence over the Contract Drawings and Specifications. Where such directions are in conflict with the Contract Documents, Contractor shall request in writing a clarification from the District's Representative before proceeding with the work.

#### **1.24 NOTICE AND SERVICE THEREOF**

- A. Any notice to Contractor from the District's Representative relative to any part of this Contract will be in writing and considered delivered and the service thereof completed, when said notice is posted, by certified or registered mail, to the said Contractor at Contractor's last given address, or delivered in person to the said Contractor or Contractor's authorized representative on the work.

#### **1.25 MANAGEMENT**

- A. Contractor shall designate in writing before starting Work, an authorized representative (Project Manager) who shall have complete authority to represent and act for Contractor. This representative shall be acceptable to the District and shall be approved by the District's Representative.
- B. Contractor shall designate in writing before starting Work, an authorized representative (Superintendent, as per General Conditions). This representative shall be acceptable to the District and shall be approved by the District's Representative. Said authorized representative shall be present at the site of the Work at all times while Work is actually in progress on the Contract, and during periods when Work is suspended, arrangements acceptable to the District shall be made for any emergency work that may be required.
- C. If such approval, as noted above for the Project Manager and Superintendent, shall be withdrawn by the District's Representative, Contractor shall, as soon as is practicable after having received written notice of such withdrawal, remove the representative(s) from the Project and shall not thereafter employ that person as Contractor's representative(s) on the Project. Contractor shall replace said representative(s) with another representative acceptable to the District and approved by the District's Representative as specified above.

#### **1.26 PAYMENT FOR PATENTS AND PATENT INFRINGEMENT**

All fees or claims for any patented invention, article or arrangement that may be used upon or any manner connected with the performance of the Work or any part thereof shall be included in the price bid for doing the work, and Contractor and Contractor's sureties shall protect and hold the District's Representative, and the District, together with all their officers, agents and employees, harmless against liability of any nature or kind for any and all costs, legal expenses, and demands made for such fees or claims and against any and all suits and claims brought or made by the holder of any invention or patent, or growing out of any use or alleged infringement of any invention or patent, or on account of any patented or unpatented invention, process, article, or appliance manufactured for or used in the performance of the Contract, including its use by the District, unless otherwise specifically stipulated in the Contract. Before final payment is made on the Contract, Contractor shall furnish acceptable proof to the District of a proper release from such fees or claims.

#### **1.27 RELEASE**

The acceptance by Contractor of the final payment made under the terms of the Contract shall operate as, and shall be as a release to the District, the District's Representative and their duly authorized agents, from all claim of and/or liability to Contractor for anything done or furnished for, or in relation to, the Work or for any act or neglect of the District or any person related to or affecting the Work.

#### **1.28 CLEANING**

Contractor shall clean up the Project and construction area such that the Project site is kept continuously clean. The Contractor is required to maintain at least one (1) dumpster adequately sized for general use as well as trash receptacles as necessary on the Project site. The Contractor shall dispose of all debris in accordance with Section 013500 and Section 015000.

#### **1.29 UNAUTHORIZED INTERACTION WITH DISTRICT STAFF**

Any unauthorized interaction with the District's staff, faculty, and students shall be documented in writing and submitted to the District's Representative within 24 hours of the interaction. Any items, conflicts, or issues raised during this interaction must be referred to the District's Representative immediately.

[END OF SECTION 011000]

## **01 20 00      PRICE AND PAYMENT PROCEDURES**

### **1.01      UNIT PRICES**

1. N/A

### **1.02      APPLICATION FOR PAYMENT**

Make application for payments using the District's Standard form as per the General Conditions. Refer to Section 013300 for description of the requirements for the Schedule of Values.

### **1.03      CHANGE ORDER PROCEDURES**

- A. The following procedures and General Conditions, Article 9, will be followed in processing Change Orders:
1. The District's Representative prepares a Proposal Request for adjustment to the Contract Sum and/or adjustment to the Contract Time.
  2. The proposal request is sent, via email, to the Contractor.
  3. The Contractor shall submit, via email, a cost breakdown (cost proposal) to the District's Representative including any effect to the Contract Time. Refer to Exhibits for required form.
  4. If approved by the District's Representative (items involving cost additions or deductions, and Contract Time), the District's Representative will prepare a Change Order using the District's standard form and send that form, through Adobe Sign (or similar program), to the Contractor for electronic signature. Refer to Exhibits for required form.
  5. The form will also be routed to the District's Representative and the District for execution via electronic signature.
  6. After execution, a fully signed Change Order form will be distributed to all parties.
  7. Said Change Order shall not be valid until executed by the District and sent to the Contractor by the District Representative.
  8. The Contractor shall not proceed with any changes or additions to the Work without written authorization from the District in the form of a Change Order or Field Order. Reference paragraph 1.04 this section.
  9. If approved by the District, "priority work items" may be pursued by the Contractor upon receipt of a Field Order issued by the District to be followed up by inclusion in a Change Order.

**1.04 FIELD ORDERS**

- A. The following procedures will be followed in processing Field Orders:
1. The District's Representative will request from the Contractor a quotation or price (either verbally or in writing at the District's Representative's discretion) for the work item required. The Contractor shall promptly furnish a price to the District's Representative.
  2. If the District elects to accept the quote or price given by the Contractor, the District's Representative will prepare a Field Order form (the District's standard form), and return that form to the Contractor, via email or Adobe Sign for electronic signature.
  3. The Contractor shall sign the form and send, via email or Adobe Sign, to the District's Representative for execution by the District's Representative and the District.
  4. The District's Representative will formally distribute copies of the Field Order after execution by the District.
  5. Said Field Order shall not be valid until executed by the District and a copy returned to the Contractor by the District's Representative.
- B. The following limitations apply to Field Orders:
1. A Field Order becomes inactive when said Field Order is retired by inclusion in a Change Order.
  2. All Field Orders must be retired by inclusion in a Change Order prior to completion of the Project and prior to request for final payment by the Contractor.

**1.05 PROVISIONS FOR WEATHER-RELATED DELAYS**

- A. This provision specifies the procedure for determining time extensions for unusually severe weather conditions in accordance with the General Conditions. The list below defines the monthly-anticipated adverse weather conditions for the Contract period and is based upon NOAA or similar data for the geographic location of the Project.
- |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
| (8) | (6) | (6) | (4) | (1) | (0) | (0) | (0) | (1) | (2) | (4) | (6) |
- B. The above schedule of anticipated adverse weather will constitute the base line for monthly (or portion thereof)

weather time evaluations. Upon acknowledgment of the Notice to Proceed and continuing throughout the Contract on a monthly basis, actual adverse weather days will be recorded on a calendar day basis (including weekends and holidays) and compared to the monthly anticipated adverse weather in subparagraph A, above. For purposes of subparagraph B, the term actual adverse weather days shall include days impacted by "actual adverse weather days."

1. The number of actual adverse weather days shall be calculated chronologically from the first to the last day in each month. Once the number of actual adverse weather days anticipated in subparagraph A, above, have occurred, the District's Representative will examine any subsequently occurring adverse weather days to determine whether the Contractor is entitled to an extension of Contract Time. These subsequently occurring adverse weather days must prevent the Work for 50 percent or more of the Contractor's workday, and delay work critical to the timely completion of the Project. Delayed work must be shown on the Contract Schedule or Schedule Update in effect at the time of the adverse weather. The District's Representative will convert any delays meeting the above requirements to calendar days and grant an extension of time as provided in Article 8 of the General Conditions.
- C. The Contractor's Contract Schedule must reflect the above anticipated adverse weather delays on all weather-dependent activities.
  - D. The number of adverse weather days detailed in this Section shall not relieve Contractor of the responsibility to schedule and/or protect the Work in place (and stored materials) from wind and water damage.

[END OF SECTION 012000]

## 01 23 00            ALTERNATES

### 1.01    GENERAL

- A. This Section identifies each Alternate and describes basic changes to the Work only when that Alternate is made a part of the Work by specific provision in the Agreement. Alternates not part of the Agreement may be added to the work for a period of sixty (60) days after the date of the Agreement at the price shown in the Alternate Bid Item Proposal.
- B. The Lump Sum Base Bid and Alternates shall include the costs of all supporting elements required, so that the combination of the Lump Sum Base Bid and any Alternates shall be complete. The scope of work for all Alternates shall be in accordance with applicable Drawings and Specifications.
- C. Except as otherwise specifically noted, the work described in Alternates shall be completed with no increase in Contract Time.
- D. This Section includes only the non-technical descriptions of the Alternates. Refer to the specific Sections of Divisions

2 through 17 of the Specifications for technical descriptions of the Alternates.

- E. Coordinate related work and modify surrounding work as required to properly and completely integrate the Alternates into the Work.
- F. The Contractor shall quote prices for the Alternates listed below in the space provided therefore on the Bid Form. The Contractor shall be responsible for determining exact quantities of materials involved with the Alternates. Work for the Alternates shall be in strict accordance with the Specifications and Drawings.

**1.02 BIDS REQUIRED**

A. Base Bid:

- 1. The Base Bid consists of all items indicated and/or specified in the Drawings, Specifications and/or Bid Form. The costs for Additive Alternates will be added to the Base Bid, and the costs for Deductive Alternates will be subtracted from the Base Bid.

**1.03 DESCRIPTION OF ALTERNATES**

- 2. N/A

[END OF SECTION 012300]

# 01 26 13 REQUEST FOR INTERPRETATION

## 1.01 GENERAL

This Section contains the procedures to be followed by the Contractor upon discovery of any apparent conflicts, omissions, or errors in the Contract Documents or upon having any question concerning interpretation.

## 1.02 PROCEDURES

### A. Notification by Contractor.

1. Submit all requests for clarification or additional information in writing to the District's Representative using a Request for Information (RFI) form as acceptable to the District's Representative.
2. Number RFIs sequentially. Follow RFI number with sequential alphabetical suffix as necessary for each resubmission. For example, the first RFI would be "001." the second RFI would be "002." The first resubmittal of RFI "002" would be "002R."
3. Limit each RFI to one (1) subject.
4. Submit an RFI if one of the following conditions occur:
  - a. The Contractor discovers an unforeseen condition or circumstance that is not described in the Contract Documents.
  - b. The Contractor discovers an apparent conflict or discrepancy between portions of the Contract Documents that appears to be inconsistent or cannot be reasonably inferred from the intent of the Contract Documents.
  - c. The Contractor discovers what appears to be an omission from the Contract Documents that cannot be reasonably inferred from the intent of the Contract Documents.
5. RFIs will not be recognized or accepted if, in the opinion of the District's Representative, one of the following conditions exists:
  - a. The Contractor submits the RFI as a request for substitution.
  - b. The Contractor submits the RFI as a submittal.
  - c. The Contractor submits the RFI under the pretense of a Contract Documents discrepancy or omission without thorough review of the Contract Documents.
  - d. The Contractor submits the RFI in a manner that suggest that specific portions of the Contract Documents are assumed to be excluded or by taking an isolated portion of the Contract Documents in part rather than whole.
  - e. The Contractor submits an RFI in an untimely manner without proper coordination and scheduling of Work of related trades.
6. Ask for any clarification or request for information immediately upon discovery. Submit RFIs in a reasonable time frame so as not to affect the Contract Schedule while allowing the full response time described below.

**1.03 RESPONSE TIME**

- A. The District's Representative, whose decision will be final and conclusive, shall resolve such questions and issue instructions to the Contractor within a reasonable time frame. In most cases, RFIs will receive a response within 10 working days. In some cases, this time may need to be lengthened for complex issues, or shortened for emergency situations, as mutually agreed in writing.
- B. Should the Contractor proceed with the Work affected before receipt of a response from the District's Representative, within the response time described above, any portion of the Work which is not done in accordance with the District's Representative's interpretations, clarifications, instructions, or decisions is subject to removal or replacement and the Contractor shall be responsible for all resultant losses.
- C. Failure to Agree.
  - 1. In the event of failure to agree as to the scope of the Contract requirements, the Contractor shall follow procedures set forth in the General Conditions.

**[END OF SECTION 012613]**

## 01 31 00

# PROJECT MANAGEMENT AND COORDINATION

### 1.01 GENERAL

Responsibilities of the Contractor include but are not limited to the following:

- A. The Contractor shall coordinate all Work with the District's Representative.
- B. Coordinate the Work and do not delegate responsibility for coordination to any subcontractor.
- C. Anticipate the interrelationship of all subcontractors and their relationship with the Work.
- D. Resolve differences or disputes between subcontractors concerning coordination, interference, or extent of the Work between Sections.
- E. Coordinate the Work of subcontractors and material suppliers so that portions of the Work are performed in a manner that minimizes interference with the progress of the Work.
- F. Do not obstruct spaces and installations that are required to be clear by applicable code requirements.
- G. Do not cover any piping, wiring, ducts, or other installations until they have been inspected approved, and the required certificates of inspection have been issued.
- H. Remove and replace all Work that does not comply with the Contract Documents. Repair or replace any other work or property damaged by these operations with no adjustment of Contract Sum.
- I. Coordinate all portions of the mechanical, electrical and other Work requiring careful coordination in order to fit in space available.

### 1.02 PROJECT COORDINATION

- A. Meetings: Refer to Section 013119.
- B. Submittals: Refer to Sections 013300 and 013323.
- C. Contract Close-Out: Refer to Section 017700.
- D. Correspondence: Clearly identify correspondence with Project name, number, subject and detailed reference to relevant Drawings and Specifications. Details of distribution will be determined at Preconstruction Conference; refer to Section 013119.

### 1.03 MECHANICAL, ELECTRICAL, AND RELATED SYSTEMS COORDINATION

- A. Prior to proceeding with the work, and before installation, coordinate and work out all "tight" conditions involving work of various Sections. Before work proceeds in these areas, prepare supplemental drawings in CAD format for review by the District's Representative (refer to Section 013300, 1.04 Layout Data). Provide all work necessary to coordinate tight conditions including supplemental drawings in sufficient detail for showing that all work is coordinated in "tight" areas, and additional labor and materials necessary to overcome "tight" conditions at no increase in Contract price or Contract time. Coordination of "tight" conditions shall include:
  - 1. Providing sufficient clear space around all equipment necessary for maintenance access and as required by Code.
  - 2. Adjustments in depth, position, and elevation of underground and overhead utilities at points of conflict. Utility space conflicts shall be resolved by giving precedence to those utilities that are called out to be sloped. The term "utility" as used in this paragraph includes: all piping, conduit, and ductwork.
- B. The Contractor is responsible for coordination of the work with all trades.

#### **1.04 INTERRUPTION OF SERVICE**

- A. Any utility (including electronic system) interruptions shall be coordinated with the District, via the District's Representative. At least two weeks' preliminary written notice shall be given prior to any utility interruption. Final written notice shall be given a minimum of five (5) working days in advance of utility interruption. The District will make any interruption of utility service upon such notice. The Contractor shall not interrupt any utility service without the prior consent and approval of the District, which may be withheld, conditioned or limited in the sole and exclusive discretion of the District based upon the District's on-going activities and operations at and about the Site.
- B. All materials and supplies for completing the connection and restoring service shall be on hand before service is interrupted. Service interruptions shall be limited to eight (8) hour durations. The Contractor shall not leave the Project site until service is restored each day. The Contractor and its Performance Bond Surety shall be liable to the District for all damages (whether general, special or consequential damages) sustained by the District and resulting in whole or in part from the Contractor's unauthorized interruption of utility services and/or the Contractor's failure or refusal to restore interrupted utility service in strict conformity with applicable provisions of the Contract Documents.

#### **1.05 CUTTING AND PATCHING**

- A. The Contractor shall be responsible for the coordination and final results of all cutting and patching. Cutting shall be done neatly. Patching shall be of the same material and workmanship as the surrounding finish so that in the final results the patch is not visible. Where pipes, ducts, or other elements are required to pass through or otherwise interfere with any structure, or where notching, boring, cutting, or patching of said structure is necessary, the work shall be done only after the District's Representative's approval has been obtained.

#### **1.06 NOXIOUS OR TOXIC MATERIALS**

- A. The use of noxious or toxic materials for all applications in alterations of work in or adjacent to buildings occupied by the District's personnel shall be done only after submittal of product data if required, proper notification to and approval of the District, via the District's Representative, who may also require that such work be performed on the weekends or other unoccupied days. Such notice shall be given to the District, in writing, via the District's Representative, a minimum of five (5) working days in advance of said use.

#### **1.07 NOISE ABATEMENT**

- A. Residential, offices, classrooms, and other facilities surround the Project area and will be occupied during the course of construction. Every effort shall be made to minimize excessive levels of noise, particularly over prolonged periods of time. Scheduling of particularly noisy construction operations shall be coordinated with the District, via the District's Representative. The District may direct the cessation or other limitation on the Contractor's Work as necessary or appropriate to permit the continuance of instructional activities at or about the Site.
- B. Powder-actuated anchors and fasteners may be used if approved, and where directed by the District's Representative. Blasting of any description is strictly prohibited on any portion of the work of this contract.
- C. Use of radio or other music amplification devices will not be permitted on the Project site.
- D. Use of personal music devices or similar devices which use headphone and/or earplugs will not be permitted on the Project Site.
- E. Refer also to Section 013500 and Section 015000.

**[END OF SECTION 013100]**

01 31 19

## PROJECT MEETINGS

### 1.01 PRECONSTRUCTION CONFERENCE

- A. Prior to mobilization or the commencement of any work on the Project site, and not later than 14 days after issuance of the Notice to Proceed, a pre-construction conference will be scheduled. The pre-construction conference will be conducted by the District's Representative to discuss timing procedures for smooth job progress, items requiring clarification, distribution of documents and correspondence with the District and the District's Representative, and other procedures which are to be followed during performance of the Work.
- B. Location: On the Project site, as designated by the District's Representative.
- C. Attending shall be:
  - 1. The District.
  - 2. The District's Representative.
  - 3. The Architect and the Architect's Consultants, as appropriate.
  - 4. Inspector of Record (IOR).
  - 5. Contractor.
  - 6. Contractor's Project Manager.
  - 7. Contractor's Superintendent.
  - 8. Subcontractors, as appropriate.
  - 9. Others, as appropriate.
- D. Suggested Agenda:
  - 1. Distribution and discussion of:
    - a. List of major subcontractors and suppliers.
    - b. Projected construction schedules.
  - 2. Critical work sequencing.
  - 3. Major equipment deliveries and priorities.
  - 4. Project coordination.
  - 5. Designation of responsible personnel.
  - 6. Procedures and processing of:
    - a. Field decisions.
    - b. Submittals.
    - c. Modifications (Change Orders and Field Orders).
    - d. Proposal Requests, Cost Proposals, Supplemental Information, Requests for Information (RFI).
    - e. Applications for Payment.
  - 7. Adequacy of distribution of Contract Documents.
  - 8. Procedures for maintaining Record Documents.
  - 9. Use of premises for:
    - a. Office, work, and storage areas.
    - b. The District's Representative's requirements.

10. Construction facilities, controls, and aids.
11. Temporary utilities.
12. Tree protection procedures.
13. Erosion control.
14. The District's Operations and Maintenance Department concerns.
15. Housekeeping procedures.
16. Insurance requirements.
17. Wage and hour compliance.
18. Conducting work in operating facility
19. Noise control.
20. Other subjects as appropriate.

## **1.02 PROGRESS MEETING**

- A. During the course of construction, progress meetings will be held to discuss and resolve field problems. The District's Representative shall schedule and administer biweekly progress meetings and specially called meetings throughout progress of the Work.
  1. The District's Representative shall:
    - a. Prepare agenda for meetings.
    - b. Make physical arrangements for meetings.
    - c. Preside at meetings.
    - d. Record minutes, including significant proceedings and decisions. Items not concluded will be retained on the agenda and in the minutes until conclusion is recorded in subsequent minutes. Format of the minutes shall be as mutually agreed upon by the Contractor and the District's Representative.
    - e. Distribute copies of minutes within four (4) working days after each meeting to participants in meeting and to parties affected by decisions made at meeting.
    - f. Attendees taking exception to items contained in the minutes shall state their objections, in writing, within one (1) working day prior to the next scheduled meeting.
  2. Representatives of Contractor, subcontractors and suppliers attending meeting shall be qualified and authorized to act on behalf of entity each represents.
- B. The biweekly time and day of job meetings shall be mutually agreed upon by all parties concerned and once determined the job meeting shall be held every week on the same day and at the same time.
- C. Location: As designated by the District's Representative.
- D. Attending shall be:
  1. The District.
  2. The District's Representative.
  3. The Architect and the Architect's Consultants, as appropriate.
  4. Inspector of Record (IOR).
  5. Contractor.
  6. Contractor's Superintendent and Project Manager.
  7. Subcontractors, as appropriate.
  8. Others, as appropriate.
  - 9.

**1.03 BILLING MEETING**

- A. The Contractor shall conduct the billing meeting each month prior to submittal of the Application for Payment. During this meeting the percentage of completion will be discussed.
- B. Location: As designated by the District's Representative.
- C. Attending shall be:
  - 1. The District's Representative.
  - 2. The District.
  - 3. The Architect and the Architect's Consultants, as appropriate.
  - 4. The Inspector of Record (IOR).
  - 5. Contractor.
  - 6. Contractor's Project Manager.

**1.04 PRE- ROOFING MEETING**

N/A

**1.05 OTHER MEETINGS AND PRE-INSTALLATION CONFERENCES (AS REQUIRED IN OTHER SECTIONS OF THE SPECIFICATIONS)**

- A. The Contractor shall conduct the pre-installation meeting as required in other Sections of the specifications. These meetings are to ensure coordination and installation of components are completed in accordance with the Contract documents.
- B. Location: As designated by the District's Representative.
- C. Attending shall be:
  - 1. The District's Representative.
  - 2. The Architect and the Architect's Consultants, as appropriate.
  - 3. The Inspector of Record.
  - 4. Contractor.
  - 5. Contractor's Project Manager.
  - 6. Contractor's Superintendent.
  - 7. Other subcontractors, installers, suppliers, and manufacturers, as specified.

**1.06 GUARANTEES, BONDS, AND SERVICE AND MAINTENANCE CONTRACTS REVIEW MEETING**

- A. Eleven (11) months following the date of Substantial Completion, the District shall conduct a meeting for the purpose of reviewing the guarantees, bonds, and service and maintenance contracts for materials and equipment.
- B. Attending shall be:
  - 1. The District.
  - 2. The District's Representative.
  - 3. The Architect and the Architect's Consultants, as appropriate.
  - 4. Contractor.
  - 5. Subcontractors, as appropriate.
  - 6. Others, as appropriate.

**[END OF SECTION 013119]**

**1.01 GENERAL**

A. Work of this section includes:

1. Format
2. Content
3. Official Contract Schedule (Project Construction Schedule)
4. Recovery Schedule
5. Float Time
6. Submittals
7. Distribution

B. Related Sections

1. General Conditions – Article 7

**1.02 FORMAT**

The Contractor shall:

- A. Prepare Schedules as a horizontal bar chart or Critical Path Method (CPM) chart with separate bar for each major portion of Work operation, identifying first workday of each week.
- B. Develop a Critical Path Method Schedule demonstrating fulfillment of all contract requirements. The project schedule shall be kept current to be utilized for scheduling, coordinating, monitoring work progress, and for preparation of the monthly payment application for payment under the Contract including all Work of Subcontractors and equipment and material suppliers.
- C. Use Microsoft Project or equivalent for all scheduling activities. Provide all schedule files in .pdf electric file format to Construction Manager.
- D. Sequence of Listings: Show the chronological order of the start of each item of Work.
- E. Scale and Spacing: Provide space for notations and revisions.

**1.03 CONTENT**

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
  1. The Contractor shall develop a Critical Path Method Schedule demonstrating fulfillment of all contract completion milestone requirements. The project schedule shall be kept current to be utilized for scheduling, coordinating, monitoring work progress, and for preparation of the monthly payment application for payment under this Contract including all Work of Subcontractors and equipment and material suppliers.
  2. Schedule shall include activities pertaining to long lead delivery items, fabrication items and submittal of shop drawings and product samples.
  3. Contractor shall designate a scheduler who is trained and experienced in compiling construction scheduling data, in analyzing scheduling data by use of CPM, and in preparation and issuance of periodic reports as required herein. The Contractor's Scheduling Representative shall have direct control and complete authority to act on behalf of the Contractor in fulfilling all project schedule requirements.

- B. Identify each item by specification Section number.
- C. Identify work by separate stages and logically grouped activities.
- D. Provide sub-schedules to define critical portions of the entire Schedule.
- E. Show accumulated percentage of completion of each item, and total percentage Work completed, as of the first day of each month.
- F. Show coordination with District work and other contractors.
- G. Provide cost loads for each activity.
- H. Show the network schedule logic on the schedule form of a CPM (or table if a bar chart is used).

**1.04 OFFICIAL CONTRACT SCHEDULE (aka “Project Construction Schedule”)**

- A. The Critical Path Method Schedule to be prepared by the Contractor pursuant to this section will be a part of a total system for scheduling, reporting work progress, and preparing the monthly payment application.
  - 1. Within ten (10) working days after the Notice to Proceed, the Contractor shall submit to the District’s Construction Manager a digital copy of the complete project schedule for approval or disapproval. In the event the complete project schedule is disapproved, the Contractor shall resubmit a correct schedule within five (5) working days after the notice of disapproval is received by the Contractor.
  - 2. Should the Contract Schedule not be accepted within thirty (30) calendar days after Notice to Proceed, the Contractor may be due provisional progress payment(s) on work performed. It is the responsibility of the Contractor to reconcile such cost information and payments with the Contract Schedule. However, no payment shall be approved after the thirty (30) calendar day period, until the Contract Schedule has been accepted by the District.
  - 3. The initial submittal of the Contract Schedule shall not reflect contract changes of delays. These changes shall be added within the first schedule revision.
  - 4. The initial submittal of the Official Project Construction Schedule shall include, in addition to construction activities, the following:
    - a. The submittal and approval of construction drawings, shop drawings and materials, the procurement and fabrication of major materials and equipment, and their installation and testing.
    - b. Contract requirements dates of all or parts of the Work will be shown including all activities of the Owner that affect the progress of the work.
    - c. Activities of completed work ready for use by next trade, etc..
    - d. Activities relating to different areas of responsibility, such as sub-contracted Work which is distinctly separate from that being done by Contractor directly.
    - e. Different categories of Work as distinguished by craft or crew requirements.
    - f. Different categories of Work as distinguished by materials.
    - g. Distinct and identifiable subdivisions of Work such as structural slabs, beams, or columns.
    - h. Location of Work within the project that necessitates different times or crew to perform.
    - i. Outage schedules of limiting times that existing utility services may be interrupted to construct the Project.
    - j. Items listed separately in Schedule of Values for payment purposes.
    - k. Acquisition and installation of equipment and materials supplied and/or installed by Owner or separate Contractors.
    - l. Material stored on site.
  - 5. Major Equipment/Materials: For all major equipment and materials fabricated or supplied for Project, the Construction Schedule shall show a sequence of activities including:
    - a. Preparation of shop drawings and sample submissions.

- b. Review of shop drawings and samples.
  - c. Shop fabrication, delivery, and storage.
  - d. Erection or installation.
  - e. Test of equipment and materials.
  - f. Required dates of completion.
6. Early Completion: Include in Project Construction Schedule an early completion date for the Project that is no later than Project's required date of completion.
7. Construction activities are to be delineated separately for off-site sewer, site development, earthwork, utilities, roads, parking lots, fences and like Work and each building, separately.
8. The network diagrams shall clearly indicate any work that is planned to be accomplished on a work schedule other than eight (8) hours per day and forty (40) hours per week.
9. The basic concept of CPM network diagramming will be followed to show how the start of a given activity is dependent on the completion of preceding activities and its completion restricts the start of following activities. The diagrams shall show a continuous flow from left to right to left sequences.
10. The following information will be provided in a report for each network activity:
  - a. Activity description.
  - b. Activity duration in work days.
  - c. Activity cost. The Contract Price shall be broken down with the appropriate values distributed to the network diagram activities.
  - d. Working activities and General Conditions activities shall be identified separately.
  - e. Estimated man ours for each activity.
  - f. Activity predecessors.
  - g. Activity successors.
  - h. Activity logic ties.
11. The Contractor shall provide to the District's Representative his schedule data together with associated costs. Schedule information provided by the Contractor shall support completion dates of the contract and the sum of the network activity costs shall equal the total contract price.
12. Schedule review by the District and its agents is limited to ensuring the logic of sequencing is reasonable and Contractor had demonstrated ability to meet contractual milestone and completion dates. Approval of schedule should not be construed as direction from the District to Contractor on how to schedule the work.
13. Subsequent to approval of the contract schedule, the Contractor will provide one (1) digital copy of the network diagrams and supporting documents (Contract Price, Schedule of Values, breakdown, etc.) Monthly update data will be submitted in the same form.
14. After Completion and Acceptance of the Official Project Construction Schedule: The Contractor will provide initial computer reports and weekly and monthly reports thereafter, as follows.
15. Schedule Reports: Initial and subsequent Schedule Reports will contain the following minimum information for each activity and shall be produced at a minimum of once a month:
  - a. Activity Number;
  - b. Activity Description;
  - c. Estimated duration in days;
  - d. Early and late finish dates;
  - e. Percentage of each activity completed as of each report;
  - f. Remaining float/days behind schedule;

- g. Responsibility for activity
16. Cost Reports: Initial and subsequent Cost Reports will include the following information for each activity, sorted by trade activity:
    - a. Activity Number;
    - b. Activity Description;
    - c. Percentage of value of Work in place against total value;
    - d. Total cost of each activity;
    - e. Value of Work in place since last report;
    - f. Value of Work in place to date;
    - g. Value of incomplete Work.
  17. Three-week Window: Weekly, for the progress meeting, the Contractor shall produce a three-week window of the current schedule, indicating activities completed the previous week and activities scheduled for the current and following week.
  18. Payment Progress Reporting: District and Contractor shall select a specified time for updating the Project Schedule at the jobsite each month.
    - a. The District and Contractor and his/her designated scheduling representatives will attend the meeting to review the project progress.
    - b. The schedule shall be the basis for monthly pay requests derived from the joint review of the cost loaded schedule.
    - c. All progress and status information provided by the Contractor shall clearly define the reporting period for which the status is provided.
  19. At the monthly progress review meeting, the Contractor will provide “actual start” and “actual completion” dates for activities that were started or completed during the reporting period. The Contractor and the District will agree upon and assign percent complete values to activities in progress. In the event of a disagreement, the District, or its designated representative, shall make the final decision as to percent completion of each activity.
  20. After joint review, District will process the Contractor’s pay request based on progress from the schedule.
    - a. Payment to the Contractor shall be made from the progress reflected by the Interim or the Contract Schedule.
  21. Time is of the Essence: Whenever it becomes apparent from the current monthly progress review that phases of Work or the Contract Completion Date will not be met, through no fault of the District, the Contractor will take the following actions with no change in the contract amount:
    - a. Increase construction manpower to eliminate an adverse backlog of work.
    - b. Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing to eliminate the adverse backlog of Work.
  22. The Official Project Construction Schedule as approved by the District will be an integral part of the Contract, and will establish interim Contract Completion Dates or milestone dates for the various activities.
  23. Should any activity fall fifteen (15) work days or more behind the Official Project Construction Schedule approved by the District, the District will have the right to order the Contractor to expedite completion of that activity using whatever means are appropriate and necessary, without additional compensation to the Contractor.
  24. Should any activity fall twenty (20) or more work days behind the Official Contract Schedule approved by the District, through no fault of the District, the District will have the right to perform the activity or have the activity performed by whatever method the District deems appropriate. All costs incurred by the

District in connection with expediting such activity under this subparagraph shall be reimbursed promptly to the District by the Contractor.

25. It is expressly understood and agreed that the failure by the District to either order the Contractor to expedite an activity or to expedite the activity by other means, pursuant to the two preceding paragraphs, shall not be considered precedent setting with respect to any other activities which may fall behind the Official Contract Schedule approved by the District; nor will it relieve the Contractor from completion of the Project Work in accordance with the Official Contract Schedule and the Contract Completion Date.
26. District's acceptance of, or its review of, comments about any schedule or scheduling data shall not relieve the Contractor from its sole responsibility to plan for, perform, and complete the Work within the Contract Time. Acceptance of or review of comments about any schedule shall not transfer responsibility for any schedule to District nor imply their agreement with (1) any assumption upon which such schedule is based, or (2) any matter underlying or contained in such schedule.
27. Failure of District to discover errors or omissions in schedules that it has reviewed, or to inform Contractor that Contractor, Subcontractors, or others are behind schedule, or to direct or enforce procedures for complying with the Contract Schedule shall not relieve Contractor from its sole responsibility to perform and complete with Work within the Contract Time and shall not be a cause for an adjustment of the Contract Time or the Contract Sum.

**B. Schedule Revisions**

1. General: Revisions to approved Construction Schedule must be approved in writing by the District and Contractor.
  2. Contractor: Submit requests for revision to schedule to the District together with written rationale for revisions and description of logic for researching Work and maintaining Specific Contractual Milestone Dates listed in Contract Documents.
  3. Proposed revisions acceptable to District will be incorporated into next update of Construction Schedule.
- C. Acceptance: Acceptance of revised schedule by Owner does not relieve Contractor of meeting contractual milestone and completion dates.
- D. Changes initiated by District and implemented by Change Orders which have potential to affect critical dates will require the Contractor to prepare revised schedule for District's concurrence. Once District agrees to revision, Contractor will incorporate it into updated Construction Schedule. Adjustments in schedule completion dates, either for intermediate activities or for Contract as a whole, will be considered for compensation only to extent that there is not sufficient float to absorb the revisions accepted.

**1.05 RECOVERY SCHEDULE**

- A. General: Should updated Project Construction Schedule show Contractor to be fourteen (14) or more calendar days behind schedule at any time during construction, Contractor will prepare Recovery Schedule displayed on CPM schedule, at no additional costs to District. Prepare Recovery Schedule to show plan for returning to original schedule as expeditiously as possible.
- B. Schedule Preparation: Within three (3) days after notice from Construction Manager, prepare and submit to District a Recovery Schedule, incorporating best available information from Subcontractors and others which will permit return to Construction Schedule at earliest possible time. Prepare Recovery Schedule to same level of detail as Construction Schedule and for maximum duration of one (1) month.
- C. Schedule Review: Within five (5) days after notice from Construction Manager, participate in conference with District to review and evaluate Recovery Schedule. Submit revisions necessitated by review for Construction Manger's approval within two (2) days of conference. Use approved Recovery Schedule for its planned duration and basis for return to Construction Schedule.
- D. Schedule Assessment: Five (5) days prior to expiration of Recovery the District and Contractor will meet with Construction Manager to assess effectiveness of Recovery Schedule. As a result of this conference, District will direct Contractor as follows:
  1. Behind Schedule: If District determines Contractor is still behind schedule, District will direct Contractor to prepare another Recovery Schedule for subsequent pay period.

2. On Schedule: If District determines Contractor has successfully complied with provisions of Recovery Schedule, District will direct Contractor to return to use of Project Construction Schedule.

**1.06 FLOAT TIME**

- A. Float or slack time associated with one chain of activities is defined as amount of time between earliest start date and latest start date or between earliest finish date and latest finish date for such activities, as depicted on Project Construction Schedule. Float or slack time is not for exclusive use or benefit of either District or Contractor. However, if float time associated with any chain of activities is expended but not exceeded by any actions attributable to District, Contractor will not be entitled to any extension in the Contract time.

**1.07 SUBMITTALS**

- A. Submit complete electronic Project Construction Schedule within (10) working days after dated of Notice to Proceed.
- B. The Construction Manager will review the Project Construction Schedule provided by the Contractor.
- C. After the District has approved the Project Construction Schedule, the Project Construction Schedule shall become the basis for determining scheduled completion of the project.
- D. Submit updated Progress Schedules with each Application for Payment.

**1.08 DISTRIBUTION**

- A. Distribute copies of Project Construction Schedule to project site file, Subcontractors, suppliers, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in Schedules.

[END OF SECTION 013216]

**1.01 REQUIREMENTS INCLUDED**

- A. All Shop Drawings, Product Data, and Samples, other than in connection with proposed substitutions, shall be submitted to the District's Representative only when specifically required; and the District's Representative will not review any other such submittals. Product Data and Samples for proposed substitutions shall be submitted to the District's Representative in accordance with Section 012500. Contractor shall be responsible for obtaining such copies of Shop Drawings, Product Data, and Samples as it may require for its own use.
- B. All Shop Drawings and Supporting Data, Catalogs, and Schedules shall be prepared in such form that data can be identified with the applicable Specification paragraph. The data shall clearly demonstrate compliance with the Contract Drawings and Specifications and shall relate to the specific equipment to be furnished. Where manufacturer's standard drawings are employed they shall be marked clearly to show what portions of the data are applicable to this Project.
- C. All Shop Drawings and Supporting Data, Catalogs, and Schedules shall be submitted as the instruments of the Contractor who shall be responsible for their accuracy and completeness. The Contractor, subcontractors, or suppliers may prepare these submittals, but the Contractor shall ascertain that submittals meet all of the requirements of the Contract Documents, while conforming to structural, space and access conditions at the point of installation. The Contractor shall check all submittals before submitting them to the District's Representative and shall state that the Contractor has done so in the Contractor's letter (or form) of transmittal.
- D. No partial submittal shall be accepted.

**1.02 RELATED REQUIREMENTS**

- A. Definitions:
  - 1. The terms "Shop Drawings" and "Product Data" as used herein, also include, but are not limited to, fabrication, erection, layout and setting drawings, manufacturers' standard drawings, descriptive literature, catalogs, brochures, performance and test data, wiring and control diagrams, all other Drawings and description data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment, or systems and the positions thereof conform to the Contract Documents.
  - 2. As used herein, the term "manufactured" applies to standard units usually mass-produced. The term "fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements. Shop Drawings shall establish the actual detail of all manufactured or fabricated items, indicate proper relation to adjoining Work, and amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure.
- B. Manufacturers' Instructions: Where any item of work is required by the Contract Documents to be furnished, installed, or performed in accordance with specified product manufacturer's instructions, Contractor shall procure and distribute the necessary copies of such instructions to the District's Representative and all other concerned parties; and Contractor shall furnish, install, or perform the Work in strict accordance therewith.
- C. The District's Representative will normally process submittals within ten (10) working days of receipt.
- D. Submittal Schedule:
  - 1. A schedule for submission of Shop Drawings, Product Data, and Samples by Contractor (the "Submittal Schedule"), and their processing and return by the District's Representative, shall be agreed upon by both parties in order that the items covered by these submittals will be available when needed by the construction process and so that each party can plan its workload in an orderly manner.
  - 2. Contractor shall prepare the Submittal Schedule as per the Submittal Schedule outlined in Section 013300 and coordinate it with the Contract Schedule. No submittals will be processed before the Submittal Schedule has been submitted to and accepted by the District's Representative, except in such cases where the processing of submittals is required before the acceptance of the Submittal Schedule.
  - 3. In preparing the Submittal Schedule, Contractor must first determine from the Contract Schedule the date the particular item is needed for the work. Working backwards, Contractor will add the required number of

days for shipment, time for fabrication, and similar items to determine the date of the first submittal.

4. The Submittal Schedule shall be adjusted to meet the needs of the construction process and the Contract Schedule. Submit one (1) electronic copy of the Submittal Schedule after it is completed and each time it is updated by Contractor.

### **1.03 SHOP DRAWINGS**

- A. Present information required on Shop Drawings in a clear and thorough manner. Identify details by reference to drawing and detail, schedule, or room numbers shown and specified.
- B. The Contractor shall submit, at the Contractor's expense, Design and Shop Drawings, Product Data, and details of all construction, fabrications, equipment, installation, and other appurtenances for the District's Representative's review before such items shall be manufactured or used in the work.
- C. Supplemental specific requirements for Shop Drawings and details are contained in the applicable technical sections of the Specifications. The amount of reviewed copies of Shop Drawings and details submitted to the District's Representative will be returned as described in paragraph 1.07. The Shop Drawings and details will be returned with the actions as defined in paragraph 1.08.

### **1.04 PRODUCT DATA**

- A. Preparation:
  1. Clearly mark each copy to identify pertinent products or models.
  2. Show performance characteristics and capacities.
  3. Show dimensions and clearances required.
  4. Show wiring or piping diagrams and controls.
- B. Manufacturers' standard schematic drawings and diagrams:
  1. Modify the standard schematic Drawings and other diagrams to delete information that is not applicable to the work.
  2. Supplement standard information to provide information specifically applicable to the work.

### **1.05 SAMPLES**

- A. Office Samples shall be of sufficient size and quality to clearly illustrate the following:
  1. Functional characteristics of the products, with integrally related parts and attachment devices.
  2. Full ranges of color, texture, and pattern.

### **1.06 CONTRACTOR'S REVIEW OF SUBMITTALS**

- A. Prior to submittal, the Contractor shall check submittals thoroughly to ascertain that they comply in detail with the Contract Documents.
- B. Review, mark up as appropriate, and stamp Shop Drawings, Product Data, and Samples prior to submission. Submittals shall clearly show that the Contractor has clearly reviewed them for conformance with the requirements of the Contract Documents and for coordination with other Sections.
- C. Determine and verify:
  1. Field measurements.
  2. Field construction criteria.
  3. Catalog numbers and similar data.
  4. Conformance with Contract Documents.
- D. The Contractor shall stamp the submittal that the above has been complied with, that stamp containing the Contractor's firm's name, date, and approval noted. Submittals received from the Contractor without this stamp will be returned disapproved.
- E. All Drawings that are submitted shall be 8-1/2 inches x 11 inches (8-1/2" x 11"), 11 inches x 17 inches (11" x 17"), or the same size as the Contract Drawings.

- F. Coordinate each submittal with requirements of the Work and of the Contract Documents.
- G. Notify the District's Representative in writing, at time of submission, of any changes in the submittals from requirements of the Contract Documents.
  - 1. Substitutions will only be acceptable in accordance with the provisions of Section 012500, "Substitution Procedures."
- H. Begin no fabrication or work which requires submittals until the return of the District's Representative's final reviewed submittals.

#### **1.07 SUBMISSION REQUIREMENTS**

- A. Make submittals promptly in accordance with the Submittal Schedule and in such sequence as to cause no delay in the Work.
- B. Number of Submittals Required:
  - 1. Typically: The Contractor shall submit one (1) electronic copy.
  - 2. Shop Drawings: Submit one (1) electronic copy.
  - 3. Contractor may make prints as it requires for its use and for Subcontractors' use. The Contractor will be billed monthly for reproduction costs incurred for each submission beyond the second submission of data and drawings. Refer to Section 1.08 for the District's Representative's review of submittals.
  - 4. Product Data and Non-Reproducible Submittals: Submit one (1) electronic copy which will be retained by the District and the District's Representative.
  - 5. Samples: Submit the number specified in the Section that requires them. If the number is not specified in the Section, provide two (2) samples.
- C. Submittals shall contain:
  - 1. Complete index with the following information:
    - a. Project title and Contract identification
    - b. Date of submission and dates of any previous submissions. If re-submittal, reference original submittal number and date.
    - c. Submittal number, consecutively ordered.
    - d. Contractor's identification.
    - e. The names of:
      - i. Subcontractor.
      - ii. Supplier.
      - iii. Manufacturer.
  - 2. Identification of the product, with the Specification Section number, title, paragraph and page number or drawing reference where applicable.
  - 3. Field dimensions, clearly identified as such.
  - 4. Item number within each individual submittal.
  - 5. Reference alternate, addendum or change order number as applicable.
  - 6. Relation to adjacent or critical features of the Work or materials.
  - 7. Reference standards, such as ASTM or Federal Specification numbers.
  - 8. Identification of changes from requirements of the Contract Documents.
  - 9. Identification of revisions on re-submittals.
  - 10. An 8-inch x 3-inch (8" x 3") blank space for review stamps.
  - 11. Contractor's stamp, initialed or signed, certifying to the review of the submittal; verification of materials and field measurements and conditions; coordination with related requirements; and

compliance of the information within the submittal with requirements of the Work and of the Contract Documents.

12. State clearly where submittal is substitution or otherwise deviates from the Contract Documents; include justification for substitution or other deviation.

a. Substitutions will only be acceptable in accordance with the provisions of Section 012500, "Substitution Procedures."

13. Nomenclature, legend, symbols and abbreviations used in submittals shall be same as used in Contract Documents.

D. Resubmission Requirements:

1. Shop Drawings and Product Data:

a. Revise Shop Drawings or Product Data and resubmit as specified for the initial submittal.

b. Identify any changes that have been made other than those requested.

c. Note any departures from the Contract Documents or changes in previously reviewed submittals that were not commented upon by the District's Representative.

2. Samples: Submit new Samples as required for initial submittal.

E. Distribution:

1. Distribute electronic copies of Shop Drawings and Product Data, which carry the District's Representative review stamp, to the following locations:

a. Contractor's Project site file.

b. Record documents file maintained by Contractor

c. Subcontractors

d. Supplier or manufacturer

2. Distribute Samples that carry the District's Representative review stamp as directed.

## 1.08 THE DISTRICT'S REPRESENTATIVE REVIEW OF SUBMITTALS

A. After review of each of the Contractor's submissions, the material will be returned to the Contractor with actions defined as follows (also refer to Article 4.7.3 of the General Conditions):

No Exceptions Taken

1. ***Implement Exceptions Noted***

2. ***Revise and Resubmit*** (or Note Markings, or Comment Attached, or Confirm Markings, or Resubmit, must be revised and resubmitted)

3. ***Rejected***

4. "This review is for general conformance with the design concept and with the Contract Documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the Project plans and specifications, or as authorizing departures therefrom. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, and/or selecting fabrication processes, for techniques of assembly, and for performing the work in a safe manner."

B. Review completed by the District's Representative will not constitute acceptance by the District's Representative of any responsibility for the accuracy, coordination and completeness of the Shop Drawings or the items of equipment represented on the Drawings. Accuracy, coordination, and completeness of Shop Drawings shall be the sole responsibility of the Contractor, including responsibility to back check comments, corrections, and modifications from the District's Representative review before fabrication. Acceptance of Shop Drawings does not constitute a Change Order to the specification requirements.

C. It is considered reasonable that the Contractor shall make a complete and acceptable submission to the District's Representative at least by the second submission of data and drawings. The District reserves the right to charge the Contractor and withhold payment due the Contractor to cover additional costs of the District's Representative review beyond the second submission.

- D. The District's Representative will review the Contractor's submittals, such as Shop Drawings, Product Data, and Samples, for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performances of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents.

**[END OF SECTION 013323]**

## 01 35 00

## SPECIAL PROCEDURES

### 1.01 ENVIRONMENTAL/POLLUTION PREVENTION REQUIREMENTS

- A. Contractor shall comply with all air pollution and environmental control rules, regulations, ordinances, and statutes that apply to the project and any work performed pursuant to the contract.
- B. "No person or entity shall discharge or cause to be discharged into the municipal Storm Drain System or waters of the state any materials, including but not limited to Pollutants or waters containing any Pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water..."

### 1.02 AIR QUALITY (reference CEQA requirements)

- C. In an effort to control dust during grading, excavation and construction activities, the Contractor shall comply with the following Monterey Bay Unified Air Pollution Control District (MBUAPCD) dust control measures:
  - 1. Water all active construction areas at least twice daily, or as required to control dust.
  - 2. Cover all trucks hauling dirt, sand, or loose material or require all trucks to maintain at least two feet of freeboard.
  - 3. Sweep streets daily if visible soil material is carried out from the construction site.
  - 4. Apply (non-toxic) chemical soil stabilizers on all unpaved access roads, parking areas and staging areas as well as on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
  - 5. Apply (non-toxic) binders to exposed areas after cut and fill operation and hydroseed area.
  - 6. Cover inactive storage piles.
  - 7. Limit traffic speed on unpaved roads to 15 mph.
  - 8. Plant vegetative ground cover in disturbed areas as soon as possible.
- D. All pre-1994 model year and older diesel equipment shall be retrofitted with EPA-certified diesel oxidation catalyst filters. Contractor shall maintain records of all purchases of diesel oxidation catalyst filters or biodiesel fuel until construction is complete. The Monterey Bay Unified Air Pollution Control District shall have the right to inspect all construction and demolition equipment, as well as the Contractor's records at any time during demolition and construction.
- E. The Contractor shall be responsible for obtaining permits, if required from MBUAPCD.
- F. Refer to Section 015000 for dust palliative requirements.

### 1.02 NOISE REDUCTION (reference CEQA requirements)

- A. The Contractor shall comply with the following noise reduction measures:
  - 1. Limit construction activity to weekdays between 8 AM and 7 PM and Saturdays and holidays between 9 AM and 6 PM, with no construction on Sundays.
  - 2. Locate all diesel-powered equipment more than 115 feet from any residence if the equipment is to operate for more than several hours per day.
  - 3. All equipment shall be in good mechanical condition so as to minimize noise created by faulty or poorly maintained engine, drive train, and other components.
  - 4. All equipment with internal combustion engines shall be equipped with a type of muffled recommended by the vehicle manufacturer.
  - 5. Dirt berm and stockpile materials whenever possible to help reduce noise to adjacent residences.
  - 6. The following equipment should be considered to minimize noise in the surrounding area:
    - a. Earth Removal: Use scrapers as much as possible for earth removal rather than the noisier loaders

and hauling trucks.

- b. Backfilling: Use a backhoe for backfilling, as it is less costly and quieter than either dozers or loaders.
- c. Ground Preparation: Use a motor grader rather than a bulldozer for final grading.
- d. Building Construction: Power saws should be shielded or enclosed where practical to decrease noise emissions. Nail guns should be used where possible as they are less noisy than manual hammering.

B. Refer to Section 013100 and 015000 for noise control and abatement.

### **1.03 TREE PRESERVATION (reference CEQA requirements)**

- A. Any conflicts between tree protection areas, or designated environmentally sensitive areas, with the geotechnical report or work by others shall be brought immediately to the attention of the District's Representative and Construction Manager.
- B. Preservation and maintenance of trees not designated for removal is essential to the successful completion of the Work. Refer to Section 015639 for requirements for tree protection, identification of trees to be removed, and compensation for loss of trees not designated for removal.
- C. All trees and other plant materials on the site or on an adjacent property, except those indicated to be removed shall be protected from all injury. Contractor shall take all necessary precautions to preserve the trees. Refer to requirements of Section 015639.
  - 1. For trees less than 12 inches in diameter, wrap trunks with protective materials
  - 2. For trees 12 inches in diameter or greater, install protective fencing .50 – .75 feet from the trunk per inch trunk diameter; work within the protected area shall be overseen by a qualified arborist or biologist.
  - 3. Bridge or tunnel under roots greater than four inches in diameter where exposed. Smaller roots shall be cut by manually digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades, or other approved root pruning equipment. Any roots damaged during grading or excavation shall be exposed to sound tissue and cut cleanly.
- D. No stockpiling, temporary building, or any other temporary obstruction shall be located within the drip line (outside edge of tree branching) of any existing tree that is to remain.
- E. No pruning of trees shall be done, except by specific instructions and approval of the District's Representative.
  - 1. Advance written notice shall be given to the District's Representative if roots of a diameter greater than 1 inch must be cut.
  - 2. Roots shall be cut by hand pruning, not heavy machinery. They shall be cut cleanly. Exposed roots shall be covered and kept moist by dampened burlap until they are covered by soil.
- F. Soil within the spread of the tree branches shall not be disturbed. Avoid soil compaction, parking of vehicles or heavy equipment, stockpiling of construction materials, and / or dumping of material under the drip line of trees.
- G. Preservation and maintenance of all areas around existing trees are of utmost importance. Erosion or construction-related disturbances of any of these areas is strictly prohibited, and all measures within the Contract Documents that pertain to protection of these adjacent areas shall be strictly enforced.

### **1.04 Spill abatement and Erosion control (reference CEQA requirements & SWPP / section 015713)**

- A. Grading is not allowed within 50 feet of the high water mark of streams on campus. If disturbance is required, obtain a Section 404 permit from the District who will obtain the required permit from the USACE and California Dept of Fish and Game.
- B. Prepare a spill abatement plan and arrange for a pre construction worker orientation meeting to discuss the spill management plan. Workers shall be informed of the importance of preventing spills, and of the appropriate measures to take should a spill occur. The materials necessary for the initial response to a spill shall be kept at an easily accessible location on the project site. The erosion plan should include but not be limited to the following Best Management Practices.
  - 1. Temporary mulching, seeding or other suitable stabilization measures to protect exposed erodible area

during construction

2. Earth or paved interceptors and diversions installed at the top of cut or fill slopes where there is a potential for erosive surface runoff.
  3. Erosion and sediment control devices for all grading and filling. Control devices and measures could include but are not limited to energy absorbing structures or devices to reduce the velocity of runoff water.
  4. Within thirty days after completion of grading, all surfaces disturbed by vegetative removal, grading, or other construction activity that alters vegetative cover, should be revegetated to control erosion, unless covered with impervious or other improved surfaces authorized by approved plans. Erosion controls may include any combination of mechanical or vegetative measure, including but not limited to those described in USDA Soil Conservation Service Bulletin 347.
- C. Contractor shall prepare and file a Notice of Intent (NOI) to the RWQCB prior to grading activities. Contractor shall propose and implement control measures that are consistent with the State construction Storm Water general Permit and with recommendation and policies of the local agency and the Regional Water Quality Control Board. The Contractor shall provide an acceptable SWPP which incorporates storm water Best Management Practices to control runoff, erosion and sedimentation from the site. The SWPP is intended to include the following objectives.
1. To help identify the sources of sediments and other pollutants that affect the quality of storm water discharges and
  2. To describe and ensure the implementation of practices to reduce sediment and other pollutants in storm water discharges.
- D. The SWPP must include Best Management Practices, which address source reduction and, if necessary shall include practices which require treatment. The SWPP should be consistent with the terms of the State Construction Storm Water General Permit, policies and recommendation of the local urban runoff program (city and / or county) and recommendation of the Regional Water Control Board.
- E. Refer to section 015713 'Erosion Control' for further information.

## **1.05 HAZARDOUS MATERIAL SPILL PREVENTION (reference CEQA requirements & SWPP / BMP)**

### **A. General**

1. All hazardous materials shall be stored so that they are protected from inclement weather and vandalism.
2. Motor vehicles shall not be fueled on the Project site.
3. Spill containment measures must be made prior to fueling when fueling equipment other than motor vehicles.
4. Vehicle maintenance, other than emergency repairs, shall not be performed on the Project site.
5. The Contractor shall maintain all emergency spill containment supplies.
6. See Section 013300, 1.07, for the requirements for Material Safety Data Sheets (MSDS).

### **B. Spill Reporting**

1. Any spill or discharge of a liquid hazardous substance used on the Project site (paint, solvent, petroleum product, etc.) shall be reported as follows:
2. Spills greater than one quart shall be immediately reported to the District's Representative and the District's Project Inspector.
3. Spills greater than five gallons shall be immediately and simultaneously reported to the District's Representative and the District's Project Inspector.
4. Any spill or discharge of a quantity (or character) of material that is considered to be an emergency shall be immediately reported first by dialing 911 to activate the appropriate emergency response, and next reported to the District's Representative and the District's Project Inspector.

### **C. Spill Response**

1. Spills shall be diked or contained by trained personnel to prevent the spilled hazardous material from

entering the storm water system or leaving the Project site.

2. Spills of less than five (5) gallons shall be absorbed using an appropriate material. All contaminated materials shall be containerized and removed from Campus in an acceptable manner.
3. Spills in excess of five (5) gallons shall be absorbed using an appropriate material and placed in containers under the direction of Emergency Response personnel.
4. Any contaminated soil shall be removed by the Contractor and replaced with acceptable fresh soil.
5. Appropriately trained personnel shall respond utilizing safe practices.

#### **1.06 REMOVAL AND DISPOSAL OF WASTE MATERIALS (reference CEQA requirements)**

- A. Solid Waste: All refuse and debris, combustible and non-combustible, resulting from the process of clearing, demolition and construction, shall be removed from the District's property and disposed of at a legal refuse site. Contractor shall not make use of any refuse container belonging to the District.
- B. Toxic Liquid Waste: Solvents, oils and any other material which may be harmful to plant life shall be disposed of in containers and removed from the District's property. At the completion of the work, any contaminated soil shall be removed as directed by the District's Representative and replaced with acceptable fresh soil by Contractor at no expense to the District.
- C. Hauling: Hauling over public streets and campus roads shall be done only with vehicles and loads that are normally permitted on State highways. "Off road" type hauling equipment and illegal State loads will not be permitted.

#### **1.07 HAZARDOUS MATERIALS PROCEDURES (reference 007313 / 017310 / 017329)**

- A. Prior to demolition and / or renovation activities, the contractor shall apply for a demolition permit from the Monterey Bay Unified Air Pollution Control District (MBUACD). The Contractor shall comply with MBUAPCD National Emission Standards for Hazardous Air Pollutants policies and regulation for removal and disposal of contaminated material.
- B. During demolition and renovation activities, sheeting or other suitable barriers shall be used to limit release and dispersal of particulate matter in the air. Refuse building material shall be transferred to sealed containers or covered truck beds for transport to prevent blowing or spillage of materials.
- C. Any renovation activities requiring lead stripping and lead based paint debris shall be cleaned up and disposed of by properly trained and protected personnel and a licensed Contractor
- D. Except as otherwise specified, in the event Contractor encounters on the Project site material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), or other hazardous materials which have not been rendered harmless, Contractor shall immediately stop work in the area affected and report the condition to the District via the District's Representative in writing. The work in the affected area shall not thereafter be resumed except by written agreement of the District and Contractor if in fact the material is asbestos, PCB, or other hazardous materials and has not been rendered harmless. The work in the affected area shall be resumed in the absence of asbestos, PCB, or other hazardous materials, or when such materials have been rendered harmless.

#### **1.08 ARCHAEOLOGICAL REQUIREMENTS (reference CEQA requirements)**

- A. The District knows of no prehistoric cultural deposits on the Project site, however, if any indicators of the presence of prehistoric cultural deposits are discovered during construction, earth-disturbing work will be halted in an area with a radius of 150 feet (50 meters) around the suspected prehistoric deposits. Notify the District's Representative immediately. The District's Representative will consult with an archaeologist in accordance with applicable laws and regulations. If deemed appropriate, The District will conduct data and artifact recovery during the period when construction work is halted.
- B. The District knows of no human remains on the Project site, however, if any human remains are discovered during construction, earth-disturbing work will be halted in an area with a radius of 150 feet (50 meters) around the human remains. Notify the District's Representative in writing immediately. The District's Representative will inform and consult with an appropriate representative of Native American Indian groups and the County Coroner, as required by state law. Work is to stop until authorization to proceed is given

#### **1.09 PUBLICITY RELEASES**

Contractor shall not release any information, story, photograph, plan or drawing relating to the Project to anyone, including the press or

other public communications media, except as submitted and approved for release by the appropriate public relations authority of the District.

**[END OF SECTION 013500]**

## 01 41 00

# REGULATORY REQUIREMENTS

### 1.01 GENERAL

- A. The Work shall be performed in accordance with applicable code requirements and applicable requirements of all other regulatory agencies, including, but not limited to, the following:
1. Federal Occupational Safety and Health Administration.
  2. National Electrical Code 2008; 2010 CEC.
  3. Uniform Mechanical Code 2009; 2010 CMC.
  4. Uniform Plumbing Code 2009; 2010 CPC.
  5. International Building Code 2009; 2010 CBC.
  6. California Code of Regulations (CCR), including Title 24 (2009 edition).
  7. California Health and Safety Code.
  8. State of California Business and Transportation Agency, Department of Transportation (CALTRANS) Standard Specifications.
  9. Erosion Control Standards, District.
  10. Uniform Federal Accessibility Standards (UFAS). Note: The more stringent provision of the CCR or UFAS shall apply.
  11. Coastal Prairie Enhancement and Management Plan.
  12. Rules and regulations of private and public utilities.
- B. Unless otherwise specified, specific references to codes, regulations, standards, manufacturers' instructions, or requirements of regulatory agencies, when used to specify requirements for materials or design elements, shall mean the latest edition of each in effect at the date of submission of bids, or the date of the Change Order or Field Order, as applicable.

### 1.02 CONFLICTS

- A. If a conflict exists between referenced regulatory requirements or between referenced regulatory requirements and the Contract Documents, Contractor shall notify the District's Representative in writing and request that the conflict be resolved.
- B. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations and without such notice to the District's Representative, Contractor shall assume full responsibility therefore and shall bear all costs attributable thereto.
- C. The Contract Documents take precedence over statutory requirements or standards when requiring materials of higher quality or performance, or larger sizes or capacity, or greater protection, safety or quantity than required by said codes or standards. This shall not operate to allow deviations from Code requirements.
- D. Modifications to published statutory requirements currently adopted or enforced by regulating agencies having jurisdiction shall take precedence over said published requirements.
- E. Statutory requirements or standards take precedence over Contract Documents when requiring materials of higher quality or performance, or larger size or capacity, or greater protection, safety or quantity than required in the Contract Documents. This shall not operate to allow deviations from requirements for prior approvals and other provisions specified.
- F. Conflicts within Contract Documents and/or between the specifications, drawings and addendum(s); the more stringent requirement shall govern.

### **1.03 RULES AND REGULATIONS**

- A. All standards, rules, regulations and orders concerning this Work, when applicable, are herein included in these Specifications.
  - 1. When the Specifications call for materials or construction of a better quality or larger sizes than required by such laws, ordinances, rules and regulations, the provisions of the Specifications shall govern.
  - 2. Contractor shall furnish without any extra charge any additional material and/or labor when required by compliance with such laws, ordinances, rules and regulations, though the work be neither mentioned in these particular Specifications nor shown on the Drawings.

### **1.04 THE DISTRICT'S INSPECTION**

- A. The District's Inspector will make inspections at various times throughout the progress of the Project. These inspections will include all applicable code compliance items and any other items the District deems necessary to assure compliance with the Contract Documents.
- B. Contractor shall not proceed to cover up work that has not been inspected by the District's Inspector and has been deemed as being satisfactory. The Contractor without adjustment of the Contract Price or the Contract Time shall provide the District's Inspector with access to the Work, wherever located and whether in place, in fabrication, in transit or in progress.

### **1.05 PERMITS AND FEES**

- A. Contractor shall not be required to obtain or pay for a building permit, electrical permit, plumbing permit, mechanical permit, or grading permit.
- B. Deferred Approval items: the Contractor is responsible for engineering fees associated with submittals to DSA for approval of the Contractor's deferred approval items.
- C. No connections to city-owned utilities are required for this Project.
- D. Refer also to the General Conditions.

### **1.06 SAFETY**

- A. In accordance with State and Federal law and generally accepted construction practices, Contractor shall be solely and completely responsible for conditions of the Project site, including safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal working hours.
- B. The Contractor is hereby informed that work on this Project could be hazardous. Contractor shall carefully instruct all personnel working in potentially hazardous work areas as to potential dangers and shall provide such necessary safety equipment and instruction as is necessary to prevent injury to personnel and damage to property. Special care shall be exercised relative to work in trenches and manholes.
- C. The Contractor shall comply with all safety standards, regulations and codes. All work, including temporary construction, shall be in full accord with the latest orders of the Division of Industrial Safety of the State of California Occupational Safety & Health Act (Cal-OSHA) and Federal Occupational Safety & Health Act (OSHA). Should more than one standard apply, the Contractor shall adhere to the most stringent. The Contractor shall carefully instruct all personnel of the potential dangers of working in potentially hazardous areas and performing potentially hazardous work. The Contractor shall provide appropriate safety equipment sufficient to protect personnel from injury and illness, and property from damage.
- D. The services of the District's Representative or the District's Inspector in conducting construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's work methods, equipment, bracing or scaffolding or safety measures, in, on, or near the Project site.
- E. It shall be the Contractor's responsibility to provide personal protective equipment appropriate to the work being performed such as: Hard Hats (Safety Hats); foot protection; hearing protection; respiratory protection; safety glasses/face protection; hand protection. Other personal protective equipment must be worn at all times when required by the work being performed.
- F. Safety Hats: Contractor shall be responsible for enforcing the requirement that safety hats be worn by all persons on the Project site at all times, and Contractor shall provide adequate signs at appropriate locations throughout the Project site setting forth this requirement. In addition, Contractor shall provide an adequate number of safety hats for the use of authorized visitors and shall be responsible for the distribution thereof before allowing any visitor to enter the

Project site.

- G. Contractor shall provide and maintain all fencing, traffic-rated trench plating, barricades, guard rails, bridges, warning signs, lights, paved paths, and the like as are necessary to protect Contractor's own personnel, PGUSD staff, students, representatives, and outside public from the Project site.
- H. The security and safety of the scaffolding, ladders, ramps, temporary stairs, etc., shall be the responsibility of Contractor. Only trained operators shall operate hoists. All such equipment shall meet all applicable safety code requirements.
- I. The Contractor shall have a written Hazard Communication Program and instruct all employees and employees of lower tier contractors in its provisions.
- J. The Contractor shall have an effective Injury and Illness and Prevention Program and instruct all employees in its provisions.
- K. The Contractor shall post and instruct all employees and employees of lower tier contractors in emergency provisions, including telephone numbers, applicable to the particular work-site(s).
- L. The Contractor must provide lighting adequate for the work being performed.
- M. Compressed gas cylinders must be handled and stored in an upright position, and flammables must be stored separately from oxidizers.
- N. Control hazards presented by the work and Project site by providing barricades, fencing, guard rails, bridges, lighting, signage, traffic-rated trench plating, traffic control, dust control, refuse containment, safe material storage, and/or other methods necessary to protect employees, visitors and the public. See Section 015000.
- O. Hand held and Portable Powered tools must be maintained, guarded and stored so as not to create a hazard during use or storage
- P. Welding and cutting must be planned and performed to eliminate fire, electrical and employee hazards.
- Q. All electrical equipment and its use shall be free from recognized hazards that are likely to cause death or serious physical harm to employees.
- R. No equipment shall be used without a Ground Fault Circuit Interrupter.
- S. Powder actuated tools will be used only by employees who have been trained in their operation. Signs shall be placed about the area alerting other employees and visitors that these tools are in use. Measures shall be taken to prevent injury to other employees in the vicinity. The operator shall wear eye/face and hearing protection. Tools and charges shall be under the control of the operator at all times.
- T. Pneumatic tools shall be positively secured to the hose to prevent whip. Safety devices shall be required on all such tools to prevent them from being fired unless in contact with a solid surface. All employees using such tools and all employees in the vicinity shall be provided with eye/face and hearing protection.
- U. A safety fastener will be used to secure all compressed air lines against inadvertent uncoupling and whipping.
- V. Refer also to the General Conditions.

## **1.07 CONSTRUCTION SAFETY ORDERS**

- A. Pursuant to Labor Code 6707, Contractor shall include in Contractor's Base Bid all costs incident to the provision of adequate sheeting, shoring, bracing or equivalent method for the protection of life or limb which shall conform to applicable Federal and State safety orders.
- B. Before beginning excavation of any trench or trenches five (5) feet or more in depth, Contractor shall submit to the District's Representative a detailed "Project specific" plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation. The proposed plan shall comply with the standards established by the State of California Construction Safety Orders and Title 24 of the California Administrative Code. If the detailed plan varies from such shoring system standards, it shall be prepared by a registered civil or structural engineer whose name and registration number shall be indicated on the Drawing. If a dispute arises as to whether a registered civil or structural engineer must prepare the plan, the District's Representative's determination of the matter shall be final and conclusive on Contractor and the District. The cost of required engineering services shall be borne by Contractor and shall be deemed to have been included in the amount bid for the work as stated in the Agreement. Neither the review nor approval of any plan showing the design of shoring, bracing, sloping, or other

provisions for worker protection, shall relieve Contractor from Contractor's obligation to comply with Construction Safety Order Standards and Title 24 of the California Code of Regulations for the design and construction of such protective work, and Contractor shall indemnify the District and the District's Representative from any and all claims, liability, costs, actions and causes of action arising out of or related to the failure of such protective systems. Contractor shall defend the District, its officers, employees and agents and the District's Representative in any litigation or proceeding brought with respect to the failure of such protective systems.

- C. Contractor shall not submit for review a shoring, sloping or protective system less effective than required by the Construction Safety Orders of the Division of Industrial Safety.

**[END OF SECTION 014100]**

# 01 41 00.01      ADDITIONAL REQUIREMENTS FOR DSA-REVIEWED PROJECTS

## 1.01      GENERAL

- A. The following additional requirements apply to this Project if it is being reviewed by the Division of the State Architect (DSA).
- B. A copy of Part I and Part II of Title 24 shall be kept and available in the field during construction.

## 1.02      ADDITIONAL REQUIREMENTS

- A. In addition to the duties specified in the Contract Documents, the duties of the Contractor shall be in accordance with the requirements specified in Section 4-343 of Part 1, Title 24, California Code of Regulations (CCR)
- B. In addition to the duties specified in the Contract Documents, the duties of the Architect and the Architect's consultants shall be in accordance with the requirements specified in Section 4-333(a) and 4-341 of Part 1, Title 24, CCR.
- C. DSA is not subject to arbitration proceedings.
- D. Notify DSA at start of construction in accordance with Section 4-341 of Part 1, Title 24, CCR.
- E. All addenda and change orders shall be submitted for DSA approval. Do not begin any work under an addendum or change order until DSA approval is obtained. Addenda and change orders shall be in accordance with Section 4-338 of Part 1, Title 24, CCR.
- F. Do not begin work under a written order until a change order has been submitted to and approved by DSA in accordance with Section 4-338 or Part 1, Title 24, CCR. Substitutions effecting structural, fire/life/safety or access compliance shall be submitted as change orders for DSA approval. The Contractor will be responsible for the additional architectural, engineering, and construction and/or project management costs associated with the review and regulatory processing of these substitutions.
- G. Contractor shall submit verified reports in accordance with Sections 4-341 and 4-343 of Part 1, Title 24, CCR.
- H. DSA may supervise construction, reconstruction, or repair in accordance with Section 4-334 of Part 1, Title 24, CCR.
- I. Construction shall be observed and inspected by a full-time Project Inspector (IOR) approved by DSA in accordance with Section 4-333(b) and 4-342 of Part 1, Title 24, CCR.
- J. Testing requirements of the DSA approved Owner's Testing Laboratory shall be in accordance with Section 4-335 of Part 1, Title 24, CCR.
- K. Special Inspection may include, but is not limited to; masonry construction, glued laminated lumber, wood framing using timber connectors, ready-mixed concrete, structural steel, high strength steel bolt installation, welding, pile driving, and mechanical and electrical work shall be as required by Section 4-333(c) of Part 1, Title 24, CCR. The Owner will pay for the costs of special inspection.

[END OF SECTION 014100.01]

# 01 42 13 ABBREVIATIONS AND SYMBOLS

## 1.01 ABBREVIATIONS

A. The following abbreviations of organizations may be used in the Contract Documents and wherever the following terms are used, the intent and meaning shall be as follows:

AASHTO .....	American Association of State Highway and Transportation Officials
ABMA.....	American Boiler Manufacturers Association
ACI.....	American Concrete Institute
ADA.....	Americans with Disabilities Act
AGA.....	American Gas Association
AGMA .....	American Gear Manufacturers Association
AIA .....	American Insurance Association (formerly National Board of Fire Underwriters)
AISI.....	American Iron and Steel Institute
AISC.....	American Institute of Steel Construction
API.....	American Petroleum Institute
AREA.....	American Railway Engineering Association
ANSI .....	American National Standards Institute (formerly United States of America Standards Institute)
APA.....	American Plywood Association
API.....	American Petroleum Institute
ASCE .....	American Society of Civil Engineers
ASHRAE.....	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME.....	American Society of Mechanical Engineers
ASTM.....	American Society of Testing and Materials
AWPA.....	American Wood Preservers' Association
AWS.....	American Welding Society
AWWA .....	American Water Works Association
CALTRANS.....	State of California Department of Transportation
CBC .....	California Building Codes (Title 24)
CBM.....	Certified Ballast Manufacturers Association
CBR.....	California Bearing Ratio
CSS .....	California Department of Transportation Standard Specifications
CTI .....	Ceramic Tile Institute of America
DFPA .....	Douglas Fir Plywood Association
DOT .....	Department of Transportation
ETL .....	Electrical Testing Laboratories, Inc.
FCC.....	Federal Communications Commission
FM.....	Factory Mutual Engineering and Research
FS.....	Federal Specification (General Services Administration)
IEEE.....	Institute of Electrical and Electronic Engineers
IES.....	Illuminating Engineering Society
IESNA.....	Illuminating Engineering Society of North America
ISA .....	Instrument Society of America
MSS.....	Manufacturer's Standardization Society of the Valve and Fittings Industry
NEC.....	National Electric Code (by NFPA)
NEMA.....	National Electrical Manufacturers Association
NFPA .....	National Fire Protection Association
NOAA .....	National Oceanographic and Atmospheric Association
OSHA.....	Occupational Safety and Health Administration
SMACNA .....	Sheet Metal and Air Conditioning Contractors National Association, Inc.
SSPC .....	Steel Structures Painting Council

UBC .....Uniform Building Code with California Amendments  
UFC.....Uniform Fire Code  
UL .....Underwriters Laboratories  
UMC .....Uniform Mechanical Code  
UPC.....Uniform Plumbing Code  
WIC.....Woodwork Institute of California

B. Additional abbreviations, used on the Drawings, are listed thereon.

**1.02 SYMBOLS**

Symbols and graphic symbols, used only on the Drawings, are shown thereon.

[END OF SECTION 014213]

# 01 42 16 DEFINITIONS

The following terms, when used on the Drawings or in the Specifications, shall have the following meanings:

<u>TERM</u>	<u>MEANING</u>
ACCESS .....	Unobstructed and continuous vehicular and pedestrian passage.
APPROVAL / ACCEPTANCE .....	"The approval and acceptance of the District's Representative."
AS DIRECTED .....	"As directed by the District's Representative."
AS REQUIRED .....	"As required by Applicable Code Requirements; by good building practice; by the condition prevailing; by the Contract Documents; by the District; or by the District's Representative."
AS SELECTED .....	"As selected by the District's Representative."
BY OTHERS .....	Work on the Project that is outside the scope of Work to be performed by Contractor under the Contract, but will be performed by the District, Separate Contractors, or other means.
CONTRACTOR-INSTALLED .....	Delivered and installed by Contractor as part of the Work."
COST PROPOSAL .....	Contractor's cost breakdown in response to a Proposal Request.
DAYS .....	The word "days" used herein or in other Contract Documents shall mean calendar days unless specifically noted otherwise. A "day" shall mean a calendar day of 24 hours, including each and every day of the year.
THE DISTRICT .....	The term "the District" refers to "The Pacific Grove Unified School District" as Owner and their designated representative / Project Manager.
THE DISTRICT'S INSPECTOR AND INSPECTOR OF RECORD .....	Representative of the District who will perform inspections of the work for code compliance and quality assurance reporting in addition to those observations and inspections performed by The District's Representative. The District's Inspector may be the District's Representative or may be another representative of the District. If the District's Inspector and the District's Representative are not the same, the Inspector will have only that authority as specifically stated herein.
DISTRICT-FURNISHED .....	"To be furnished by the District at the District's cost."
DISTRICT-FURNISHED, CONTRACTOR INSTALLED .....	"To be furnished by the District at its cost and installed by the Contractor as part of the Work."
DISTRICT'S REPRESENTATIVE .....	The term "District's Representative" refers to the Construction Manager.
FURNISH .....	"Supply only, not install."
INSTALL .....	"Install or apply only, not furnish."
LETTER OF INSTRUCTION .....	A written document (supplemental instruction) prepared by the District's Representative which clarifies or interprets the requirements of the Contract Documents or makes minor changes to the work which do not require a change in the Contract Sum and/or Time and which are not inconsistent with the intent of the documents. A Letter of Instruction is prepared on the District's Representative's standard form.

PROJECT..... The specific facility to be constructed under these Contract Documents.

PROJECT SITE..... Geographical location of the Project.

PROPOSAL REQUEST..... A written document prepared by the District's Representative which requests a quotation for changes in the Contract Sum and/or Time incidental to proposed modifications to the work. A proposal request is prepared on the District's Representative's standard form.

PROVIDE ..... "Furnish and install, including provision of all related work."

REASONABLY REQUIRED..... The term "reasonably required" shall include those items which may not specifically be indicated or noted in these documents, but which can reasonably be assumed to be necessary to complete the work of a particular system.

REQUEST FOR INFORMATION

(RFI)..... A request made in writing for clarification or additional information to the District's Representative (Refer to Section 012613).

SHOWN..... "As indicated on the Drawings."

SPECIFIED ..... "As written in the Contract Documents."

SUBMIT ..... "Submit to the District's Representative."

SUBMITTALS..... Detailed fabrication and setting drawings, samples, material lists, and manufacturer's equipment brochures setting forth in detail the Work as it is to be performed by Contractor.

1. Items marked "by the District" or "N.I.C." on the Drawings are not to be furnished or installed as part of this Contract.
2. "As permitted," "permitted", "acceptable", "satisfactory", means by or to the District's Representative.
3. Refer to the General Conditions for additional definitions.

**[END OF SECTION 014216]**

# 01 42 19 REFERENCE STANDARDS

## 1.01 STANDARD SPECIFICATIONS

Standard Specifications, such as HUD, ASTM, ANSI, AASHTO, AWWA, AISC, Commercial Standards, Federal Specification, NBFU, NEMA, UL, and the like, incorporated in the Contract Documents by reference, shall be those of the latest edition at the time of receiving bids, unless otherwise specified. Manufacturers, producers and their agents of materials required shall have such specifications available for their reference.

## 1.02 STANDARDS AND REFERENCES

- A. In effect on Date of Invitation for Bids: Any material specified by reference to the number, symbol or title of a specific standard such as commercial standard, a Federal Specification, a trade association standard or other similar standard, shall comply with the requirements in the latest revision thereof and any amendments or supplement thereto in effect on the date of Invitation for Bids.
- B. Incorporation into Specifications: The standards referred to except as modified in the Specification shall have full force and effect as though printed in these Specifications. These standards are not furnished to bidders, since manufacturers and trades involved are assumed to be familiar with their requirements. The District's Representative will furnish upon request information as to how copies of the standards referred to may be obtained.

## 1.03 QUALITY ASSURANCE

- A. For products or quality specified by association, trade or Federal standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on the date of receipt of bids, unless otherwise noted.
- C. Obtain copies of standards when required by the Contract Documents. Maintain copies at the Project site during submittals, planning, and progress of the specific work, until substantial Completion.
- D. Should specified reference standards conflict with the Contract Documents, required clarification from the Construction Manager before proceeding.
- E. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or reference otherwise in any reference document.

## 1.04 "CALIFORNIA STANDARD SPECIFICATIONS"

Wherever in these Specifications reference is made to the "California Standard Specifications," "CSS," or "Standard Specifications" reference shall be made to Specifications entitled "State of California, Department of Transportation, Standard Specifications," latest edition, and which is incorporated herein and made a part hereof by reference thereto.

## 1.05 AVAILABILITY OF STANDARD SPECIFICATIONS

Where reference is made to standards or references that are published by various associations, institutes, corporations or government agencies, those specifications may be obtained from the publisher. Names and addresses of those publishers are included below. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate as of the date of the Contract Documents. Neither the District nor the District's Representative shall assume any responsibility for either errors or omissions in the following list:

American Association of State Highway and Transportation Officials 444 North Capitol St.,  
Suite 225  
Washington, DC 20001  
(202) 624-5800

American Concrete Institute PO Box 19150  
Detroit, MI 48219  
(313) 532-2600

American Gas Association 1515 Wilson Blvd.  
Arlington, VA 22209  
(703) 841-8400

American Insurance Association 85 John Street  
New York, NY 10038  
(212) 669-0400

American Institute of Steel Construction 400 N. Michigan  
Ave., 8th Floor Chicago, IL 60611  
(312) 670-2400

American Iron and Steel Institute 1000 16th St., NW  
Washington, DC 20036  
(202) 452-7100

American National Standards Institute 655 15th Street, NW  
Suite 300  
Washington, DC 20015  
(202) 639-4090

American Plywood Association PO Box 11700  
Tacoma, WA 98411  
(206) 565-6600

American Petroleum Institute 1220 L Street, NW  
Washington, DC 20005  
(202) 682-8000

American Society of Heating, Refrigerating and Air Conditioning  
Engineers  
1791 Tullie Circle, NE Atlanta, GA 30329  
(404) 636-8400

American Society of Mechanical Engineers 345 East 47th St.  
New York, NY 10017  
(212) 705-7722

ASTM  
1916 Race St.  
Philadelphia, PA 19103  
(215) 299-5400

American Wood-Preservers' Association PO Box 849  
Stevensville, MD 21666  
(301) 643-4163

American Welding Society  
PO Box 350140; 550 Le Jeune Rd., NW  
Miami, FL 33135  
(305) 443-9353

American Water Works Association 6666 W. Quincy Ave.  
Denver, CO 80235  
(303) 794-7711

Architectural Woodwork Institute 2310 S. Walter  
Reed Drive Arlington, VA 22206  
(703) 691-9100

(State of) California Department of Transportation Publication Distribution  
Unit  
1900 Royal Oaks Drive Sacramento, CA 95819

(916) 445-3520

Certified Ballast Manufacturers Association Hanna Building, Suite  
772  
1422 Euclid Avenue  
Cleveland, OH 44115  
(216) 241-0711

Ceramic Tile Institute 700 North Virgil  
Ave. Los Angeles, CA 90029  
(213) 660-1911

Department of Transportation 400 Seventh St.,  
SW Washington, DC 20590  
(202) 426-4000

ETL Testing Laboratories, Inc. PO Box 2040  
Route 11, Industrial Park Cortland, NY 13045  
(607) 753-6711

Factory Mutual Engineering and Research 1151 Boston-  
Providence Turnpike  
Norwood, MA 02062  
(617) 762-4300

Federal Communications Commission 1919 M Street, NW  
Washington, DC 20554  
(202) 632-7000

Federal Specification (General Services Administration) Specifications Unit (WFSIS)  
7th and D Streets, SW Washington, DC 20406  
(202) 472-2205

Institute of Electrical and Electronic Engineers, Inc. Illuminating  
Engineering Society of North America 345 E. 47th St.  
New York, NY 10017  
(212) 705-7926

Instrument Society of America  
PO Box 12277; 67 Alexander Drive Research Triangle  
Park, NC 27709 (919) 549-8411

International Society of Aboriculture (ISA) 303 West District  
P.O. Box 908  
Urbana City, Illinois 61801  
(217) 328-2032

Manufacturers Standardization Society of the Valve and Fittings Industry 127 Park Street, NE  
Vienna, VA 22180  
(703) 281-6613

National Arborist Association (NAA)  
P.O. Box 1094  
Amherst, New Hampshire 30301 (603) 673-3311

National Electrical Manufacturers Association 2101 L St., NW  
Suite 300  
Washington, DC 20037  
(202) 457-8400

National Fire Protection Association Batterymarch Park  
Quincy, MA 02269  
(617) 770-3000

National Oceanographic and Atmospheric Association (NOAA) Universal Building  
South  
1825 Connecticut Avenue NW Washington, D.C.  
20235  
(202) 606-4380

Occupational Safety and Health Administration (U.S. Department of Labor)  
Government Printing Office Washington, DC  
20402  
(202) 783-3238

Sheet Metal and Air Conditioning Contractors' National Association PO Box 70  
Merrifield, VA 22116  
(703) 790-9890

Steel Structures Painting Council 4400 5th Ave.  
Pittsburgh, PA 15213  
(412) 578-3327

Department of Transportation 400 Seventh St.,  
SW Washington, DC 20590  
(202) 426-4000

Underwriters Laboratories 333 Pfingsten  
Rd.  
Northbrook, IL 60062  
(312) 272-8800

Woodwork Institute of California 1833 Broadway  
Fresno, CA 93773  
(209) 233-9035

## 01 43 39 MOCK-UPS

### 1.01 SUMMARY

- A. Section includes non-technical summary description of mock-ups detailed in the various Sections of the Specifications for review.
- B. Related Sections, including, but not limited to:
  1. N/A

### 1.02 SUBMITTALS

- A. Procedures: In accordance with Division 1, and the requirements of respective Specification Sections.
- B. Mock-ups shall not be fabricated until after acceptance of required submittals.
- C. Schedule of Tests: Schedule and account of tests to be performed.
- D. Shop Drawings: Submit shop drawings including any required components, footings, and bracing. Clearly identify components and materials to be integrated into the assembly.
- E. Samples: Prior to construction of mock-ups, provide samples of concrete (separate sample of each finish), window section and finishes, concrete unit masonry (separate sample for each finish), wood siding, wood veneer (finished and unfinished), and metal flashing.

- F. Structural Calculations: Submit structural calculations, as required, to insure the structural integrity of the mock-ups. A State of California licensed structural or civil engineer must sign the calculations.

### **1.03 QUALITY ASSURANCE**

- A. Design Concept: Mock-up requirements are intended to establish function, quality, finish, and color for conformance with the architectural design intent.
- B. Purpose: To verify suitability of colors, finishes and satisfactory integration of assembly components, such as windows, window panels, concrete unit masonry, topping slab, sheet metal items, and fabrication.
- C. Performance: Mock-ups shall be constructed for the District's Representative's review and testing for compliance with the Contract Documents and shall be used as a standard for the final installation.
- D. Make necessary additions and modifications to mock-ups as required to comply with performance requirements while maintaining the design concept.
- E. Modify mock-ups, or construct or install new components if requested by the District's Representative, until final acceptance is obtained.
- F. Work of this section shall serve as the standard for subsequent work of the like kind after approval by the District's Representative. Be prepared, at no additional cost to the District, to make as many modifications as necessary to achieve mock-up that is acceptable to the District's Representative and of sufficient quality to serve as the standard for the complete Project.
- G. Following acceptance, mock-ups shall serve as a performance standard of quality and appearance of the work it represents, including the interface with adjacent materials and components as applicable.
- H. Coordinate fabrication, delivery, assembly, and installation with related materials to be included in the mock-ups. Construction of the mock-up assemblies shall be under the supervision of the same personnel who will be employed for the subsequent work.
- I. Approved mock-ups shall not be incorporated into the work.
  - 1. Remove and clear area after approval of the field mock-up as directed by the District's Representative, but not before placement of similar construction to be left in place and for which the mock-up shall serve as a standard.
- J. Scheduling:
  - 1. Construct mock-ups in a timely manner to permit review and modifications such that the Work is not delayed.
  - 2. Do not proceed with ordering of components or construction subject to mock-up approval until after approval has been obtained.
  - 3. Provide the District's Representative not less than ten working days notice of the time each component is ready for review.
- K. Location
  - 1. At the Contractor's option, but subject to the District's Representative approval.

### **1.04 MATERIALS**

As specified in the respective Sections of the Specifications.

### **1.05 MOCK-UP DESCRIPTIONS**

Sections of the Specifications may require Mock-ups. Refer to each Section for the detailed descriptions and requirements for each Mock-up, if applicable.

**[END OF SECTION 014339]**

# 01 45 23 TESTING AND INSPECTION

## 1.01 GENERAL

- A. Contractor shall perform all tests as specified herein per all applicable sections of Chapters 18A, 19A, 20A, 21A, 22A and 23 of the 2010 CBC and as may be required to insure and demonstrate proper installation and operation of materials and equipment in this Contract. Refer also to Article 11 of the General Conditions.
- B. Definitions:
1. The term "The District's Testing Laboratory" means a testing laboratory retained and paid for by the District for the purpose of reviewing material and product reports and performing other services as determined by the District. The District will select an independent Testing Laboratory to conduct tests. Selection of the material to be tested will be by the Laboratory or the District's Inspector and not by the Contractor.
  2. The term "Contractor's Testing Laboratory" means a testing laboratory retained and paid for by Contractor to perform the testing services required by the Contract Documents. Contractor's Testing Laboratory shall be an organization other than the District's Testing Laboratory and shall be acceptable to the District's Representative. It may be a commercial testing organization, the testing laboratory of a trade association, the certified laboratory of a supplier or manufacturer, Contractor's own forces, or other organization. Contractor's Testing Laboratory shall have performed testing of the type specified for at least five (5) years.
  3. The term "The District's Inspector" or "Inspector of Record" means an inspector retained and paid for by the District for the purpose of observing the progress of the Work and insuring compliance with the Contract Documents and applicable codes and regulations. The District's Inspector will be approved by the Division of the State Architect (DSA) and will provide continuous inspection of the Work per Group I, Chapter 4, Part 1, Title 24, C.C.R., Section 4-133(b) and 4-342.
- C. Tests, inspections, and acceptances of portions of the Work required by the Contract Documents or by Applicable Code Requirements shall be made at the appropriate times. Except as otherwise provided, Contractor shall make arrangements for such tests, inspections, and acceptances with Contractor's Testing Laboratory. Contractor shall give the District's Representative timely notice of when and where tests and inspections are to be made.
- D. If such procedures for testing, inspection, or acceptance reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, Contractor shall bear all costs made necessary by such failure including those of repeated procedures and compensation for the District's Representative's, the District's Representative's Consultants', and the District's Inspector's services and expenses.
- E. If the District's Representative or the District's Inspector is to observe tests, inspections, or make acceptances required by the Contract Documents, the District's Representative or the District's Inspector will do so promptly and, where practicable, at the normal place of testing.
- F. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.
- G. The Work will be available for inspection at any and all times for the District, the District's Representative or the District's Inspector. Contractor will be expected to consult and cooperate with the District's Representative or the District's Inspector in regard to all requirements as set forth in the Contract Documents.
- H. The District will select and pay District's Testing Laboratory costs for all test and inspections, but shall be reimbursed by the Contractor for certain cost as specified herein. Any direct payments by the Contractor to the Testing Laboratory on this Project is prohibited.

## **1.02 TESTING AND INSPECTION**

- A. Project Inspectors: The District will employ one or more qualified inspectors, acceptable to the District's Representative, who will be employed at Project site to observe progress of Work and to report to the District's Representative any nonconformance with the Contract Documents.
- B. The District will retain and pay the expenses of a Geotechnical Engineer to perform inspection, testing, and observation functions specified by the District. Geotechnical Engineer shall communicate only with the District and the District's Representative. The District's Representative shall then give notice to Contractor, with a copy to the District, of any action required of Contractor.
- C. Persons performing testing and inspections shall not be authorized to:
  - 1. Release, revoke, alter or enlarge requirements of the Contract Documents.
  - 2. Stop Work except as may be required to perform testing or inspection operations.
  - 3. Advise on or issue directions relative to any aspect of construction means, methods, techniques, sequences, or procedures.

## **1.03 CONTRACTOR'S RESPONSIBILITIES**

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions and workmanship, to produce work of specified quality. Testing and inspection shall not relieve Contractor of his responsibility for quality of materials in place.
- B. Be responsible for scheduling all testing and inspections specified.
  - 1. Schedule work that is to be tested or inspected so that tests can be performed within a reasonable time period.
  - 2. Notify and obtain concurrence of Project Inspector prior to scheduling testing or inspection by Testing Laboratory or Geotechnical Engineer.
  - 3. Notify the District's Representative in writing on the form contained within the Project Manual at least forty-eight (48) hours in advance of operations on site requiring testing or inspection.
  - 4. Notify the District's Representative and the District's Inspector in writing on the form contained within the Project Manual a minimum of three (3) working days in advance of off-site operations requiring testing or inspection, in order that testing at the source can be arranged without delaying Work.
  - 5. Material shipped by the Contractor from the source of supply before having satisfactorily passed such testing and inspection, or before the receipt of notice from the District's Inspector that such testing and inspection will not be required, shall not be incorporated into the work.
  - 6. Notify the District's Representative in writing on the form contained within the Project Manual at least four (4) working days prior to commencement or resumption of operations requiring observation or testing by the District's Geotechnical Engineer.
  - 7. When a specified test or inspection is not performed due to Contractor's failure to schedule services, the District's Representative will establish remedial work and Contractor shall bear cost of remedy.
  - 8. Additional tests and inspections not herein specified but requested by the District or Architect, will be paid for by the District, unless results of such tests and inspections are found not in compliance with the Contract Documents, in which case the District will pay all costs for initial testing as well as re-testing and re-inspection, and deduct the costs from the Contract sum.
- C. Reimburse the District for the following by deduction from Contract Sum:
  - 1. Costs of testing required because of changes in materials or proportions required by the Contractor.
  - 2. Where inspections or tests prove unsatisfactory or not in compliance with Contract Documents, costs for further inspection and retesting.
  - 3. Costs attributable to the Contractor's methods of operation, when these methods result in excessive test and inspection costs to the District, and if after warning, costs remain excessive.
  - 4. Premium time fees for testing performed after regular working hours or on Saturday, Sunday, or on legal

holidays; except when testing is required for the District's requested overtime work.

5. Tests arising from errors and omissions by the Contractor.
  6. Retests of materials that fail; tests required by the lack of required identifications of materials (mill tests, manufacturer's certifications, etc.); and re-inspections.
  7. Services required to expedite the Contractor's operations.
  8. Testing and inspection fees for travel and per diem expenses, when shops or plants of fabrication are located more than a 50-mile radius from the Project site.
- D. Where required by individual Sections of the Specifications, the Contractor shall pay all costs associated with inspection and testing without adjustment of the Contract Price or the Contract Time. For example, but not limited to, the following:
1. Concrete mix designs.
  2. Certified mill test reports.
  3. Qualification of welding procedures, operators and welders.
- E. Repair or replace damage to work made necessary by retesting.
- F. Secure and deliver to the District's Testing Laboratory adequate quantities of representative samples of materials proposed for use as specified.
- G. Submit to the District's Testing Laboratory the preliminary design mixes proposed to be used for concrete and other materials which require review by the District's Testing Laboratory.
- H. Submit copies of product test reports as specified.
- I. Furnish incidental labor and facilities:
1. To provide the District's Testing Laboratory access to the Work to be tested.
  2. To obtain and handle samples at the Project site or at the source of the product to be tested.
  3. To facilitate inspections and tests.
  4. For storage and curing of test samples.
- J. Provide notice to the District's Representative sufficiently in advance of operations to allow for the District's Testing Laboratory assignment of personnel and scheduling of tests.
- K. When tests or inspections are not performed after such notice, Contractor shall reimburse the District for the District's Testing Laboratory personnel and travel expenses incurred.
- L. Several Sections of the Specifications require testing by the Contractor's Testing Laboratory. Refer to each Section and the Submittal Schedule, Section 01300.
- M. Submit verified reports per. Group I, Chapter 4, Part 1, Title 24, C.C.R., Section 4-336 and 4-343(c).
- N. Maintain and keep available at the Project Site, California Code of Regulations, Part I and Part II, Title 24.

#### **1.04 TESTING SERVICES**

- A. General: The District may retain Testing Laboratories to observe structure excavation, to test compaction of backfill, and to test concrete, masonry, steel, reinforcing and other construction materials and methods as the District's Representative may deem necessary and as the Specifications require. The Testing Laboratory will make as many field observations and tests as are required to determine the acceptability of the Work. Contractor shall provide safe access to the Work as required for the Testing Laboratories to perform sampling and tests.
- B. Testing and inspection services, which are performed, shall be in accordance with the requirements of the California Building Code (CBC), and as specified herein. Testing and inspection services shall verify that Work meets the requirements of the Contract documents.
- C. In general, tests and inspections for structural materials shall include all items enumerated on the Structural drawings as listed for this Project and as prepared and listed by the Architect.
- D. Notice to the District's Representative: In instances where the District's Representative requires testing and where the Specifications require work to be specially tested or approved, it shall be tested only in the presence of the District's Representative after timely notice of its readiness for inspection and test, and the Work after testing shall be covered

up only upon the consent thereto of the District's Representative.

- E. The results of any tests made are for the information of the District. Regardless of any test results, Contractor is solely responsible for the quality of work and materials and for compliance with the requirements of the Drawings and Specifications.
- F. Registered Civil Engineer currently licensed in the State of California shall sign test reports.

#### **1.05 ADDITIONAL TESTING AND INSPECTION**

- A. If initial tests or inspections made by the District's Testing Laboratory, or Geotechnical Engineer reveal that any portion of the Work does not comply with Contract Documents, or if the District's Representative determines that any portion of the Work requires additional testing or inspection, additional tests and inspections shall be made as directed.
  - 1. If such additional tests or inspections establish that such portion of the Work complies with the Contract Documents, all costs of such additional tests or inspections shall be paid by the District.
  - 2. If such additional tests or inspections establish that such portion of the Work fails to comply with the Contract Documents, all costs of such additional tests and inspections, and all other costs resulting from such failure, including compensation for the District's Representative and the District's consultants, shall be deducted from the Contract Sum.

#### **1.06 TEST REPORTS**

- A. Certification and Copies: The District's Testing Laboratory will furnish certified reports summarizing results of inspection, indicating observations and results of tests and indicating compliance or non-compliance with the Contract Documents, and other equipment as to adequacy and compliance, and results of tests and inspections. The District's Testing Laboratory will distribute test and inspection reports, via email to the District, the District's Representative/Construction Manager and the Contractor.:
- B. Test reports shall include all tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. The reports shall show that the material or materials were sampled and tested in accordance with the requirements of CBC and with the Contract Documents. The reports shall also state definitely whether or not the material or materials tested comply with the requirements.
- C. Contractor's Testing Laboratory shall submit all reports via email to the District's Representative, indicating observations and results of tests and indicating compliance or non-compliance with the Contract Documents.
- D. Form: Reports will clearly distinguish type of test, material tested, whether original (first) test or retest, and related information.

#### **1.07 SAMPLES AND MATERIALS**

Contractor shall furnish samples and materials for testing free of charge and shall provide job storage facilities.

#### **1.08 AVAILABILITY OF SAMPLES**

- A. Contractor shall make materials required for testing available to Laboratory and assist in acquiring these materials as directed by the District's Inspector. The samples shall be taken under the immediate direction and supervision of the Testing Laboratory or Inspector.
- B. If Work that is required to be tested or inspected is covered up without prior notice or approval, such Work may be uncovered at the discretion of Architect at no additional cost to the District. Refer to Article 1.05.
- C. Unless otherwise specified, Contractor shall notify Testing Laboratory a minimum of 10 working days in advance of all required tests, and a minimum of 2 working days in advance of all required inspections. Extra laboratory expenses resulting from a failure to notify the Laboratory will be paid by the District and back-charged to the Contractor.
- D. Contractor shall give sufficient advance notice to Testing Laboratory in the event of cancellation or time extension of a scheduled test or inspection. Charges due to insufficient advance notice of cancellations or time extension will be paid for by the District and back-charged to the Contractor.

#### **1.09 REMOVAL OF MATERIALS**

Unless otherwise directed, materials not conforming to the requirements of Contract Documents shall be promptly removed from the Project site.

## **1.10 INSPECTION BY THE DISTRICT**

- A. The District's Inspector shall at all times have access for the purpose of inspection to all parts of the Work and to the shops wherein the Work is in preparation, and the Contractor shall at all times maintain proper facilities and provide safe access for such inspection.
- B. The District's Inspector shall have the right to reject materials and workmanship that are defective, or to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the premises without cost to the District. If the Contractor does not correct such rejected Work within a reasonable time, fixed by written notice, the District may correct such rejected Work and charge the expense to the Contractor.
- C. Should it be considered necessary or advisable by the District at any time before final acceptance of the entire Work to make an examination of Work already completed by removing or tearing out completed Work, the Contractor shall on request promptly furnish necessary facilities, labor and materials. If such Work is found to be defective in any respect because of the fault of the Contractor or Installer, he shall defray all expenses of such examinations and of satisfactory reconstruction. If, however, such Work is found to meet the requirements of the Contract, the additional cost of labor and material necessarily involved in the examination and replacement shall be allowed the Contractor.
- D. An Inspector employed by the District and approved by DSA will be assigned to the Work.
- E. The Contractor shall notify the Inspector a minimum of 24 hours in advance of execution of all Work that requires special or continuous inspection.
- F. The Work of construction in all stages of progress shall be subject to the personal continuous observation of the Inspector. He/She shall have free access to any or all parts of the Work at any time. The Contractor shall furnish the Inspector reasonable facilities for obtaining such information as may be necessary to keep the Inspector fully informed respecting the progress and manner of the Work and the character of the materials. Inspection of the Work shall not relieve the Contractor from any obligation to fulfill this Contract.

## **1.11 UNDESIRABLE CONDITIONS / NONCONFORMANCE**

- A. Substandard Test Results: When test or inspection reveals undesirable conditions, nonconformance or failure to meet requirements, the District's Testing Laboratory will notify the District's Representative. The District's Representative will notify Contractor that the Work does not meet requirements and is rejected.
- B. Immediately upon Testing Laboratory determination of a test failure, the Laboratory shall telephone the results of the test to the District's Representative and the Architect. On the same day, the Laboratory shall send written test results via email to those names on the distribution list above.
- C. Correction: Work done or materials delivered that fail to comply with requirements of Specifications or Drawings shall be rejected and shall immediately be made satisfactory at no additional expense to the District.

## **1.12 MATERIALS AND WORK QUALITY**

- A. All work under all Sections shall be performed in strict accordance with the highest standards of practice related to the trades involved and shall be complete and properly coordinated with all work adjacent or related to it.
- B. All materials must be of the specified quality and equal to approved samples, if samples have been submitted. All work shall be done and completed in a thoroughly high-quality manner, notwithstanding any omission from these Specifications, or the Drawings, and it shall be the duty of Contractor to call the District's Representative's attention to apparent errors or omissions and request written instructions before proceeding with the Work. The District's Representative may, by appropriate instructions, correct errors and supply omissions; such instructions shall be as binding upon Contractor as though contained in the original Specifications or Drawings.
- C. All defective work or materials shall be promptly removed from the premises by Contractor, whether in place or not, and shall be replaced or renewed in such manner as the District's Representative may direct. All materials and work quality of whatever description shall be subjected to the inspection of, and rejection by the District's Representative if not in conformance with the Specifications. The decision of the District's Representative is final and conclusive upon the parties.
- D. Any defective material or work quality, or any unsatisfactory or imperfect work which may be discovered before the final acceptance of the Work or within the initial (and any extended) warranty period, shall be corrected immediately as required by the District, without extra charge, notwithstanding that it may have been overlooked in previous inspections and estimates. Failure to inspect work shall not relieve Contractor from any obligation to perform sound and reliable work as herein described.

### **1.13 APPROVAL**

Approval of the Work in part or as a whole by the District's Representative shall not relieve Contractor of the responsibility for such compliance with the requirements of the Contract Documents. Such approvals may be withdrawn at any time that subsequent examination reveals that apparently satisfactory Work is, in fact, either defective or otherwise fails to comply. Such work from which approval has been withdrawn shall be replaced or re-executed in accordance with the Contract, at no expense to the District.

### **1.14 SPECIFIC TESTING REQUIREMENTS**

The following tests and inspections as detailed in applicable specification sections, are required, but not limited to (also refer to DSA Form SSS 103-1):

#### **EARTHWORK**

- A. The Geotechnical Engineer of record or a Geotechnical Engineer selected by the District will provide continuous inspection of earthwork, field test fill and earth backfill as placed and compacted, inspect excavations and sub-grade before concrete is placed, and provide periodic inspection of open excavations, embankment, and other cuts or vertical surfaces of earth. The Geotechnical Engineer will submit a report indicating that he has observed and tested fills and that in his opinion the fills were placed in accordance with the Contract Documents.
- B. Contractor shall remove unsatisfactory material, re-roll, adjust moisture, place new material, or in the case of excavations, provide proper protective measures, perform other operations necessary, as approved by the Geotechnical Engineer whose decisions will be considered final.
- C. The Architect may require deepening of footings at the recommendation of the Geotechnical Engineer, and so order such deepening in accordance with Section 312000.
- D. Soils Test and Inspection Procedure:

Allow sufficient time for testing, and evaluation of results before material is needed. The Geotechnical Engineer shall be sole and final judge of suitability of all materials. Laboratory compaction tests to be used will be in accordance with ASTM D 1557.

- 1. Field density tests will be made in accordance with ASTM D 1556.
- 2. Number of tests will be determined by Geotechnical Engineer. Materials in question may not be used pending test results.
- 3. Excavation and embankment inspection procedure. Geotechnical Engineer will visually or otherwise examine such areas for bearing values, cleanliness and suitability.
- 4. Earth Work Test Reports: In order to avoid misinterpretations by the reviewing agencies, any retest results shall be reported on the same sheet, immediately following the previous failure test to which it is related. Retests shall be clearly noted as such.

#### **TESTING OF CONCRETE**

- A. Concrete Mix Design:
  - 1. Concrete Mix Design shall be stamped and signed by a California registered Civil Engineer.
  - 2. The District will pay for the sampling of aggregate and preparation of mix design one time for each strength and aggregate size specified. Testing cost for additional mix designs will be paid by the District and back-charged to the Contractor. The District will pay tests of materials, but the Contractor will be back-charged for all tests performed on materials that do not meet requirements. Two copies of the mix designs shall be filed with the Architect for record purposes only, not for review or approval.
  - 3. Test concrete aggregates for mix design only.
  - 4. Test suitability of aggregates in accordance with ASTM C 88-90 if material is under suspicion and if so directed by Architect.
- B. If compressive test of core specimens fail to show compressive strength specified, remove and replace concrete or adequately strengthen in a manner approved by Architect.
- C. Make all tests, take samples, and prepare samples in accordance with the latest standards adopted by American Society for Testing and Materials, referred to as ASTM.
  - 1. Frequency of Testing: Samples for strength tests of each class of concrete placed each day shall be taken not less than once a day, or not less than once for each 50 cubic yards (38 m<sup>3</sup>) of concrete, or not less than once for each 2,000 square feet (186 m<sup>2</sup>) of surface area for slabs or walls. In addition, samples for

strength tests for each class of concrete shall be taken for seven-day tests at the beginning of the concrete work or whenever the mix or aggregate is changed. For existing concrete structures, sufficient cores shall be taken at representative locations throughout the structure, as designated by the architect or structural engineer, so that knowledge will be had of the in-place strength of the concrete. At least three cores shall be taken from each building for each 4,000 square feet (372 m<sup>2</sup>) of floor area, or fraction thereof. Cores shall be at least 4 inches (102 mm) in diameter. Cores as small as 2.75 inches (70 mm) in diameter may be allowed by the enforcement agency when reinforcement is closely spaced and the coarse aggregate does not exceed ¾ inch (19 mm).

- D. Concrete shall be mixed at certified automatic concrete batch plants.
- E. Waiver of Batch Plant Inspection: Batch plant inspection may be waived if the concrete plant complies fully with the requirements of UBC Standard 19-3, and has been certified to comply with the requirements of the National Ready Mixed Concrete Association. The plant must be equipped with an automatic batcher in which the total batching cycle, except for the measuring and introduction of an admixture, is completed by activating a single starter device.
- F. District's Inspector will do the following:
  - 1. Inspect placing of reinforcing steel and concrete at Project.
  - 2. Obtain load ticket and identify mix before accepting each load. Keep daily record of concrete placement, identifying each truckload, time of receipt, and location of concrete in structure. Keep record until completion of Project and make available for inspection by DSA field engineer.
  - 3. During progress of work, take reasonable number of test cylinders as directed by Architect, but at least one set of cylinders for each 100 cubic yards or fractional part thereof for each class of concrete and at least one set from each day's pour. Test cylinders need not be made for concrete used in walks.
  - 4. One set of cylinders shall consist of 3 samples all taken from same batch, one to be tested at age of 7 days and two at 28 days. The 28-day test may be omitted if the 7-day compressive strength exceeds 85 percent of the specified 28-day strength.
  - 5. Make and store cylinders according to ASTM C 31-90.
  - 6. Deliver cylinders to laboratory or store cylinders in a suitable protected environment for pick up by laboratory personnel.
  - 7. Make slump test of wet concrete according to test for slump of Portland cement concrete, ASTM C 143-90a, at least at the same frequency that the cylinders are taken.

## **REINFORCING STEEL**

- A. Tests:
  - 1. Tests shall be performed before the delivery of steel to Project site. Steel not meeting specifications shall not be shipped to the Project.
  - 2. Testing procedure shall conform to ASTM A615-90.
  - 3. Sample at the place of distribution, before shipment: make one tensile test and one bending test from samples out of 10 tons, or fraction thereof, of each size and kind of reinforcing steel, where taken from bundles as delivered from the mill and properly identified as to heat number. Mill analysis shall accompany report. Where identification number cannot be ascertained, or where random samples are taken, make one series of tests from each 2-1/2 tons, or fraction thereof, of each size and kind of reinforcing steel. Tests on unidentified reinforcing steel will be paid by the District and back-charged to the Contractor. Samples shall include not fewer than 2 pieces, each 18 inches long, of each size and kind of reinforcing steel. Inspection of welding of reinforcing steel shall be done by a specially qualified laboratory inspector and tested in accordance with AWS D1.4-79.
- B. District's Inspector will inspect all reinforcement for concrete Work for size, dimensions, locations and proper placement. Inspector shall be present during welding of all reinforcing steel.

## **MASONRY**

- A. Inspection:
  - 1. Masonry work shall be continuously inspected during laying and grouting by an Inspector specially approved for that purpose by the Division of State Architect. The Inspector shall make test samples and

perform such tests as are required.

2. The Inspector shall check the materials, details of construction and construction procedure. The Construction Inspector shall furnish a verified report that of his own personal knowledge the work covered by the report has been performed and materials used and installed are in accordance with and in conformance to, the duly approved drawings and specifications.

**B. Masonry Tests:**

1. Concrete Masonry Units: Test each type of unit for strength in accordance with UBC Standard 24-7; absorption in accordance with ASTM C 140-75 (1980); for drying shrinkage in accordance with ASTM C 426-70 (1982); and for staining materials in lightweight concrete in accordance with ASTM C 641-82.
2. Mortar and Grout Test: At the beginning of all masonry work, at least on test sample of the mortar and grout shall be taken on 3 successive working days and at least at one week intervals thereafter. The samples shall be continuously stored in moist air until tested. They shall meet the minimum strength requirement given in CCR Title 24, Sec 2103A.3 and 2103A.4 for mortar and grout, respectively. Additional samples shall be taken whenever any change in materials or job conditions occur or whenever in the judgment of the Architect or the Division of the State Architect, such tests are necessary to determine the quality of the material. Test specimens for mortar and grout shall be made as set forth in UBC Standard Nos. 21-16 and 21-18. In making the mortar test specimens the mortar shall be taken from the unit soon after spreading. After molding, the molds shall be carefully protected by a covering, which shall be kept damp for at least 24 hours, after which the specimens shall be stored and tested as required for concrete cylinders. In making grout test specimens, an absorbent paper liner shall be used and the mold left in place until the specimen has hardened. The prisms shall be stored as required for concrete cylinders. They shall be tested in the vertical position.
3. Masonry Core Tests: Not less than 3 cores having a diameter of approximately two-thirds of the wall thickness shall be taken from each project. At least one core shall be taken from each building for each four classrooms or equivalent area. The architect in responsible charge of the project or the Inspector shall select the areas for sampling. Core samples shall not be soaked before testing. Materials and workmanship shall be such that for all masonry when tested in compression, cores shall show strength of at least 1500 psi. When tested in shear the unit shear on the cross section of the core shall not be less than 100 pounds per square inch. Shear testing apparatus shall be of a design approved by the Division of the State Architect. Visual examination of all cores shall be made to ascertain if the joints are filled. The Owner Inspector or testing agency shall inspect the coring of the masonry walls and shall prepare a report of coring operations for general distribution. Such reports shall include the total number of cores cut, the location, and the condition of all cores cut on each project regardless of whether or not the core specimens failed during cutting operation. All cores shall be submitted to the laboratory for examination

**STRUCTURAL STEEL**

- A. Mill certificates or affidavits and manufacturers' certification shall be supplied to the Testing Laboratory and Inspector for verification of steel materials. Testing Laboratory shall be notified at least 2 Working days in advance of fabrication and supplied with the reports so that it can make a shop inspection of the steel.
- B. Tests of Steel Materials: If structural steel cannot be identified by heat or melt numbers, or if its source is questionable, not less than one tension test and one bend test will be made for each 5 tons or fractional part thereof. Such testing will be paid for by the District and back-charged to the Contractor. Structural steel identified by heat or melt numbers marked at the mill need not be tested, except testing is required of steel with  $F_y$  greater than 36 ksi.
- C. General Inspection:
  1. Testing Laboratory will visit the fabricator's plant to verify that materials used check with the mill tests; affidavits of test reports, and that fabrication and welding procedures meet Specifications.
  2. Testing Laboratory will visually check fabricated steel against the Contract Drawings and reviewed shop drawings for compliance, and will make physical tests and measurements as required to meet the Specifications. Single pass fillet welds may be visually checked.
  3. Inspection of Shop Fabrication: Inspection of shop fabrication may be required for important work if so designated on the Structural Tests and Inspections list. A qualified inspector approved by the DSA shall make this inspection. He shall furnish the Architect and the DSA a report duly verified by him that the materials and workmanship conform to the approved plans and specifications.
  4. Approved Fabricators: In addition to welding inspection, fabrication inspection will be required for all

work done on the premises of a steel fabricator who does not hold currently valid certificate CCR Title 24 Part 2, Sec. 306(f), Approved Fabricators. The cost of the fabrication inspection will be paid by the District and back-charged to the Contractor.

5. Inspection of welding shall be in accordance with the requirements of the 2010 CBC, Sec. 2231-A.
6. Erection Inspection: If so designated on the Structural Tests and Inspections list, Testing Laboratory will visually inspect bolted and field welded connections, perform such additional tests and inspections of field work as are required by the Architect and prepare test reports for the Architect's review.
7. Shop Fabrication Inspection Outside of Area: The added cost of shop fabrication inspection, and material testing outside the State of California or 150 mile radius of the Project site will be paid by the District and back-charged to the Contractor.

D. Corrections:

1. Correct deficiencies in structural steel Work that inspections and test reports indicate to be not in compliance with the specified requirements.
2. Perform additional tests required to reconfirm noncompliance of the original Work and to show compliance of corrected Work. Costs for all additional tests will be paid for by the District and back-charged to the Contractor.

E. DSA Required Documentation

1. DSA 103 Structural Tests and Inspections Form can be found at the following <http://www.dsa.dgs.ca.gov/Forms/default.htm>

**[END OF SECTION 014523]**

# 01 50 00 TEMPORARY FACILITIES AND CONTROLS

## 1.01 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. The Drawings show, if applicable, existing above and below grade structures, drainage lines, storm drains, sewers, water, gas, electrical, hot water, and other utilities that are known to the District.
- B. Locate all known existing installations before proceeding with construction operations that may cause damage to such installations. Existing installations shall be kept in service where possible and damage to them shall be repaired with no adjustment to the Contract Sum.
- C. If any other structures or utilities are encountered, request in writing the District's Representative to provide direction on how to proceed with the Work.
- D. If any structure or utility is damaged, take all appropriate action to ensure the safety of persons and property.
- E. As designated on the Drawings, protect all existing adjacent areas where trees are to remain, taking special care to limit any erosion, material or equipment storage, or disturbance to such areas during construction.

## 1.02 INTERRUPTION OF BUILDING SERVICES

- A. Obtain the District's Representative's approval at least five (5) working days prior to any utility service shutdown, interruption or cutover. The District may authorize overtime if the work must be performed during overtime hours, provided that the Contract Price shall not be increased for the premium costs of labor performing overtime work if work on an overtime basis to complete a shutdown, interruption, cutover or restoration of utility services during non-working days or non-working hours results from the acts, omissions or other conduct of the Contractor.

## 1.03 PUBLIC SAFETY AND CONVENIENCE

- A. Protection and Obstructions: Contractor shall at all times so conduct Contractor's work as to insure the least possible obstruction to traffic and inconvenience to pedestrians in the vicinity of the Work, and to insure the protection of persons and property. No road, street walkway, nor building corridor shall be closed except with the permission of the District's Representative. Minimum prior two (2) week's written notice to the District's Representative required for road closure.
- B. Fire Safety: Fire hydrants on or adjacent to the Work shall be kept accessible to firefighting equipment at all times.
- C. Temporary Provisions: Temporary provisions shall be made by Contractor to ensure the use of sidewalks, paths, and the proper functioning of all gutters, sewer inlets, drainage ditches and culverts, and natural water courses.
- D. Warning Signs and Barricades: When working in areas that present safety hazards, warning signs and barricades shall be placed in effective locations to prevent unauthorized entry. When aisles or roadways are blocked, detour signs must be installed to clearly designate an alternate route. The Contractor shall provide appropriate barricades and signs. Barricades with blinking lights must be provided in roadways, bikeways, and pathways for barricading overnight. Proper warning signs stating 'ROAD CONSTRUCTION AHEAD' must be placed before barricades in roadways and on bike paths. Flag persons may be required to supplement warning signs and barricades.

## 1.04 FIRE PROTECTION

- A. Burning: No burning of any kind will be permitted on the Project site without written permission of the District.
- B. All Hot Work: No hot work of any kind will be permitted on the Project site without written permission from the local Fire Department.
- C. Spark Arresters: No person shall use or operate any internal combustion engine which is operated on hydrocarbon fuels on any forest, brush, or grass covered lands without providing, and maintaining in effective working order, a spark arrester approved by the Division of Forestry attached to the exhaust system. Motor trucks, truck tractors, buses and passenger vehicles, except motorcycles, are not subject to the provisions of this paragraph provided the exhaust system is equipped with a muffler as defined in the Vehicle Code. Spark arresters affixed to the exhaust system of engines or vehicles, as described in this Section, shall not be placed or mounted in such a position as to allow flames or heat there from to ignite any flammable material.
- D. Shovels for Fire Protection: All mobile equipment, including trucks, tractors, bulldozers, and other mobile equipment, shall be equipped with serviceable shovels for use in fire protection. Common carriers are exempt from this paragraph.

E. Area Fire Protection:

1. No person shall use or operate any motor engine, boiler, stationary equipment, welding equipment, cutting torches or grinding devices from which a spark, fire or flame may originate without first clearing away all flammable material, including snags, from the area around such operation for a distance of 10 feet and without maintaining a serviced 10 lb. multipurpose fire extinguisher ready for use at the immediate area during the operation. In the use of tar pots in roofing operations, two 10 lb. fire extinguishers are required; one on the roof and one in close proximity to the tar pot. The extinguisher(s) must display California State Fire Marshal's extinguisher service tag indicating that the extinguisher(s) have been serviced within the current year.
  2. Refer to Section 015100 for other fire protection requirements.
- F. Gasoline Powered Saws: No person shall use or operate any gasoline powered saw unless such saw is operated at least 50 feet from any flammable material, without providing and maintaining at locations of use or operation of said equipment for firefighting purposes, one serviceable fire extinguisher, or, in lieu thereof, one serviceable shovel.
- G. Access for Firefighting: Access routes for fire-fighting equipment shall be maintained. Fire hydrants and fire department connections shall be kept clear of any obstructions.
- H. Fire Extinguishers: Fire extinguishers shall be located on or adjacent to:
1. Storage sites of combustibles.
  2. Fuel dispensing vehicles.
  3. Sites of hot work operations.
  4. The Contractor's Superintendent's vehicle.
  5. The Contractor's office or shed.

In addition, at least one approved extinguisher shall be provided in plain sight on each floor at each usable stairway where combustible material could accumulate. Extinguishers shall be placed within the structure so that the maximum travel distance to an extinguisher is no more than 75 feet.

- I. Smoking: Smoking is prohibited at or in the vicinity of hazardous operations or combustible or flammable materials. "NO SMOKING" signs shall be posted in these areas. Smoking will be allowed only in designated areas. Where smoking is permitted, safe receptacles shall be provided for smoking materials.
- J. Flammable and combustible liquids must be used and stored so as not to create a hazard to employees or property, following all the rules required by the National Fire Protection Association.
- K. Outside storage site of Combustibles: All storage of combustibles outside of structures shall be in compliance with OSHA Title 29, Section 1952.12.C., #3 and Title 19, 3.07; California Fire Code (Part 9, Title 24 California Code of Regulations) Articles 11 and 87.
- L. Tank Trucks: The use of tank trucks shall be in conformance with NFPA, 385.
- M. Gasoline Storage: No more than 25 gallons of gasoline shall be stored in the Project site outside of an approved storage cabinet. Cabinets shall be constructed of metal and approved by the District's Representative in consultation with the Local Fire Department having jurisdiction. All gasoline storage shall be in conformance with NFPA, No. 30, and Article 79, California Fire Code (Part 9, Title 24, California Code of Regulations).

**1.05 TEMPORARY CONSTRUCTION**

- A. Contractor shall provide, maintain and remove upon completion of Work; temporary construction required for performance of the Work and shall restore disturbed portions of the Project site or other disturbed areas to the satisfaction of the District's Representative.

**1.06 CONSTRUCTION AIDS**

- A. Scaffolding: Provide as required for execution of any part of the Work. The security and safety of the scaffolding, ladders, ramps, temporary stairs, etc., shall be the responsibility of Contractor. Only trained operators shall operate hoists. All such equipment shall meet all applicable safety code requirements.
- B. Cranes, Hoists or Chutes: Provide as required for movement of personnel, materials or equipment. The manufacturer's specifications and limitations shall be followed. Where not available, the Contractor is required to employ a qualified

engineer, competent in the field, who shall determine, communicate, and document the crane's limitations to the District's Representative.

1. The rated loads of all cranes and their components must be plainly marked in full view of the operator. Attachments shall not exceed the crane's limitations.
  2. Adequate safe access must be provided to the operating station(s).
  3. All components must be in good working order; appropriate certifications, as required by the local authority having jurisdiction, must be provided; and a record of preventative maintenance, repair and replacement must be available on-site.
  4. Hoisting equipment such as sheaves, blocks, hooks, ropes, and slings must be maintained free from undue wear, in good working order and inspected frequently as specified by the local authority having jurisdiction.
  5. Any defective equipment must be removed and replaced immediately, or the crane must be taken out of service until repairs have been completed.
  6. Loads must not be handled until they have been determined to be within the capacity of the crane; secured and balanced; the pathway of the load is clear of all obstructions; tag lines are available when appropriate; and all personnel are clear of the lift.
  7. Fire suppression equipment must be available and in good working order.
  8. Crawler and Rubber Tired cranes are to be placed to ensure stability at all boom angles and radii to be used in the lifts.
  9. Rated load capacities, recommended operating speeds, any special hazard warnings shall be posted to be visible to the operator from the control station.
  10. Only designated personnel are authorized to operate cranes.
  11. Unless electrical distribution and transmission lines have been de-energized and visibly grounded, or special insulating barriers have been erected or placed around the lines, no part of the crane or load shall be within a minimum clearance 10 feet from 50 KV or less. For lines exceeding 50 KV, additional clearances shall be provided according to the local authority having jurisdiction.
  12. Personnel shall be lifted by crane ONLY if all other means are either more hazardous or impossible due to design or Project site conditions. If personnel must be lifted, the regulations of the authority having jurisdiction must be followed carefully.
  13. The meaning of signals must be thoroughly understood by both the operator and the signal person. Only one person will be designated as the signal operator.
  14. The operator is not permitted to leave the controls while a load is suspended.
- C. Bracing and Shoring: Provide as adequate for intended use and for loads imposed without excessive settlement, deflection, or deformation. Properly support, wedge and secure to prevent displacement or failure.
1. Shore, brace, sheet, and slope excavations as required to prevent caving, erosion, danger to persons and structures, or interference with construction operations as required to comply with safety laws.
- D. Trenching and Excavation: Refer to Section 014100.
- E. Moisture Control:
1. Perform pumping, trenching, damming and under-draining necessary to keep the Project site free from water during construction.
  2. Dispose of water in manner acceptable to local regulations, taking care to ensure that no existing water disposal facilities are impeded, clogged, damaged or interfered with in any way.
  3. Refer also to Section 015713, "Temporary Erosion and Sediment Control."
- F. Illumination: When any work is performed at night or where daylight is obscured, provide artificial light sufficient to execute the Work properly and to permit thorough inspection.

## **1.07 BARRIERS AND ENCLOSURES**

- A. Contractor shall submit for approval a plan for fencing entire limits of work (Project Site) which coordinates contractor-installed fencing, with owner-installed fencing, if any, designated environmentally sensitive areas, Project boundary, barriers, tree protection, access to and from site and sequencing requirements.
- B. All fencing shall be galvanized chain link type, six (6) feet high, with materials and installation conforming to the requirements of the Chain Link Fence Manufacturers Institute (CLFMI) "Product Manual" for Type I fences, with green screen fabric
- C. A minimum of two vehicular gates, 10 feet wide, shall be provided at locations acceptable to the Owner and approved by The Owner's Representative. The fencing shall be maintained and relocated by Contractor throughout the Project to the satisfaction of The Owner's Representative as required.
- D. The fencing shall be maintained and relocated by Contractor throughout the Project to the satisfaction of the Owner's Representative as required.

## **1.08 PROTECTION OF PLANT LIFE**

- A. No trees shall be removed, pruned, or trimmed without prior approval by the District's Representative.
- B. Solvents, oils, and any other materials which may be harmful to plant life shall be disposed of in containers as directed by the District's Representative and removed from the site. At completion of the Work, any contaminated soil shall be removed and replaced with good soil by the Contractor at no expense to the District.
  - 1. Refer to soil requirements in Division 31.
- C. Drip lines of trees: No diesel or gasoline engine equipment shall be left running under trees or left parked under trees within their drip line.
- D. Refer to Section 015639 for tree protection.

## **1.09 SECURITY**

- A. The District will not accept any responsibility for damage or loss of Contractor's equipment or materials stored on any project related site caused by vandalism, nature, or otherwise, suffered by Contractor. Protection of all construction, equipment, stores, and supplies shall be the sole responsibility of Contractor.

## **1.10 ACCESS ROADS AND PARKING AREAS**

- A. Construction Access: The District reserves the right to control paths of access to the Work. In general, access to work areas will be permitted only over areas involved in this work from where they connect to existing paved roads.
- B. Contractor shall obtain the permission of the District's Representative before pioneering any access. Where additional access is permitted, the limits set by the District's Representative and only types of equipment approved by the District's Representative will be allowed in these areas.
- C. Parking:
  - 1. Vehicles belonging to Contractor and persons or firms with whom Contractor is doing business shall be parked within the Project boundary or designated staging areas. Contractor shall exercise complete control over all vehicles entering upon the Project site of the Work and designate and maintain appropriate parking areas within the site. Parking will not be permitted within drip lines of existing trees. Under no circumstances are any vehicles to encroach on open spaces or on parking spaces/areas or streets outside Project boundary or staging areas designated by the District.
  - 2. If the Project boundary will not accommodate Contractor's parking needs, Contractor may have limited use of the District's parking facilities on campus in conformance with the District's requirements contractor must requests and receive district representative's approval prior to parking on Campus.

## **1.11 TEMPORARY CONTROLS**

- A. Contractor shall provide and maintain suitable temporary barricades, fences, directional signs, or other structures as required for protection of public traffic; provide walks around any obstructions made in public places in carrying on the Work covered by the Contract; maintain from the beginning of twilight through the whole of every night on or near the obstructions, sufficient light and guards to protect travelers from injury to the satisfaction of the District's Representative.
- B. Noise Control and Abatement:

1. Provide state-of-the-art mufflers, silencers and noise control features for all equipment.
  2. Prohibit vehicles and other gas- or diesel-powered equipment from unnecessary warming up, idling and engine revving.
  3. Utilize least noisy procedures or machines such as electric rather than diesel-powered equipment whenever there is a choice.
  4. Use of powered construction equipment, except impact tools, which generates noise in excess of 80 dBA measured at a distance of 100 feet is prohibited.
  5. Provide impact tools and equipment that have intake and exhaust muffler as applicable; pavement breakers and jackhammers shall be equipped with acoustically attenuating shields or shrouds.
- C. Drainage and Erosion Control During Construction:
1. Maintain all portions of Work free from standing water at all times during construction.
  2. Where required, construct temporary drainage ditches, berms, or pumping systems to divert drainage water from Project site; ensure resultant water is carried to nearest natural watercourse and disposed of without erosion to surrounding area.
  3. Take care to prevent silting of existing sinkholes and watercourses and designated environmentally sensitive areas.
  4. Remove and dispose of silt which is deposited as result of Work of this Project to the satisfaction of the District's Representative at no additional cost to the District.
  5. Conform to all requirements of the District's Erosion Control Standards for erosion control.
  6. Refer to Section 015713 for further requirements.

## **1.12 TRAFFIC REGULATION**

- A. Traffic will be controlled using methods specified by CALTRANS and occur during hours permitted by the District.
- B. Traffic may be reduced to one lane during the workday with appropriate use of Contractor-provided flag person with the consent of the District's Representative.
- C. Construction Parking Control: Distribution of available parking shall be the Contractor's responsibility.
- D. Flag persons at Access Routes: Provide as required to signal and regulate traffic to and from the Project site. All flag persons shall wear blaze orange or similar color vests.
- E. Provide flares, lights and temporary traffic signals as may be required to ensure safe traffic conditions on access roads in immediate vicinity of construction.
- F. Haul Routes: The District reserves the right to designate haul routes in the event construction traffic conflicts with the District's operations or interferes with normal campus traffic. Truck-trailers may be parked off site in designated Campus areas or locations approved by the District's Representative.
- G. All speed limits, stop signs, and other traffic regulations shall be followed at all times.
- H. Traffic control routes and site access ways shall be as indicated on the drawings. Sketches for the construction of certain detours in areas not indicated on the drawings shall be submitted to the District's Representative for acceptance.

## **1.13 DUST PALLIATION**

- A. The Contractor shall take appropriate steps throughout the term of the Project, such as watering, to prevent air borne dust due to work under this Contract. No chemical palliatives shall be used without permission of the District's Representative. Contractor shall provide, at the Contractor's expense, all water spreading operations for dust palliation. Water for dust palliation will be provided by the District and paid for by the Contractor in accordance with Section 015100.
- B. Any chemicals under consideration, and their application methods, must be favorably reviewed by the District's Representative, in consultation with the District's professional Occupational Safety and Health staff.
- C. The Contractor will control all runoff so as not to pollute public or private waterways and control all airborne materials as required by the District.

- D. The Contractor will be responsible for providing employees applying dust control materials with appropriate personal protective equipment to protect them from injurious exposures.
- E. The Contractor will be responsible for training all employees applying chemical palliatives, in the proper application procedures and of the hazards to which they may be exposed.
- F. Whenever possible the Contractor shall use alternatives that are less likely to create dusty conditions.
- G. The Contractor is responsible to dispose of all contaminated refuse as specified by the Material Safety Data Sheets, local authority having jurisdiction, and/or the District.
- H. Compressed air in excess of 30 psi will not be used for cleaning purposes. Appropriate personal protective equipment, i.e., eye and hearing protection will be used during use of compressed air for cleaning.
- I. Any work creating airborne materials that are, or could be, combustible will be performed in such a manner so as not to create a fire or explosion hazard. Such materials will be removed from the Project site and stored or taken off-site by use of methods that will control fire or explosion hazards.

#### **1.14 OVERLOADING**

- A. If Contractor shall cause, permit or allow any roadway, structure, or utility element to be overloaded by shoring, piling, or setting thereon, any material or equipment, or by performing thereon any of Contractor's work, Contractor shall do so at Contractor's sole risk and Contractor shall be solely responsible for any and all loss, damage and/or injury arising or resulting there from. Improper use of high-energy compaction equipment shall be regarded as a form of overloading as defined under this paragraph.

#### **1.15 HAULING EQUIPMENT AND ROUTES**

- A. Hauling over existing roads (paved or unpaved) shall be done only with vehicles and loads that are normally permitted on State Highways. "Off road" type haul equipment and illegal State loads will not be permitted.
- B. Haul Routes: The Contractor shall comply with all local and regional limitations regarding the use of public roadways for transportation of goods, materials or equipment. The District reserves the right to designate haul routes within the geographic limits of campus and/or the geographic areas adjacent to Pacific Grove Unified Schools in event construction traffic conflicts with the District's operations or interferes with normal campus traffic or traffic in the geographic areas adjacent the campus.

#### **1.16 CARE OF PRESENT BUILDINGS, GROUNDS AND UTILITIES**

- A. Contractor shall be held responsible, so far as Contractor's operations are concerned, for the care and preservation of the adjacent premises, plant life, landscaping, utilities walks, streets and coterminous property. Any parts of them injured, damaged, or disturbed because of Contractor's work shall be promptly repaired, replaced, or cleaned to the satisfaction of the District's Representative at Contractor's expense.
- B. Any and all existing roads, curbing, utility poles, underground utility lines, etc., damaged by Contractor in the execution of this Contract shall be restored to former condition by Contractor to the satisfaction of the District's Representative at no change in the Contract Price.
- C. Known existing underground utilities are shown or noted on the Drawings. It shall be Contractor's responsibility to protect these utilities and Contractor shall repair at Contractor's expense, any such utilities damaged by Contractor's operation.
- D. Disrupted utilities shall be restored to service promptly by continuous effort, including overtime, at no cost to the District. Permanent repairs may be delayed to normal hours if temporary service restoration meets health, safety, and campus operational requirements.

#### **1.17 CARE OF CONTRACTOR'S WORK**

- A. Contractor shall be responsible for damage to any of Contractor's work prior to final acceptance. Contractor shall adequately protect all conduit openings, trenches, ditches, equipment and materials to prevent obstructions, breakage, misuse, or disfigurement during construction, insofar as possible.
- B. All surfaces, structural or finish, which are exposed to view in the completed building or structure, and all items of equipment shall be completely protected from damage during the construction phase by Contractor, who shall take all necessary precautions to ensure that the Project is turned over to the District entirely free from scratches, abrasions, dents, drips, gouges, stains, water marks, paint or oil runs, or similar types of damage.

1. Wherever such damage does occur, and before the final inspection of the building by the District's

Representative, Contractor shall, at no expense to the District and under the direction of the District's Representative, completely remove the damaged work and replace it in conformance with the Contract Documents.

- C. All methods of protection shall be selected by Contractor, and maintained in good condition, until each element so protected is ready for the next phase of the work, or until it is prepared for final cleaning.
- D. All protection shall be carefully removed so as to cause no damage to the protected element or area.

#### **1.18 WEATHER PROTECTION**

- A. Contractor shall at all times protect the excavation and trenches from damage by rainwater, spring water, or backup up of drains or sewers. Contractor shall provide pumps and equipment and enclosures to provide this protection. The building structures and interior finishes and furnishings shall be protected by Contractor from rain, dew, wind, and all other elements of the weather during periods when roof areas are unprotected by roofing, and when breaches are present in the exterior walls. Such areas shall be covered with weather tight tarpaulins firmly secured or by other approved methods. See Division 31, Site Work, for drainage control requirements.

#### **1.19 MATERIALS STOCKPILING**

- A. Areas as close as practicable to the work areas will be designated by the District's Representative for stockpiling of materials. Materials shall not be stockpiled except at sites acceptable to, and approved by, the District's Representative.
- B. Materials that must be sheltered for proper storage shall be stored in Contractor furnished temporary structures.

#### **1.20 PROJECT IDENTIFICATION AND SIGNS**

- A. Signboards: No advertising matter shall be attached or painted on surfaces of building, fences, barricades, or canopies.

#### **1.21 FIELD OFFICES AND SHEDS**

- A. The District will not furnish required office space to Contractor.
- B. Field Offices:

- 1. The Contractor shall provide and maintain at the Project site for the entire construction period temporary accessible field offices as needed for the proper administration of this Work. Location of field offices on the site shall be as acceptable to the District's Representative. Cost of the

Contractor's field office, shall be borne by the Contractor. Responsibility for the cost of utilities for Contractor's field offices shall be as specified in Section 015100.

- C. Storage: Contractor shall provide all structures required at the Project site for safe and proper storage of tools and materials. These structures shall be placed only at locations acceptable to the District and approved by the District's Representative.
- D. Contractor shall remove all such structures from the site at completion of the Work.

#### **1.22 HOUSEKEEPING**

- A. During the course of construction, alteration, or repairs, form and scrap lumber with protruding nails, and all other debris, shall be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures.
- B. The Contractor shall provide waste bins for use by all subcontractors and personnel on site. Remove and legally dispose of all surplus, excavated or left over materials and debris, keeping the Project site and public ways clean.
- C. Combustible scrap and debris shall be removed at regular intervals during the course of construction. Safe means shall be provided to facilitate such removal. No combustible scrap or debris shall be stacked or placed within ten feet of buildings or structures.
- D. Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and other refuse. Containers used for garbage and other oily flammable, or hazardous waste, such as caustics, acids, harmful dusts, etc., shall be equipped with covers. Garbage and other waste shall be disposed of at frequent and regular intervals, at a minimum of every week.

#### **1.23 MISCELLANEOUS CONTROLS**

- A. Provide keying different from permanent keying of locks and include organized, locked, and supervised storage for receiving and dispensing items of builder's hardware throughout construction period.
- B. The District's Representative's Access: Provide the District's Representative and the District with keys necessary to

gain access to locked areas of the Work. The District's Representative will be responsible for such keys and will return them to the Contractor at the time of final inspection. If the District elects to use its own locks and keys, the Contractor shall double-lock gates as required.

- C. All accidents involving employees of the Contractor and employees of lower tier contractors must be reported to the District's Representative within 24 hours of the occurrence.
- D. Hours of Operation: No Work, including deliveries, is to be performed on the Project site before 7:00 a.m., after 7:00 p.m., or on Saturdays, Sundays or District holidays, without prior written authorization of the District's Representative. Holidays shall be those days designated by the District as District holidays.
- E. There are fifteen (15) District holidays from January to December. Provide for one (1) calendar day for each holiday during the Contract Time period. Verify the exact day of each District holiday with the District's Representative.

[END OF SECTION 015000]

## 01 51 00 TEMPORARY UTILITIES

### 1.01 GENERAL

#### A. Description:

1. Provide and maintain temporary utilities for construction operations and related necessary temporary structures. Remove them when they are no longer needed.
2. Coordinate and make connections and services for water and electricity to Project site sources.

B. The Contractor shall submit a plan of proposed temporary utilities before installation. Included in this plan shall be a plan of proposed water conservation measures as per 1.02 below.

#### C. Requirements of Regulatory Agencies:

1. Install and use temporary utilities in accordance with the following:

- a. National Electric Code.
  - b. Federal, State and local codes and regulations.
  - c. Utility company requirements.
- D. The District makes no representation nor guarantee that any utility provided by the District will be adequate in either quantity or quality for Contractor's needs.

## 1.02 MATERIALS

- A. Materials may be new or used but shall be adequate for the required purposes. Their use and methods of installation shall not create unsafe conditions or violate requirements of Applicable Code Requirements.
- B. Temporary Utilities:
1. The District shall permit the Contractor to use available existing utilities at the District's expense, excluding telephone; however, if the Contractor chooses to make use of said utilities, Contractor shall assume full responsibility for any changes made by Contractor related thereto, and for any consequences caused thereby. Upon completion of the work, Contractor shall remove any modifications to existing utilities made by Contractor and shall restore existing utilities to conditions existing at time of award.
  2. Provide all equipment, including metering, connections, transformers, and other materials as shown in the Contract Documents for extending the utility lines to where they will be used.
  3. Contractor will not be charged for water or electricity.
    - a. Water: Connect to the campus water system at a designated hydrant. The Contractor shall submit a plan of proposed water conservation measures for approval prior to commencement of construction. All prevailing Monterey County ordinances governing water use and conservation shall be used as a guide for minimum water use by the Contractor. In lieu of connecting to the campus water system, the Contractor shall make arrangements for water from other sources acceptable to the District's Representative at no additional cost to the Contract.
    - b. Electricity: Connect to campus electrical system as designated. Electrical power used by the Contractor will be provided by the District at no cost.
  4. Contractor shall provide all distribution lines, wiring, switches, outlets, service piping, fittings, valves and other appurtenances necessary for the connection and distribution of temporary power, including temporary phone lines, within the Project site. Written approval by the District, via the District's Representative, is required. Temporary water shall be separated from domestic water supply by an above ground reduced pressure principle backflow prevention device approved by the District, via the District's Representative, and governing jurisdictions. All excavations and trenches for temporary utilities shall be backfilled and compacted. The District shall approve all temporary utilities prior to installation. On completion of work, all temporary utilities shall be removed, trenches backfilled and compacted as specified in Division 31, and all areas restored to natural condition.
  5. Points of connection for temporary power, telephone, and water are as follows:
    - a. Water: With the installation of a water meter, the Contractor may obtain temporary water from any available hydrant within the Project Site. Coordinate with the District via the District's Representative.
    - b. Power: 208/120 VAC power available from existing distribution gear located within the Project site. Connect to the source with a fused disconnect switch, and transformer (if required). Route overhead power to temporary field offices via utility grade poles properly installed and braced. Provide sufficient clearance for service vehicle access to the transformer. Schedule power connection and disconnection to avoid impact to existing facilities. Coordinate with the District via the District's Representative.
    - c. Telephone: The Contractor shall coordinate connection with phone service provider of their choosing. Contractor will provide any and all temporary measures required by phone service provider to make connection to contractor's temporary field offices. Contractor is responsible for all associated costs with no additional costs to the owner.
- C. Temporary Heat and Ventilation:
1. Provide ventilation adequate for the work in progress.

2. Provide temporary heat and ventilation as required to maintain adequate environmental conditions to meet specified minimum conditions for installation of materials and to protect equipment, materials, and finishes from damage due to temperature or humidity.
3. Provide adequate forced ventilation of enclosed areas to cure installed materials, to prevent excessive humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.

D. Temporary Telephone Service:

1. Contractor shall provide, pay for, and maintain at least one telephone at the Project site for the entire construction period as follows:
  - a. Minimum of one telephone in Contractor's field office for Contractor's own business use. The Contractor shall pay their own phone charges.
  - b. Provided other telephones as required, including coin-operated telephones for general use.

E. Temporary Water: Install piping with taps located so that water is available throughout the Project site by the use of hoses. Protect piping and fittings against freezing.

F. Drinking Water: Contractor shall provide clean, sanitary, and adequate drinking water facilities for the entire period of construction. The Contractor must make potable water and individual drinking containers available to all employees.

G. Temporary Accessible Sanitary Facilities:

1. Contractor shall install and maintain in a sanitary condition, suitable toilets for use of workers. These toilets shall be placed in location acceptable to the District's Representative. Contractor to provide a minimum of (2) toilets and (1) hand wash station at all times and no less than required by law. At least one Sanitary Facility shall be accessible.
2. There shall be a minimum number as noted above but no less than one (1) toilet for each multiple of twenty (20) Contractor's employees, or fractional part thereof, working at the Project site. At least one Sanitary Facility shall be accessible.

H. Temporary Fire Protection:

1. Provide and maintain fire protection equipment including extinguishers, fire hoses, and other equipment as necessary for proper fire protection during the course of the Work.
2. Use fire protection equipment only for fighting fires.
3. Locate fire extinguishers in field offices, storage sheds, tool houses, temporary structures, and other buildings throughout the Project site, and/or as directed by the Campus Fire Marshal. Refer to Section 015000, 1.04, for additional requirements and locations.
4. Assign a qualified person with authority to maintain fire protection equipment, institute fire prevention measures, and direct the prompt removal of combustible and waste material.
5. Refer to Section 015000.

## **1.03 EXECUTION**

A. General:

1. Comply with applicable requirements specified in Division 22 – Plumbing, Division 23 - HVAC and Division 26 Electrical.
2. Maintain and operate systems to provide continuous service.
3. Modify and extend systems as required.

B. Removal and Reconditioning:

1. Remove all temporary services installed as a requirement of the Contract Documents. Restore utilities to their original condition at the completion of the Work.
2. Legally and properly dispose of all debris resulting from removal and reconditioning operations.

[END OF SECTION 015100]

**1.01 GENERAL**

This section includes procedures, requirements and guidelines for Contractor designed, constructed, and maintained erosion and sediment control measures.

**1.02 RELATED SECTIONS**

- A. Section 015000 – Temporary Facilities and Temporary Controls
- B. Division 31 — Earthwork

**1.03 EROSION CONTROL**

## A. General:

1. Be responsible for erosion and sediment control within the Project site or anywhere that Project construction disturbs the surface vegetation or soil.
  - a. Prevent erosion of graded areas during construction and until permanent planting will provide protection and permanent drainage and erosion control measures are installed.
  - b. Prevent any sediment from leaving the Project site, either water-borne, air-borne, on the tires of vehicles, or by spillage from off-site hauling of soils.
2. Include the cost of all erosion and sediment control measures in the price bid.

## B. Work Restrictions:

1. No clearing, brushing, or grading shall begin until temporary desilting facilities are in place at each watercourse leaving the Project site, and any portion of the site which slopes toward the perimeter has adequate perimeter control facilities in place.
2. Submit an Erosion and Sediment Control Plan to the District's Representative for review prior to scheduled implementation. Refer to Section 013300. At the completion of the District's Representative review, a meeting will be conducted by the District's Representative with the Contractor to discuss and agree upon the implementation of the plan.
3. Agreement to the plan by other parties does not relieve the Contractor from full responsibility for its effectiveness.

## C. Winter Erosion and Sediment Control Plan:

1. Whenever construction is planned during the period October 15 through April 15, submit an erosion and sediment control plan prepared by a registered civil engineer for any denuded soil area within the Project site or any other area where the soil surface will be disturbed by construction operations.
2. Implement the plan by October 15 or by the date scheduled for commencing construction after October 15, with all required features in place.
3. Submit an Erosion and Sediment Control Plan to the District's Representative for review prior to scheduled implementation. Refer to Section 013300 - Submittals. At the completion of the District's Representative review, a meeting will be conducted by the District's Representative with the Contractor to discuss and agree upon the implementation of the plan.
4. Agreement to the plan by other parties does not relieve the Contractor from full responsibility for its effectiveness.

## D. Erosion and Sediment Control Plan Requirements:

1. Regardless of project size, the Contractor shall submit a site-specific Erosion and Sediment Control Plan or Storm Water Pollution Prevention Plan for District review and approval prior to start of work. The Contractor shall effectively implement and properly maintain storm water best management practices (BMPs) during construction to prevent discharges of pollutants, and including trash, to local drainages and waterways. Contractor shall comply with all water quality regulations as prescribed by the State Water

Resources Control Board (SWRCB) and Central Coast Regional Water Quality Control Board (RWQCB) regulations for the prevention of construction site discharges of pollutants, illicit discharges, and enforcement of prohibited and illicit discharges. The contractor shall employ at all times storm water runoff controls and BMPs at the site, including but not limited to erosion prevention, sediment controls, site stabilization, good housekeeping practices, proper materials storage, handling, and waste management, and similar pollution prevention measures to prevent dumping or illegal discharges during construction into the street and/or storm drain system. Storm water management and control practices shall result in the following outcomes on all construction sites, regardless of size:

- a. Protection of storm drain inlets and adjacent waterways must be implemented at all times to prevent illicit discharges of sediment, construction debris and fluids, and waste of any kind.
  - b. No release of hazardous substances, such as oils, paints, thinners, fuels, and other chemicals; if such a spill occurs that may threaten local water quality, contractor must call 911 immediately and notify the District;
  - c. Minimization of site disturbance shall be kept to that portion necessary for construction only, and perimeter controls shall be implemented at all times during all weather conditions;
  - d. Soil stabilization of graded areas shall be in place at all times where construction activities have temporarily and/or permanently ceased;
  - e. No deposit of mud, soil, sediment, concrete washout, trash, dewatering, or other similar construction-related material or waste shall occur on or into public rights of way, private streets, or into the District's storm water system and related natural resources, either by direct deposit, dropping, discharge, erosion, or tracking by construction vehicles. Any such discharge shall be cleaned-up promptly if an immediate threat to water quality exists, or if not immediate, at the end of the current work shift or workday in which the deposit occurred, whichever comes first;
  - f. No runoff from graded areas or stockpile areas shall contain sediments and/or pollutants. Stockpiles shall be adequately and securely covered to avoid contact with rainfall and wind to prevent soil and stockpile movement by water and/or wind;
  - g. Runoff containing sediments shall be captured in secondary containment structures and either treated to remove sediments prior to discharge or infiltrated in the soil on-site;
  - h. No exposure of graded areas and stockpile areas to storm water run-on shall occur. Run-on shall be controlled by diversion structures such as dikes, secondary containment, or stockpile covers; and,
  - i. All hard-surfaced areas are to be swept regularly and free of dirt and construction debris such that the surface of the pavement is clearly visible at all locations, and construction entrance/exist(s) shall be adequately stabilized to prevent tracking of soil/sediment from reaching streets/paved surfaces and drainage pathways.
2. Temporary soil stabilization measures installed on graded slopes steeper than a ratio of three (horizontal) to one (vertical), and/or greater than 10 feet in height.
  3. Desilting facilities at all drainage outlets from the graded site, designed for 25-year storm intensity. They must be detailed on the plans. Submit design and specific recommendations for the following:
    - a. Desilting basin volume based on gradient and nature of soils.
    - b. The actual extent of all graded areas and identification of any temporary soil stabilization measures.
    - c. Size of desilting basin outlet pipe and overflow.
    - d. Dike requirements. Show minimum wall width, slope of walls, percent compaction, etc.
  4. Show the placement of devices to reduce erosion damage within the Project site.
  5. Outlet conditions from the desilting basin shall not exceed downstream limitations, with the exception of overflow that is to be designed to provide capacity of 1.5 times the maximum design flow.
  6. Provide for:
    - a. Adjustment of the plan as grading progresses.

- b. Control of the grading work so as not to violate assumptions of the plan.
7. Include the following notes on the plan:
- a. In case of emergency call

(Responsible person)

\_\_\_\_\_

at\_( \_\_\_\_\_ )

(24 hour phone no.)

- b. The undersigned civil engineer will review the erosion control work.

\_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)

\_\_\_\_\_  
California Registered Civil Engineer No.

- c. A standby crew for emergency work shall be available at all times during the rainy season, October 15 through April 15. Necessary materials shall be available on the Project site and stockpiled at convenient locations to facilitate rapid construction of temporary devices or to repair any damaged erosion control measures when rain is imminent.
- d. Do not move or modify devices without the approval of the District's Representative.
- e. All removable protective devices shown shall be in place at the end of each working day when the five-day rain probability forecast exceeds 40 percent.
- f. After a rainstorm, remove all silt and debris from check berms and desilting basins. Immediately repair any graded slope surface protection measures damaged during a rainstorm.
- g. Fill slopes at the Project perimeter must drain away from the top of the slope at the conclusion of each working day.
- h. Whenever the depth of water in any device exceeds two feet, barricade or guard the Project site for public safety until the water has subsided.
- i. Do not pump or otherwise drain unfiltered water from the basins until sediment has settled.
- j. Do not fill sand bags with gravel; use only sand or granular soil.
- k. Do not use perforated risers as pond outlets.
- l. Do not use filtering devices as a means of control.
- m. Completely cover any pipe outlet from a desilting basin with sandbags filled with coarse sand as a final means of protection.

E. Best Management Practices (BMPs)

- 1. BMPs are required to be illustrated in construction Plans and employed on all construction sites as applicable to the construction activity and shall provide for, and not be limited to: inlet protections, perimeter protections, erosion prevention and soil control measures, soil stabilization measures, spill prevention and discharge control measures; solid waste containment; concrete waste management; proper vehicle and equipment cleaning, fueling, and maintenance; and proper materials management and storage.
- 2. Activities to be performed by Contractor include, but are not limited to:
  - a. Development and submittal of an Erosion and Sediment Control Plan or Storm Water Pollution Prevention Plan for District review and approval prior to construction start.
  - b. At all times, Contractor shall implement and maintain the temporary and permanent vegetation

(if any), erosion and sediment control measures, and other protective BMP measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness of BMPs, restoration needs for destroyed vegetative cover, and by repair of erosion, sediment, and other protective measures.

- c. Contractor shall inspect the following areas at least once every seven (7) calendar days, unless otherwise necessary based on current weather conditions or as directed by District , and always within 24 hours prior to and after any predicted storm:
  - I. Inlet protections and perimeter controls;
  - II. Vehicle entry and exist locations;
  - III. Vehicle parking and storage areas;
  - IV. Disturbed areas of the construction site,
  - V. Areas that have not been finally stabilized,
  - VI. Areas used for storage of materials that are exposed to wind or precipitation,
  - VII. Equipment and staging areas that are exposed to wind or precipitation; and,
  - VIII. All waste storage and handling devices and areas.
  - IX. Where sites have been finally stabilized, such inspection shall be conducted at least once every month.
  - X. Areas noted above shall be inspected for proper BMP implementation and necessary BMP maintenance, as well as evidence of, or the potential for:
    - XI. Erosion, or
    - XII. Sediments entering waterways or the drainage system, or
    - XIII. Pollutants entering waterways or the drainage system.
- d. Erosion and sediment control measures shall be observed and maintained to ensure that they are operating correctly. Discharge locations or points shall be inspected regularly to ascertain whether erosion control measures are effective in preventing sedimentation and subsequent degradation of receiving water quality in violation of receiving water quality standards. Vehicle entry and exist locations shall be inspected for evidence of offsite sediment and pollutant tracking and need for cleanup and improved BMP protection measures
- e. Deficiencies observed during inspections shall be noted and rectified before the end of the workday.
- f. Additionally, the Contractor shall comply with the State Water Resources Control Board's Construction General Permit (CGP), as applicable to the project. Projects subject to the CGP include those that disturb one or more acres of soil, are less than one acre and are part of a common plan of development or sale, or applicable Linear Underground/Overhead Projects, and are required to obtain coverage under the State's CGP for Discharges of Storm Water associated with Construction Activity Construction General Permit Order 2009-0009-DWQ, and subsequent amendments thereto. Construction activities subject to this permit include clearing, grading, and disturbances to the ground such as stockpiling, or excavation, but do not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. Application for CGP coverage is made by the Contractor through a Notice of Intent (NOI) to the SWRCB and involves much interaction with the applicable RWQCB as CGP regulator. The Contractor shall develop and supply the District with NOI and associated Storm Water Pollution Prevention Plan (SWPPP) for review and records purposes.
- g. CGP coverage requires the development and implementation of a SWPPP. The SWPPP contents are mandated by the SWRCB and are subject to change, and typically contain site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must illustrate the placement of BMPs for the construction project and list pollution prevention BMPs the discharger will use to protect storm water runoff. Additionally, applicable SWPPPs must contain a visual monitoring program and a

chemical monitoring program for "non-visible" pollutants to be implemented. All SWPPPs must be developed by a Qualified SWPPP Developer (QSD) and implemented by a Qualified SWPPP Practitioner (QSP) and supplied to the District for review and comment. Additional CGP information on can be found at the State Water Resources Control Board CGP website: [https://www.waterboards.ca.gov/water\\_issues/programs/stormwater/constpermits.html](https://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.html)

- h. Construction site storm water management and control measures shall be implemented year-round regardless of "season". All construction site BMPs shall be implemented at the appropriate level for the construction activity at hand and in a proactive manner during all seasons while construction is ongoing

F. Use of Permanent Drainage Facilities:

1. Any drainage structures, or detention devices that appear in the contract documents may be utilized in the Erosion and Sediment Control plan on the condition that they are temporarily modified to serve the Contractor's purposes and cleaned before Project completion.
2. Such facilities have been designed for the District's use in drainage control upon completion of the Project and shall not be considered as adequate for control during construction except by the independent determination of the Contractor.

G. Planted Areas:

1. For the purpose of this Section, planted areas indicated on the drawings are not considered to be installed until one year has elapsed since the time of planting, or until released by the District's Representative as being substantially established. Therefore:
  - a. Maintain planting, and erosion control measures around the planted area for at least one (1) year.
  - b. Make repairs to any damaged areas during that time.
  - c. Where planting is lost due to erosion, replace it and begin the one-year period for that portion at the time of replacement.

**[END OF SECTION 015713]**

# 01 71 23 FIELD ENGINEERING

## 1.01 GENERAL

- A. The work of this section includes:
  - 1. Quality control
  - 2. Submittals
  - 3. Project record documents.
  - 4. Examination
  - 5. Survey Reference Points
  - 6. Survey Requirements.
  - 7. Laying out the work
- B. Related Sections
  - 1. General Conditions – Article 4
  - 2. Section 017700 – Closeout Procedures

## 1.02 QUALITY CONTROL

- A. Employ a professional Engineer of the discipline required for specific service on project, licensed in the State of California.

## 1.03 SUBMITTALS

- A. Submit name, address, and telephone number of Engineer before starting survey work.
- B. Submit evidence of Engineer's errors and omissions insurance coverage in the form of an Insurance Certificate.
- C. On request, submit documentation verifying accuracy of survey work.
- D. Submit a copy of registered site drawing and certificate signed by the Engineer, that the elevations and locations of the work are in conformance with Contract Documents.

## 1.04 PROJECT RECORD DOCUMENTS

- A. Maintain complete, accurate log of control and survey work as it progresses. Indicate dimensions, locations, angles, and elevations of construction and site work
- B. Submit Record Documents under provisions of Section 017700.

## 1.05 EXAMINATION

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify District's Representative of any discrepancies discovered.

## 1.06 SURVEY REFERENCE POINTS

- A. Contractor to locate and protect survey control and reference points.
- B. Control datum for survey is that indicated on Drawings.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to District's Representative the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to District Representative.

**1.07 SURVEY REQUIREMENTS**

- A. Provide field engineering services. Utilize recognized engineering survey practices.
- B. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on Project Record Documents.
- C. Establish lines and levels, locate and lay out by instrumentation and similar appropriate means:
  - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
  - 2. Grid or axis for structures.
  - 3. Building foundation, column locations, and ground floor elevations.
- D. Periodically verify layouts by same means.

**1.08 LAYING OUT THE WORK**

- A. Contractor shall employ a Registered Civil Engineer or Licensed Land Surveyor (hereafter referred to as Surveyor) to lay out the entire work and set grades, lines, levels, and positions throughout the site.
- B. Prior to beginning work, locate or set all general reference points, bench marks, establish monuments and take action as necessary to prevent their destruction, then layout all lines, elevations and measurements for entire work.
- C. Verify figures and dimensions shown on the Drawings, notify the District's Representative immediately of any discrepancies and re-direct work to avoid delay. Contractor shall accept responsibility for all errors resulting from failure to notify District's Representative of known discrepancies.
- D. Establish monuments on curbs, manholes or pavements with concrete embedded steel pipe with lead plug and/or brass nail with washer, as acceptable to the District's Representative.
- E. Show exact locations of the monuments if any are disrupted or destroyed on the Project Record Drawings.

**[END OF SECTION 017123]**

# 01 73 29 CUTTING AND PATCHING

## **PART 1 GENERAL**

### 1.1. RELATED DOCUMENTS

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

### 1.2. SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
  - 1. Division 1 Section "Selective Demolition" for demolition of selected portions of the building.
  - 2. Divisions 2 through 33 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

### 1.3. DEFINITIONS

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

### 1.4. QUALITY ASSURANCE

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

## **PART 2 PRODUCTS**

### 2.1. MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the

visual and functional performance of in-place materials.

**PART 3 EXECUTION**

**3.1. EXAMINATION**

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

### 3.2. PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

### 3.3. PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces. Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  - 3. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
  - 4. NOTE: existing painted surfaces on this project are presumed to contain lead.
    - a. Contractors bidding for renovation work should be compliant with the requirements of the Cal OSHA lead Construction Standard (Title 8 CCR 1532.1).
    - b. Contractor is to perform all cutting, demolition and disposal of existing painted surfaces in accordance with Cal OSHA and all relevant Local, State and Federal codes.
    - c. Contractor shall use lead trained workers where necessary using appropriate worker protection and engineering controls.
    - d. Construction activities impacting existing painted surfaces shall not include the use of wire brushing, flame torching, dry scraping, sanding, stripping abrasive methods or heat guns unless proper engineering controls and worker protection are in place which are compliant with Cal OSHA and all relevant codes.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
  - 3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

[END OF SECTION 017329]

**1.01 GENERAL**

Guarantees from Subcontractors shall not limit Contractor's warranties and guarantees to the District. Whenever possible, Contractor shall cause warranties of Subcontractors to be made directly to the District. If such warranties are made to Contractor, Contractor shall assign such warranties to the District prior to final payment.

**1.02 WARRANTIES**

Warranty of Title:

No material, supplies, or equipment for the Work under this Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. Contractor warrants good title to all material, supplies and equipment installed or incorporated in the Work and agrees upon completion of all Work to deliver to the premises together with all improvements and appurtenances constructed or placed thereon by him to the District free from any claim, liens, security, and/or interest. No corporation shall have any right to a lien upon the premises or any improvement or appurtenances thereon, provided that this shall not preclude Contractor from installing metering devices and other equipment of utility companies of municipalities, the title of which is commonly retained by the utility company or the municipality. In the event of the installation of any such metering device or equipment, Contractor shall advise the District as to the legal District thereof. Nothing contained in this paragraph, however, shall defeat or impair the right of such persons furnishing materials or labor under any law permitting such persons to look to funds due to Contractor in the hands of the District. The provisions of this Paragraph shall be inserted in all subcontracts to all persons furnishing materials for the Work when no formal contract is entered into for such materials.

**1.03 GUARANTEES**

Responsibility:

The General Conditions of the Contract cover the Contractor's responsibility to remedy defects due to faulty workmanship and materials which shall appear within the initial (or any extended) warranty periods from the date of Project acceptance. This requirement is also included in the Performance Bond.

**1.04 FORM OF GUARANTEE**

Submit written guarantees, in the form contained at the end of this Section.

**1.05 SUBMITTAL REQUIREMENTS**

- A. Assemble required guarantees, bonds, and service and maintenance contracts.
- B. Number of electronic copies required: One (1) each.
- C. Number of hard copies required: One (1) each.
- D. Table of Contents: Neatly typed and in orderly sequence. Provide complete information for each item as follows:
  1. Product or Work item.
  2. Firm name, address, and telephone number; and name of principal.
  3. Scope.
  4. Date of beginning of guarantee, bond, or service and maintenance contract.
  5. Duration of guarantee, bond, or service and maintenance contract.
  6. Contractor's name, address, and telephone number; and name of principal.
  7. Provide information for the District's personnel:

- a. Proper procedure in case of failure.
- b. Circumstances that might affect the validity of guarantee or bond.

**1.06 FORM OF SUBMITTALS**

- A. Prepare in duplicate packets.
- B. Format:
  - 1. Size 8-1/2" x 11" sheets punched for 3-ring binder. Fold larger sheets to fit into binders.
  - 2. Identify each packet on the cover with typed or printed title, "GUARANTEES AND BONDS," and the following:
    - a. Title of Project.
    - b. Name of Contractor.
- C. Binders: Commercial quality, 3-ring, with durable and cleanable plastic covers.

**1.07 TIME OF SUBMITTALS**

- A. Within ten (10) days after date of Substantial Completion, prior to request for final payment.
- B. For Work activities, where Final Completion is delayed materially beyond the date of Substantial Completion, provide updated submittal within ten (10) days after Final Completion, listing the date of Final Completion as the start of the Guarantee to Repair Period.

**1.08 SUBMITTALS REQUIRED**

- A. Submit guarantees, bonds, and service and maintenance contracts specified in the individual Sections.
- B. Form: Guarantees or warranties for more than the twelve months indicated herein shall be in the form of a guarantee written on the letterhead of Contractor, subcontractor or supplier doing the Work and/or supplying the item to be guaranteed.
- C. Any guarantee form that has not been copied identically from the District's form (sample at end of this Section) and is not on letterhead will not be accepted.
- D. Several Sections of the Specifications require special guarantees and/or extended warranties. Refer to each Section.
- E. See following pages for contractor closeout and guarantee forms.

**Contract Closeout Forms**

**CONTRACTOR'S CERTIFICATE OF SUBSTANTIAL COMPLETION**

OWNER

CONSTRUCTION MANAGER

ARCHITECT

**TO:**

**PROJECT:**

**ATTENTION:** On site Construction Manager: \_\_\_\_\_

**FROM:** \_\_\_\_\_

Firm or Corporation

This is to certify that I, \_\_\_\_\_ am an authorized official of \_\_\_\_\_ working in the capacity of \_\_\_\_\_ and have been properly authorized by said firm or corporation to sign the following statements pertaining to the subject contract:

I know of my own personal knowledge, and do hereby certify, that the work of the contract described above has been substantially performed in accordance with, and in conformity to, the contract drawings and specifications. A list of all incomplete work is attached.

The Contractor hereby releases the Owner and its agents from all claims of and liability to the Contractor for anything done or furnished for or relating to the work, as specified in the Project Manual, except demands against the owner for the remainder of progress payments retained to date, and unresolved written claims prior to this date.

The contract work is now substantially complete, ready for its intended use, and ready for your inspection. You are requested to issue a Certificate of Substantial Completion.

Signature \_\_\_\_\_

Date \_\_\_\_\_

**CONTRACTOR'S CERTIFICATE OF FINAL COMPLETION**

OWNER

CONSTRUCTION MANAGER

ARCHITECT

**TO:**

**PROJECT:**

**ATTENTION:** On site Construction Manager: \_\_\_\_\_

**FROM:**

Firm or Corporation

This is to certify that I, \_\_\_\_\_ am an authorized official

of \_\_\_\_\_ working in the capacity of \_\_\_\_\_ and have been properly authorized by said firm or corporation to sign the following statements pertaining to the subject contact:

I know of my own personal knowledge, and do hereby certify, that the work of the contract described above has been substantially performed, and materials used and installed to date in accordance with, and in conformity to, the contract drawings and specifications.

The contract work is now complete in all parts and requirements, excepting the attached list of minor deficiencies and the reasons for each being incomplete to date, for which exemption from final payment requirements is requested (if no exemptions requested, write "none") \_\_\_\_\_. The work is now ready for your final inspection. The following items required from the Contractor prior to application for final payment are submitted herewith, if any:

I understand that neither the issuance by the Construction Manager of a Notice of Completion, nor the acceptance thereof by the Owner, shall operate as a bar to claim against the Contractor under the terms of the guarantee provisions of the contract documents.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**FINAL WAIVER OF LIEN**

TO ALL WHOM IT MAY CONCERN:

WHEREAS the undersigned has been employed by \_\_\_\_\_

to furnish labor and materials for (A) \_\_\_\_\_ work, under a contract for the in the City of \_\_\_\_\_, County of \_\_\_\_\_, State of California, of which the \_\_\_\_\_ is the Owner.

NOW THEREFORE, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, for and in consideration of the sum of (B) \_\_\_\_\_ dollars paid simultaneously herewith, the receipt whereof is hereby acknowledged by the undersigned, the undersigned does hereby waive and release any lien\* rights to, or claim of lien with respect to and on said above-described premises, and the improvements thereon, and on the monies or other consideration due or to become due from the Owner, on account of labor, services, materials, fixtures, apparatus or machinery heretofore or which may hereafter be furnished by the undersigned to or for the above-described premises by virtue of said contract.

(C)  
(Name of sole ownership, corporation or partnership)

(Signature of Authorized Representative)

Title:

**INSTRUCTIONS FOR FINAL WAIVER:**

- (A) Fill in nature and extent of work, strike the word labor or the word materials if not in your contract.
- (B) Amount shown should be the amount actually received and equal to total amount of contract as adjusted.
- (C) If waiver is for a corporation name should be used, and title of officer signing waiver should be set forth; if waiver is for a partnership, the partnership name should be used, partner should sign and designate himself as partner.

\* The word lien as used herein shall include Stop Orders, Stop Notices, or Freeze Orders on monies or other consideration of the Owner which are due or to become due on the Contract referenced above.

**CONSENT OF SURETY FOR FINAL PAYMENT PROJECT**

**NAME:**

**LOCATION:** \_\_\_\_\_

**TYPE OF CONTRACT:** \_\_\_\_\_

**AMOUNT OF CONTRACT:** \_\_\_\_\_

In accordance with the provisions of the above-named contract between \_\_\_\_\_

and the Contractor, the following named Surety: \_\_\_\_\_

on the Payment Bond of the following named Contractor: \_\_\_\_\_

hereby approves of final payment to the Contractor, and further agrees that said final payment to the Contractor shall not relieve the Surety Company named herein of any of its' obligations to the following named Owner (as set forth in said Surety company's bond):

IN WITNESS WHEREOF, the Surety Company has hereunto set its hand and seal this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

(Name of Surety Company)

\_\_\_\_\_

(Seal Here)

(Signature of Authorized Representative)

\_\_\_\_\_

Title:

\_\_\_\_\_

**AFFIDAVIT OF PAYMENT**

TO ALL WHOM IT MAY CONCERN:

WHEREAS, the undersigned has been employed by the \_\_\_\_\_ to furnish labor and materials under a contract dated \_\_\_\_\_ for the \_\_\_\_\_ in the County of \_\_\_\_\_, State of California, of which the \_\_\_\_\_ is the Owner.

NOW, THEREFORE, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, the undersigned, as the Contractor for the above-named Contract pursuant to the Conditions of the Contract, hereby certifies that, except listed below, he has paid in full or has otherwise satisfied all obligations for all materials and equipment furnished, for all work, labor and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or his property might in any way be held responsible.

EXCEPTIONS: (If none, write "None." If required by the Owner, the Contractor shall furnish a bond satisfactory to the Owner for each Exception.) \_\_\_\_\_.

\_\_\_\_\_  
Contractor (Name of sole Ownership, corporation or partnership)

\_\_\_\_\_  
(Signature of Authorized Representative)

\_\_\_\_\_  
Title

**AFFIDAVIT OF RELEASE OF LIENS BY THE CONTRACTOR**

TO ALL WHOM IT MAY CONCERN:

WHEREAS the undersigned has been employed by the \_\_\_\_\_ to furnish labor and materials for Bid # \_\_\_\_\_ under a contract dated \_\_\_\_\_ for the \_\_\_\_\_ in the County of \_\_\_\_\_, State of California, of which the \_\_\_\_\_ is the Owner.

NOW, THEREFORE, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, the undersigned, as the Contractor for the above-named Contract pursuant to the Conditions of the Contract, hereby certifies that to the best of his knowledge, information and behalf, except as listed below, the Releases or Waivers of Lien\* attached hereto include the Contractor, all subcontractors, all suppliers of materials and equipment, and all performers of work, labor or services, who have or may have liens against any property of the Owner and on the monies or other considerations due or to become due from the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS: (If none, write "None." If required by the Owner, the Contractor shall furnish bond satisfactory to the Owner for each Exception.) \_\_\_\_\_.

ATTACHMENTS:

- 1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
- 2. Separate Release or Waiver of Liens from Subcontractors and material and equipment suppliers.

\_\_\_\_\_  
Contractor (Name of sole ownership corporation or partnership)

\_\_\_\_\_  
(Signature of Authorized Representative)

\_\_\_\_\_  
Title

\* The work lien as used herein shall include Stop Orders, Stop Notices, or Freeze Orders on the monies other consideration of the Owner which are due or to become due on the Contract referenced above.

**HAZARDOUS MATERIALS STATEMENT**

THE FORM BELOW IS FURNISHED FOR THE CONVENIENCE OF EQUIPMENT OR MATERIALS MANUFACTURERS, DISTRIBUTORS, SUPPLIERS AND THE CONTRACTOR AND MAY BE REPRODUCED AS NECESSARY TO COMPLY WITH SUBMITTAL DOCUMENTATION AS DEFINED IN "SUPPLEMENTARY CONDITIONS".

I, \_\_\_\_\_,  
(Name) Please Print or Type (Title)

of \_\_\_\_\_, do hereby declare

that in completing the work of the Bid # \_\_\_\_\_ no manufactured materials assembly/device or item of construction will contain, or in itself is composed of, any materials listed (by Federal or State EPA or Federal or State health agencies) as a hazardous material.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

THIS STATEMENT MUST BE NOTARIZED.

**Attach the "California All-Purpose Acknowledgement" duly notarized.**

**WARRANTY FORM**

We hereby warrant that the \_\_\_\_\_ which we have provided in the \_\_\_\_\_ has been completed in accordance with the requirements of Specification Section \_\_\_\_\_ and the Contract Documents.

We agree to repair or replace any or all of our work, together with any other adjacent work which may be displaced by so doing, that may prove to be defective in its workmanship or material within a period of 1 year from the date of acceptance of the above named project by the Owner; and we also agree to repair any and all damages resulting from such defects, all without additional expense to the Owner, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with the above mentioned conditions within five (5) day after being notified in writing by the Owner, we collectively or separately do hereby authorize the Owner to proceed to have such defective work repaired or replaced and made good at our expense, and we will honor and pay the costs and charges therefore upon demand.

Signed: \_\_\_\_\_ Date \_\_\_\_\_

Subcontractor's name:  
Address:  
License Number:

Countersigned: \_\_\_\_\_ Date \_\_\_\_\_  
Contractors name:  
Address:  
License Number: or  
Manufacturer's Name Address:

OR  
Signed: \_\_\_\_\_ Date \_\_\_\_\_  
Contractors name:  
Address:  
License Number:

THIS STATEMENT MUST BE NOTARIZED.  
Attach the "California All-Purpose Acknowledgement" duly notarized.

**(CONTRACTOR LETTERHEAD)**

**GUARANTEE**

Project Name: \_\_\_\_\_ Date: \_\_\_\_\_

Project Location: \_\_\_\_\_

Project Number: \_\_\_\_\_

GUARANTEE FOR \_\_\_\_\_  
(Specification Section and Contract No.) (The "Contract"), between The District

("The District") and

\_\_\_\_\_, (Contractor)

\_\_\_\_\_  
\_\_\_\_\_  
(Name of Contractor or Subcontractor)

hereby guarantees to The District that the portion of the Work described as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

which it has provided for the above-referenced project, is of good quality; free from defects; free from any liens, claims, and security interests; and has been completed in accordance with Specification Section \_\_\_\_\_ and the other requirements of the Contract.

The undersigned further agrees that, if at any time within \_\_\_\_\_ months after the date of the guarantee the undersigned receives notice from The District that the aforesaid portion of the Work is unsatisfactory, faulty, deficient, incomplete, or not in conformance with the requirements of the Contract, the undersigned will, within five (5) calendar days after receipt of such notice, correct, repair, or replace such portion of the Work, together with any other parts of the Work and any other property which is damaged or destroyed as a result of such defective portion of the Work or the correction, repair, or replacement thereof; and that it shall diligently and continuously prosecute such correction, repair, or replacement to completion.

In the event the undersigned fails to commence such correction, repair, or replacement within five (5) calendar days after such notice, or to diligently and continuously prosecute the same to completion, the undersigned, collectively and separately, do hereby authorize The District to undertake such correction, repair, or replacement at the expense of the undersigned; and Contractor will pay to The District promptly upon demand all costs and expenses incurred by The District in connection therewith.

SUBCONTRACTOR

Signed: \_\_\_\_\_ Title: \_\_\_\_\_ Typed  
Name: \_\_\_\_\_ Name  
of Firm: \_\_\_\_\_  
Contractor License Classification: \_\_\_\_\_  
License Number: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone Number: \_\_\_\_\_

CONTRACTOR

Signed: \_\_\_\_\_ Title: \_\_\_\_\_ Typed  
Name: \_\_\_\_\_ Name  
of Firm: \_\_\_\_\_ Date:  
\_\_\_\_\_

[END OF SECTION 017800]

## Division 26 Electrical

### 26 05 00 - GENERAL ELECTRICAL REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION OF WORK:

- A. The work of this Section consists of providing all required labor, supervision, materials and equipment to satisfactorily complete all electrical installations that are shown on the Drawings, included in these specifications, or otherwise needed for a complete and fully operating facility.
- B. Furnish and install all required in-place equipment, conduits, conductors, cables and any miscellaneous materials for the satisfactory interconnection and operation of all associated electrical systems.

## 1.02 RELATED WORK:

A. This Section provides the basic Electrical Requirements which supplement the General Requirements of Division 01 and apply to all Sections of Division 26.

## 1.03 SUBMITTALS:

A. As specified in Division 01. Submit to the Architect shop drawings, manufacturer's data and certificates for equipment, materials and finish, and pertinent details for each system specified. Information to be submitted includes manufacturer's descriptive literature of cataloged products, equipment, drawings, diagrams, performance and characteristic curves as applicable, test data and catalog cuts. Obtain written approval before procurement, fabrication, or delivery of the items to the job site. Partial submittals are not acceptable and will be returned without review. Furnish manufacturer's name, trade name, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference, applicable Federal, Industry and Technical Society Publication References, and years of satisfactory service of each item required to establish contract compliance. Photographs of existing installations and data submitted in lieu of catalog data are not acceptable and will be returned without approval.

B. Organize submittals for equipment and items related to each specification section together as a package.

C. Proposed substitutions of products will not be reviewed or approved prior to awarding of the Contract.

D. Substitutions shall be proven to the Architect or Engineer to be equal or superior to the specified product. Architect's decision is final. The Contractor shall pay all costs incurred by the Architect and Engineer in reviewing and processing any proposed substitutions whether or not a proposed substitution is accepted.

E. If a proposed substitution is rejected, the contractor shall furnish the specified product at no increase in contract price.

F. If a proposed substitution is accepted, the contractor shall be completely responsible for all dimensional changes, electrical changes, or changes to other work which are a result of the substitution. The accepted substitution shall be made at no additional cost to the owner or design consultants.

## 1.04 QUALITY ASSURANCE:

A. Codes: All electrical equipment and materials, including installation and testing, shall conform to the latest editions following applicable codes:

1. California Electrical Code (CEC).

2. Occupational Safety and Health Act (OSHA) standards.

3. All applicable local codes, rules and regulations.

4. Electrical Contractor shall possess a C-10 license and all other licenses as may be required.

Licenses shall be in effect at start of this contract and be maintained throughout the duration of this contract.

B. Variances: In instances where two or more codes are at variance, the most restrictive requirement shall apply.

C. Standards: Equipment shall conform to applicable standards of American National Standards Institute (ANSI), Electronics Industries Association (EIA), Institute of Electrical and Electronics Engineers (IEEE), and National Electrical Manufacturers Association (NEMA).

D. Underwriter Laboratories (UL) listing is required for all equipment and materials where such listing is offered by the Underwriters Laboratories. Provide service entrance labels for all equipment required by the NEC to have such labels.

E. The electrical contractor shall guarantee all work and materials installed under this contract for a period of one (1) year from date of acceptance by owner.

F. All work and materials covered by this specification shall be subject to inspection at any an all times by representatives of the owner. Work shall not be closed in or covered before inspection and approval by the owner or his representative. Any material found not conforming with these specifications shall, within 3 days after being notified by the owner, be removed from premises; if said material has been installed, entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the contractor.

#### 1.05 CONTRACT DOCUMENTS:

##### A. Drawings and Specifications:

1. In the case of conflict between the drawings and specifications, the specifications shall take precedence.

2. Drawings and specifications are intended to comply with all law, ordinances, rules and regulations of constituted authorities having jurisdiction, and where referred to in the Contract Documents, said laws, ordinance, rules and regulations shall be considered as a part of said Contract Documents within the limits specified. The Contractor shall bear all expenses of correcting work done contrary to said laws, ordinance, rules and regulations if the Contractor knew or should have known that the work as performed is contrary to said laws, ordinances, rules and regulations and if the Contractor performed same (1) without first consulting the Architect for further instructions regarding said work and/or (2) disregarded the Architect's instructions regarding said work.

##### B. Drawings: The Electrical Drawings shall govern the general layout of the completed construction.

1. Locations of equipment, panels, pull boxes, conduits, stub-ups, ground connections are approximate unless dimensioned; verify locations with the Architect prior to installation.

2. Review the Drawings and Specification Divisions of other trades and perform the electrical work that will be required for those installations.

3. Should there be a need to deviate from the Electrical Drawings and Specifications, submit written details and reasons for all changes to the Architect for approval.

4. The general arrangement and location of existing conduits, piping, apparatus, etc., is approximate. The drawings and specifications are for the assistance and guidance of the contractor, exact locations, distances and elevations are governed by actual field conditions. Accuracy of data given herein and on the drawings is not guaranteed. Minor changes may be necessary to accommodate work. The contractor is responsible for verifying existing conditions. Should it be necessary to deviate from the design due to interference with existing conditions or work in progress, claims for additional compensation shall be limited to those for work required by unforeseen conditions as determined by the Architect.

5. All drawings and divisions of these specifications shall be considered as whole. The contractor shall report any apparent discrepancies to the Architect prior to submitting bids.

6. The contractor shall be held responsible to have examined the site and compared it with the specifications and plans and to have satisfied himself as to the conditions under which the work is to be performed. He shall be held responsible for knowledge of all existing conditions whether or not accurately described. No subsequent allowance shall be made for any extra expense due to failure to make such examination.

#### 1.06 CLOSEOUT SUBMITTALS:

A. Manuals: Furnish manuals for equipment where manuals are specified in the equipment specifications or are specified in Division 01.

#### 1.07 COORDINATION:

A. Coordinate the electrical work with the other trades, code authorities, utilities and the Architect.

B. Provide and install all trenching, backfilling, conduit, pull boxes, splice boxes, etc. for all services to the locations indicated on the Drawings.

C. Contractor shall pay all inspection and other applicable fees and procure all permits necessary for the completion of this work.

D. Where connections must be made to existing installations, properly schedule all the required work, including the power shutdown periods.

E. When two trades join together in an area, make certain that no electrical work is omitted.

#### 1.08 JOB CONDITIONS:

A. Operations: Perform all work in compliance with Division 01.

1. Keep the number and duration of power shutdown periods to a minimum.

2. Show all proposed shutdowns and their expected duration on the construction schedule. Schedule and carry out shutdowns so as to cause the least disruption to operation of the Owner's facilities.

3. Carry out shutdown only after the schedule has been approved, in writing, by the owner. Submit power interruption schedule 15 days prior to date of interruption.

B. Construction Power: Unless otherwise noted in Division 01 of these specifications, contractor shall make all arrangements and provide all necessary facilities for temporary construction power from the owner's on-site source. Energy costs shall be paid for by the Owner.

C. Storage: Provide adequate storage for all equipment and materials which will become part of the completed facility so that it is protected from weather, dust, water, or construction operations.

#### 1.09 DAMAGED PRODUCTS:

A. Notify the Architect in writing in the event that any equipment or material is damaged. Obtain approval from the Architect before making repairs to damaged products.

#### 1.10 LOCATIONS:

A. General: Use equipment, materials and wiring methods suitable for the types of locations in which they are located.

B. Dry Locations: All those indoor areas which do not fall within the definition below for Wet Locations and which are not otherwise designated on the Drawings.

C. Wet Locations: All locations exposed to the weather, whether under a roof or not, unless otherwise designated on the Drawings.

#### 1.11 SAFETY AND INDEMNITY:

A. The Contractor is solely and completely responsible for conditions of the job site including safety of all persons and property during performance of the work. This requirement will apply continually and not be limited to normal working hours. The contractor shall provide and maintain throughout the work site proper safeguards including, but not limited to, enclosures, barriers, warning signs, lights, etc. to prevent accidental injury to people or damage to property.

B. No act, service, drawing review or construction review by the Owner, the Engineer or their Consultants is intended to include reviews of the adequacy of the Contractors safety measures in or near the construction site.

C. The Contractor performing work under this Division of the Specifications shall hold harmless, indemnify, and defend the Owner, the Engineer, their consultants, and each of their officers, agents and employees from any and all liability claims, losses, or damage arising out of or alleged to arise from bodily injury, sickness, or death of a person or persons and for all damages arising out of injury to or destruction of property arising directly or indirectly out of or in connection with the performance of the work under this Division of the Specifications, and from the Contractor's negligence in the performance of the work described in the construction contract documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer, their Consultants or their officers, agents and employees.

D. If a work area is encountered that contains hazardous materials, the contractor is advised to coordinate with the owner and its abatement consultant for abatement of hazardous material by the Owner's Representative. "Hazardous materials" means any toxic substance regulated or controlled by OSHA, EPA, State of California or local rules, regulations and laws. Nothing herein shall be construed to create a liability for Aurum Consulting Engineers regarding hazardous materials abatement measures, or discovery of hazardous materials.

#### 1.12 ACCESS DOORS:

A. The contractor shall install access panels as required where floors, walls or ceilings must be penetrated for access to electrical, control, fire alarm or other specified electrical devices. The minimum size panel shall be 14" x 14" in usable opening. Where access by a service person is required, minimum usable opening shall be 18" x 24".

B. All access doors installed lower than 7'-0" above finished floor and exposed to public access shall have keyed locks.

C. Where specific information or details relating to access panels differ from Division 26 paragraph 1.12 of these specifications or shown on the electrical drawings and details or under other Divisions of work, those requirements shall supersede these specifications.

#### 1.13 ARC FLASH:

A. The contractor shall install a clearly visible arc flash warning to the inside door of all panelboards and industrial control panels, as well as to the front of all switchboards and motor control centers that are a part of this project.

B. The warning shall have the following wording: line 1 “WARNING” (in large letters), line 2 “Potential Arc Flash Hazard” (in medium letters), line 3 & 4 “Appropriate Personal Protective Equipment and Tools required when working on this equipment”.

#### 1.14 EMERGENCY BOXES:

A. All boxes and enclosures for emergency circuits shall be permanently marked with a readily visible red spray-painted mark.

### PART 2 - PRODUCTS

#### 2.01 STANDARD OF QUALITY:

A. Products that are specified by manufacturer, trade name or catalog number establish a standard of quality and do not prohibit the use of equal products of other manufacturers provided they are established to be equal to the specified product and approved by the Architect prior to installation.

B. Material and Equipment: Provide materials and equipment that are new and are current products of manufacturers regularly engaged in the production of such products. The standard products shall have been in satisfactory commercial or industrial use for two years prior to bid opening. The two-year period includes use of equipment and materials of similar size under similar circumstances. For uniformity, only one manufacturer will be accepted for each type of product.

C. Service Support: Submit a certified list of qualified permanent service organizations including their addresses and qualification for support of the equipment. These service organizations shall be convenient to the equipment installation and able to render service to the equipment on a regular and emergency basis during the warranty period of the contract.

D. Manufacturer's Recommendations: Where installation procedures are required to be in accordance with manufacturer's recommendations, furnish printed copies of the recommendations prior to installation. Installation of the item shall not proceed until recommendations are received. Failure to furnish recommendation shall be cause for rejection of the equipment or material.

#### 2.02 NAMEPLATES:

A. For each piece of electrical equipment, provide a manufacturer's nameplate showing his name, location, the pertinent ratings, the model designation, and shop order number.

B. Identify each piece of equipment and related controls with a rigid laminated engraved plastic nameplate. Unless otherwise noted, nameplates shall be melamine plastic 0.125-inch-thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 0.5 by 2.5 inches unless otherwise noted. Where not otherwise specified, lettering shall be a minimum of 0.25-inch-high normal block style. Engrave nameplates with the inscriptions indicated on the Drawings and, if not so indicated, with the equipment name. Securely fasten nameplates in place using two stainless steel or brass screws.

#### 2.03 FASTENERS:

A. Fasteners for securing equipment to walls, floors and the like shall be either hot-dip galvanized after fabrication or stainless steel.

#### 2.04 FINISH REQUIREMENTS:

A. Equipment: Refer to each electrical equipment section of these Specifications for painting requirements of equipment enclosures. Repair any final paint finish which has been damaged or is otherwise unsatisfactory, to the satisfaction of the Architect.

B. Wiring System: In finished areas, paint all exposed conduits, boxes and fittings to match the color of the surface to which they are affixed.

## PART 3 - EXECUTION

### 3.01 WORKMANSHIP:

A. Ensure that all equipment and materials fit properly in their installation.

B. Perform any required work to correct improperly fit installation at no additional expense to the owner.

C. All electrical equipment and materials shall be installed in a neat and workmanship manner in accordance with the "NECA-1 Standard Practices for Good Workmanship in Electrical Contracting". Workmanship of the entire job shall be first class in every respect.

### 3.02 EQUIPMENT INSTALLATIONS:

A. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.

B. Do all the cutting and patching necessary for the proper installation of work and repair any damage done.

C. Earthquake restraints: all electrical equipment, including conduits over 2 inches in diameter, shall be braced or anchored to resist a horizontal force acting in any direction as per CBC Section 1616A Title 24, part 2, and ASCE7-10, Section 13.3 and 13.6 and Table 13.6-1.

D. Structural work: All core drilling, bolt anchor insertion, or cutting of existing structural concrete shall be approved by a California registered structural consulting engineer prior to the execution of any construction. At all floor slabs and structural concrete walls to be drilled, cut or bolt anchors inserted, the contractor shall find and mark all reinforcing in both faces located by means of x-ray, pachometer, or profometer. Submit sketch showing location of rebar and proposed cuts, cores, or bolt anchor locations for approval.

### 3.03 FIELD TEST:

A. Test shall be in accordance with Acceptance testing specifications issued by the National Electrical Testing Association (NETA).

B. Perform equipment field tests and adjustments. Properly calibrate, adjust and operationally check all circuits and components, and demonstrate as ready for service. Make additional calibration and adjustments if it is determined later that the initial adjustments are not satisfactory for proper performance. Perform equipment field test for equipment where equipment field tests are specified in the equipment Specifications. Give sufficient notice to the Architect prior to any test so that the tests may be witnessed.

C. Provide instruments, other equipment and material required for the tests. These shall be of the type designed for the type of tests to be performed. Test instrument shall be calibrated by a recognized testing laboratory within three months prior to performing tests.

D. Operational Tests: Operationally test all circuits to demonstrate that the circuits and equipment have been properly installed and adjusted and are ready for full-time service. Demonstrate the proper functioning of circuits in all modes of operation, including alarm conditions.

E. Re-testing will be required for all unsatisfactory tests after the equipment or system has been repaired. Re-test all related equipment and systems if required by the Architect. Repair and re- test equipment and systems which have been satisfactorily tested but later fail, until satisfactory performance is obtained.

F. Maintain records of each test and submit five copies to the Architect when testing is complete.

All tests shall be witnessed by the Architect. These records shall include:

1. Name of equipment tested.
2. Date of report.
3. Date of test.
4. Description of test setup.
5. Identification and rating of test equipment.
6. Test results and data.
7. Name of person performing test.
8. Owner or Architect's initials.

G. Items requiring testing shall be as noted in the additional electrical sections of these specifications.

#### 3.04 CLEANING EQUIPMENT:

A. Thoroughly clean all soiled surfaces of installed equipment and materials.

#### 3.05 PAINTING OF EQUIPMENT:

A. Factory Applied: Electrical equipment shall have factory applied painting system which shall, as a minimum, meet the requirements of NEMA ICS 6 corrosion-resistance test and the additional requirements specified in the technical section. B. Field Applied: Paint electrical equipment as required to match finish of adjacent surfaces.

#### 3.06 RECORDS:

A. Maintain one copy of the contract Drawing Sheets on the site of the work for recording the "as built" condition. After completion of the work, the Contractor shall carefully mark the work as actually constructed, revising, deleting and adding to the Drawing Sheets as required. The following requirements shall be complied with:

1. Cable Size and Type: Provide the size and type of each cable installed on project.
2. Substructure: Where the location of all underground conduits, pull boxes, stub ups and etc. where are found to differ than shown, carefully mark the correct location on the Drawings. Work shall be dimensioned from existing improvements.
3. Size of all conduit runs.
4. Routes of concealed conduit runs and conduit runs below grade.

5. Homerun points of all branch circuit.
6. Location of all switchgear, panels, MCC, lighting control panels, pull cans, etc.
7. Changes made as a result of all approved change orders, addendums, or field authorized revisions.
8. As Built: At the completion of the Work the Contractor shall review, certify, correct and turn over the marked-up Drawings to the Architect for his use in preparing "as built" plans.
9. As built Drawings shall be delivered to the Architect within ten (10) days of completion of construction.

### 3.07 CLEAN UP:

A. Upon completion of electrical work, remove all surplus materials, rubbish, and debris that accumulated during the construction work. Leave the entire area neat, clean, and acceptable to the Architect.

### 3.08 MECHANICAL AND PLUMBING ELECTRICAL WORK:

A. The requirements for electrical power and/or devices for all mechanical and plumbing equipment supplied and/or installed under this Contract shall be coordinated and verified with the following:

1. Mechanical and Plumbing Drawings.
2. Mechanical and Plumbing sections of these Specifications.
3. Manufacturers of the Mechanical and Plumbing equipment supplied.

B. The coordination and verification shall include the voltage, ampacity, phase, location and type of disconnect, control, and connection required. Any changes that are required as a result of this coordination and verification shall be a part of this Contract.

C. The Electrical Contractor shall furnish and install the following for all mechanical and plumbing equipment:

1. Line voltage conduit and wiring.
2. Disconnect switches.
3. Manual line motor starters.

D. Automatic line voltage controls and magnetic starters shall be furnished by the Mechanical and/or Plumbing Contractor and installed and connected by the Electrical Contractor. When subcontracted for by the Mechanical and/or Plumbing Contractor, all line voltage control wiring installed by the Electrical Contractor shall be done per directions from the Mechanical and/or Plumbing Contractor.

E. All low voltage control wiring for Mechanical and Plumbing equipment shall be installed in conduit. Furnishing, installation and connection of all low voltage conduit, boxes, wiring and controls shall be by the Mechanical and/or Plumbing Contractor.

F. Disconnects (Motor and Circuit)

1. Disconnect switches shall be as manufactured by ITE- Siemens, General Electric or Square D.

G. Disconnects (Motor: Fused):

1. Disconnect switches shall be provided and located at all motors.
2. Switches for three-phase motors shall be heavy-duty, horsepower rated three-pole, and surface mounted except as noted on drawings.
3. Switches containing more than three poles shall be as specified on the drawings.
4. Switches for single-phase, fractional horsepower motors shall be heavy-duty, horsepower rated.
5. Switches shall be horsepower rated.

H. Manual motor starters, where required, shall have toggle type operators with pilot light and melting alloy type overload relays, SQUARE D COMPANY, Class 2510, Type FG-1P (surface) or Type FS-1P (flush) or ITE, WESTINGHOUSE or GENERAL ELECTRIC equal.

**[END OF SECTION 260500]**

# 26 05 19 LINE VOLTAGE WIRE & CABLE

## PART 1 - GENERAL

### 1.01 DESCRIPTION OF WORK:

A. The work of this Section consists of providing all wire and cable rated 600 volts or less, including splices and terminations, as shown on the Drawings and as described herein.

### 1.02 RELATED WORK:

A. See the following Specification Section for work related to the work in this Section:

1. 260542 Conduits, Raceways and Fittings.
2. 260533 Junction and Pull Boxes.

### 1.03 Quality Assurance

A. Field tests shall be performed as specified in paragraph 3.04 of this Section.

## PART 2 - PRODUCTS

### 2.01 CONDUCTORS:

- A. Conductors shall be copper, type THHN/THWN/MTW oil and gasoline resistant, 600 volt rated insulation.
- B. Conductors shall be stranded copper.
- C. Minimum power and control wire size shall be No. 12 AWG unless otherwise noted.
- D. All conductors used on this Project shall be of the same type and conductor material.

### 2.02 CABLES:

- A. All individual conductors shall be copper with type THHN/THWN, 600 volt rated insulation.
- D. Insulation Marking - All insulated conductors shall be identified with printing colored to contrast with the insulation color.
- E. Color Coding - As specified in paragraph 3.03.
- F. Special Wiring - Where special wiring is proposed by an equipment manufacturer, submit the special wiring requirements to the Owner's Representative and, if approved, provide same.  
  
Special wire shall be the type required by the equipment manufacturer.
- G. Other Wiring - Wire or cable not specifically shown on the Drawings or specified, but required, shall be of the type and size required for the application and as approved by the Owner's Representative.
- H. Manufacturer - Acceptable manufacturers including Cablec, Southwire, or equal.

### 2.03 TERMINATIONS:

- A. Manufacturer - Terminals as manufactured by T&B, Burndy or equal.
- B. Wire Terminations – Stranded conductors shall be terminated in clamping type terminations which serve to contain all the strands of the conductor. Curling of a stranded conductor around a screw type terminal is not

allowed. For screw type terminations, use a fork type stake-on termination on the stranded conductor. Use only a stake-on tool approved for the fork terminals selected.

C. End Seals - Heat shrink plastic caps of proper size for the wire on which used.

#### 2.04 TAPE:

A. Tape used for terminations and cable marking shall be compatible with the insulation and jacket of the cable and shall be of plastic material.

### PART 3 - EXECUTION

#### 3.01 CABLE INSTALLATION:

A. Clean Raceways - Clean all raceways prior to installation of cables as specified in Section 260542 - Conduits Raceway and Fittings.

B. All line voltage wiring shall be installed in conduit.

C. All feeder conductors shall be continuous from equipment to equipment. Splices in feeders are not permitted unless specifically noted or approved by the Electrical Engineer.

D. All branch circuit wiring shall be run concealed in ceiling spaces, walls, below floors or in crawl spaces unless noted otherwise.

E. Cable Pulling - Exercise care in pulling wires and cables into conduit or wireways so as to avoid kinking, putting undue stress on the cables or otherwise abrading them. No grease will be permitted in pulling cables. Only soapstone, talc, or UL listed pulling compound will be permitted. The raceway construction shall be complete and protected from the weather before cable is pulled into it. Swab conduits before installing cables and exercise care in pulling, to avoid damage to conductors.

F. Bending Radius - Cable bending radius shall be per applicable code. Install feeder cables in one continuous length.

G. Equipment Grounding Conductors - Provide an equipment grounding conductor, whether or not it is shown on the Drawings, in all conduits or all raceways.

H. Panelboard Wiring - In panels, bundle incoming wire and cables which are No. 6 AWG and smaller, lace at intervals not greater than 6 inches, neatly spread into trees and connect to their respective terminals. Allow sufficient slack in cables for alterations in terminal connections. Perform lacing with plastic cable ties or linen lacing twine. Where plastic panel wiring duct is provided for cable runs, lacing is not necessary when the cable is properly installed in the duct.

#### 3.02 CABLE TERMINATIONS AND SPLICES:

A. Splices - UL Listed wirenuts.

B. Terminations - Shall comply with the following:

1. Make up and form cable and orient terminals to minimize cable strain and stress on device being terminated on.
2. Burnish oxide from conductor prior to inserting in oxide breaking compound filled terminal.

### 3.03 CIRCUIT AND CONDUCTOR IDENTIFICATION:

A. Color Coding - Provide color coding for all circuit conductors. Insulation color shall be white for neutrals and green for grounding conductors. Conductor colors shall be as follows:

VOLTAGE	208/120V	480/277V
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	Grey
Ground	Green	Green

B. Color coding shall be in the conductor insulation for all conductors #10 AWG and smaller; for larger conductors, color shall be either in the insulation or in colored plastic tape applied at every location where the conductor is readily accessible.

C. Circuit Identification - All underground distribution and service circuits shall be provided with plastic identification tags in each secondary box and at each termination. Tags shall identify the source transformer of the circuit and the building number(s) serviced by the circuit.

### 3.04 FIELD TESTS:

A. All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and ground of not less than the requirements of the CEC. All circuits shall be tested for proper neutral connections.

B. Insulation Resistance Tests: Perform insulation resistance tests on circuits with #2 AWG and larger conductors to be energized with a line-to-neutral voltage of 120 volts or more. Make these tests before all equipment has been connected. Test the insulation with a 500Vdc insulation resistance tester with a scale reading 100 megohms. The insulation resistance shall be 2 megohms or more. Submit results for review.

**[END OF SECTION 260519]**

## 26 05 33 OUTLET, JUNCTION & PULLBOXES

### PART 1 - GENERAL

#### 1.01 DESCRIPTION OF WORK:

A. The work of this Section consists of providing all required labor, supervision, materials and equipment to satisfactorily complete all electrical installations shown on the drawings, included in these Specification, or otherwise needed for a complete and fully operating facility. The work shall include but not be limited to the following:

B. Furnish and install all required material, supports and miscellaneous material for the satisfactory interconnection of all associated electrical systems.

#### 1.02 RELATED WORK:

A. See the following specification sections for work related to the work of this section.

1. 26 05 00 General Electrical Requirements.
2. 26 05 42 Conduits, Raceway and Fittings.
3. 26 05 19 Line Voltage Wire and Cable.

#### PART 2 - PRODUCTS

##### 2.01 OUTLET BOXES, JUNCTION AND PULL BOXES

A. Standard Outlet Boxes: Galvanized, steel, knock-out type of size and configuration best suited to the application indicated on the Drawings. Minimum box size shall be 4 inches square (octagon for most light fixtures) by 1-1/2 inches deep with mud rings as required.

B. Switch boxes: Minimum box size shall be 4 inches square by 1-1/2 inches deep with mud rings as required. Install multiple switches in standard gang boxes with raised device covers suitable for the application indicated.

C. Conduit bodies: Cadmium plated, cast iron alloy. Conduit bodies with threaded conduit hubs and neoprene gasketed, cast iron covers. Bodies shall be used to facilitate pulling of conductors or to make changes in conduit direction only. Splices are not permitted in conduit bodies.

Crouse-Hinds Form 8 Condulets, Appleton Form 35 Unilets or equal.

D. Sheet Metal Boxes: Use standard outlet or concrete ring boxes wherever possible; otherwise use a minimum 16-gauge galvanized sheet metal, NEMA I box sized to Code requirements with covers secured by cadmium plated machine screws located six inches on centers. Circle AW Products, Hoffman Engineering Company or equal.

E. Flush Mounted Pull boxes and Junction boxes: Provide overlapping covers with flush head cover retaining screws, prime coated.

#### PART 3 - EXECUTION

##### 3.01 OUTLET BOXES

A. General:

1. All outlet boxes shall finish flush with building walls, ceilings and floors except in mechanical and electrical rooms above accessible ceiling or where exposed work is called for on the Drawings.
2. Install raised device covers (plaster rings) on all switch and receptacle outlet boxes installed in masonry or stud walls or in furred, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
3. Leave no unused openings in any box. Install close-up plugs as required to seal openings.

B. Box Layout:

1. Outlet boxes shall be installed at the locations and elevations shown on the drawings or specified herein. Make adjustments to locations as required by structural conditions and to suit coordination requirements of other trades.
2. Locate switch outlet boxes on the latch side of doorways.
3. Outlet boxes shall not be installed back to back nor shall through-wall boxes be permitted. Outlet boxes on opposite sides of a common wall shall be separated horizontally by at least one stud or vertical structural member.
4. For outlets mounted above counters, benches or backsplashes, coordinate location and mounting heights with built-in units. Adjust mounting height to agree with required location for equipment served.
5. On fire rated walls, the total face area of the outlet boxes shall not exceed 100 square inches per 100 square feet of wall area.

#### C. Supports:

1. Outlet Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
2. Fixture outlet boxes installed in suspended ceiling of gypsum board or lath and plaster construction shall be mounted to 16-gauge metal channel bars attached to main ceiling runners.
3. Fixture outlet boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above where pendant mounted lighting fixture are to be installed on the box.
4. Fixture Boxes above tile ceilings having exposed suspension systems shall be supported directly from the structure above.
5. Outlet and / or junction boxes shall not be supported by grid or fixture hanger wires at any locations.

### 3.02 JUNCTION AND PULL BOXES

#### A. General:

1. Install junction or pull boxes where required to limit bends in conduit runs to not more than 360 degrees or where pulling tension achieved would exceed the maximum allowable for the cable to be installed. Note that these boxes are not shown on the Drawings.
2. Locate pull boxes and junction boxes in concealed locations above accessible ceilings or exposed in electrical rooms, utility rooms or storage areas.
3. Install raised covers (plaster rings) on boxes in stud walls or in furred, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
4. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
5. Identify circuit numbers and panel on cover of junction box with black marker pen.

#### B. Box Layouts:

1. Boxes above hung ceilings having concealed suspension systems shall be located adjacent to openings for removable recessed lighting fixtures.

C. Supports:

1. Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.

2. Boxes installed in suspended ceilings of gypsum board or lath and plaster construction shall be mounted to 16-gauge metal channel bars attached to main ceiling runners.

3. Boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above.

4. Boxes mounted above suspended acoustical tile ceilings having exposed suspension systems shall be supported directly from the structure above.

**[END OF SECTION 260533]**

## 26 05 42 CONDUITS, RACEWAYS & FITTINGS

### PART 1 - GENERAL

#### 1.01 DESCRIPTION OF WORK:

A. The work of this section consists of furnishing and installing conduits, raceways and fittings as shown on the Drawings and as described herein.

#### 1.02 RELATED WORK:

A. See the following specification sections for work related to the work in this section:

1. 26 05 43 Underground Ducts

2. 26 05 44 In Grade Pull Boxes

3. 26 05 45 Wiremold AL2000 Plugmold Multioutlet System

4. 26 05 19 Line Voltage Wire and Cable

5. 26 05 33 Junction and Pull Boxes

## PART 2 - PRODUCTS

### 2.01 CONDUITS, RACEWAYS:

A. Electrical Metallic Tubing (EMT) shall be hot-dip galvanized after fabrication. Couplings shall be compression or set-screw type.

B. Flexible Conduit: Flexible metal conduit shall be galvanized steel.

C. Galvanized Rigid Steel Conduit (GRS) shall be hot-dip galvanized after fabrication. Couplings shall be threaded type.

D. Rigid Non-metallic Conduit: Rigid non-metallic conduit shall be PVC Schedule 40 (PVC-40 or NEMA Type EPC-40) conduit approved for underground use and for use with 90° C wires.

E. Surface Raceway: Aluminum surface metal raceway shall be Wiremold AL2000 Series.

### 2.02 CONDUIT SUPPORTS:

A. Supports for individual conduits shall be galvanized malleable iron one-hole type with conduit back spacer.

B. Supports for multiple conduits shall be hot-dipped galvanized Unistrut or Superstrut channels, or approved equal. All associated hardware shall be hot-dip galvanized.

C. Supports for EMT conduits shall be galvanized pressed steel single hole straps.

D. Clamp fasteners shall be by wedge anchors. Shot in anchors shall not be allowed.

### 2.03 FITTINGS:

A. Provide threaded-type couplings and connectors for rigid steel conduits; provide steel compression (watertight), or steel set-screw type for EMT, (die-cast zinc or malleable iron type fittings are not allowed). Provide threaded couplings and Meyers hubs for rigid steel conduit exposed to weather.

B. Fittings for flexible conduit shall be Appleton, Chicago, IL, Type ST, O-Z Gedney Series 4Q by General Signal Corp., Terryville, CT, T & B 5300 series, or approved equal.

C. Fittings for use with rigid steel shall be galvanized steel or galvanized cast ferrous metal; access fittings shall have gasketed cast covers and be Crouse Hinds Condulets, Syracuse, NY, Appleton Unilets, Chicago, IL, or approved equal. Provide threaded-type couplings and connectors; set-screw type and compression-type are not acceptable.

D. Fittings for use with rigid non-metallic conduit shall be PVC and have solvent-weld-type conduit connections.

E. Union couplings for conduits shall be the Erickson type and shall be Appleton, Chicago, IL, Type EC, O-Z Gedney 3-piece Series 4 by General Signal Corp., Terryville, CT, or approved equal. Threadless coupling shall not be used.

F. Bushings:

1. Bushings shall be the insulated type.

2. Bushings for rigid steel shall be insulated grounding type, O-Z Gedney Type HBLG, Appleton Type GIB, or approved equal.

## G. Conduit Sealants:

1. Fire Retardant Types: Fire stop material shall be reusable, non-toxic, asbestos-free, expanding, putty type material with a 3-hour rating in accordance with UL Classification 35L4 or as specified on the Drawings.

## PART 3 - EXECUTION

### 3.01 CONDUIT, RACEWAY AND FITTING INSTALLATION:

A. For conduit runs exposed to weather provide rigid metal (GRS).

B. For conduit run underground, in concrete or masonry block wall and under concrete slabs, install minimum 3/4" size nonmetallic (PVC) with PVC elbows. Where conduits transition from underground or under slab to above grade install wrapped rigid metal (GRS) elbows and risers.

C. For conduit runs concealed in steel or wood framed walls or in ceiling spaces or exposed in interior spaces above six feet over the finished floor, install EMT.

D. Flexible metal conduit shall be used only for the connection of recessed lighting fixtures and motor connections unless otherwise noted on the Drawings. Liquid-tight steel flexible conduit shall be used for motor connections.

E. The minimum size raceway shall be 1/2-inch unless indicated otherwise on the Drawings.

F. Installation shall comply with the CEC.

G. From pull point to pull point, the sum of the angles of all of the bends and offset shall not exceed 360 degrees.

H. Conduit Supports: Properly support all conduits as required by the NEC. Run all conduits concealed except where otherwise shown on the drawings.

1. Exposed Conduits: Support exposed conduits within three feet of any equipment or device and at intervals not exceeding NEC requirements; wherever possible, group conduits together and support on common supports. Support exposed conduits fastened to the surface of the concrete structure by one-hole clamps, or with channels. Use conduit spacers with one-hole clamps.

a. Conduits attached to walls or columns shall be as unobtrusive as possible and shall avoid windows. Run all exposed conduits parallel or at right angles to building lines.

b. Group exposed conduits together. Arrange such conduits uniformly and neatly.

2. Support all conduits within three feet of any junction box, coupling, bend or fixture.

3. Support conduit risers in shafts with Unistrut Superstrut, or approved equal, channels and straps.

I. Moisture Seals: Provide in accordance with NEC paragraphs 230-8 and 300-5(g).

J. Where PVC conduit transitions from underground to above grade, provide rigid steel 90's with risers. Rigid steel shall be half-lap wrapped with 20 mil tape and extend minimum 12" above grade.

K. Provide a nylon pull cord in each empty raceway.

L. Provide galvanized rigid steel factory fittings for galvanized rigid steel conduit.

M. Slope all underground raceways to provide drainage; for example, slope conduit from equipment located inside a building to the pull box or manhole located outside the building.

N. Conduits shall be blown out and swabbed prior to pulling wires, or installation of pull cord in empty conduits.

**[END OF SECTION 260542]**

## 26 05 44 INGRADE PULL BOXES

### PART 1 - GENERAL

#### 1.01 DESCRIPTION OF WORK:

A. The work of this section consists of providing all labor, supervision, tools, materials, and performing all work necessary to furnish and install pre-cast concrete vaults, and pull boxes with necessary excavation.

#### 1.02 RELATED WORK:

A. See the following specification sections for work related to the work of this section.

1. 26 05 43 Underground Ducts.

2. 31 23 00 Trenching, Backfilling and Compacting UR.

#### 1.03 SUBMITTALS:

A. As specified in Section 26 05 00 and Division 01.

1. Catalog Data: Provide manufacturer's descriptive literature - Pre-cast Vaults, Pull Boxes and Accessories.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS AND EQUIPMENT:

##### A. General Requirements:

1. Pull boxes for electrical power, controls and other communication circuits shall consist of pre-cast reinforced concrete boxes, extensions' bases, and covers as specified herein and as indicated on the Drawings. Pre-cast units shall be the product of a manufacturer regularly engaged in the manufacture

of pre-cast vaults and pull boxes. Acceptable manufacturers are Christy, Utility Vault, Brooks, Associated Concrete or equal.

**B. Construction:**

1. Pre-cast concrete vaults and pull boxes for electrical power distribution and communication circuits with associated risers and tops shall conform to ASTM C478 and ACI 318. Pull boxes shall be the type noted on the Drawings and shall be constructed in accordance with the applicable details as shown. Tops and walls shall consist of reinforced concrete. Walls and bottom shall be of monolithic concrete construction. Duct entrances and windows shall be located near the corners of structures to facilitate cable racking.

**C. Covers:**

1. The word "ELECTRICAL" shall be cast in the top face of all electrical cable boxes. The word "Signal" or "Fire Alarm" shall be cast in the top of the boxes utilized for these systems.

**PART 3 - EXECUTION**

**3.01 INSTALLATION:**

A. Install pull boxes where required to limit bends in conduit runs to not more than 360 degrees or where pulling tension achieved would exceed the maximum allowable for the cable to be installed. Note that these boxes are not shown on the Drawings.

B. Pre-cast pull boxes shall be installed approximately where indicated on the Drawings. The exact location of each pull box shall be determined after careful consideration has been given to the location of other utilities, grading, and paving. All cable boxes and secondary pull boxes shall be installed with a minimum of 6-inch thick crushed rock or sand bedding.

C. Paved areas - Vaults and pull boxes located in areas to be paved shall be installed such that the top of the cover shall be flush with the finished surface of the paving.

D. Unpaved Areas - In unpaved areas, the top of vaults and pull box covers shall be approximately 2 inches above finished grade.

E. Joint Seals - Section joints of pre-cast vaults and pull boxes shall be sealed with compound as recommended by the manufacturer.

F. Trenching, Backfilling, and Compaction - Trenching, backfilling and compaction shall be as specified in Section 31 23 00 - Trenching, Backfilling and Compacting UR.

**[END OF SECTION 260544]**

## 26 28 16      CIRCUIT BREAKERS

### PART 1 - GENERAL

#### 1.01 DESCRIPTION OF WORK:

A. The work of this Section consists of providing circuit breakers as shown on the Drawings and as described herein.

1.02 RELATED WORK: See the following Specification Sections for work related to the work in this Section.

A. 26 05 00 General Electrical Requirements

#### 1.03 SUBMITTALS:

A. Shop Drawings - Submittals shall be in accordance with Section 26 05 00 and Division 01. For each circuit breaker furnished under this Contract, submit manufacturer's name, catalog data, and the following information:

1. Terminal connection sizes.
2. Voltage rating.
3. Breaker manufacturer, types, trip ratings and interrupting ratings.

B. Single Submittal - A single complete submittal is required for all products covered by this Section.

C. Closeout Submittals: Submit in accordance with and Section 26 05 00, operation and maintenance data for circuit breakers including nameplate data, parts lists, manufacturer's circuit breaker timer, current, coordination curves, factory and field test reports and recommended maintenance procedures.

### PART 2 - PRODUCTS

#### 2.01 CIRCUIT BREAKER: EACH CIRCUIT BREAKER SHALL CONSIST OF THE FOLLOWING:

A. A molded case breaker with an over center toggle-type mechanism, providing quick-make, quick-break action. Each circuit breaker shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole. Multipole circuit breakers shall have variable magnetic trip elements which are set by a

single adjustment to assure uniform tripping characteristics in each pole. Circuit breakers shall be of the bolt-on type unless otherwise noted.

B. Breaker shall be calibrated for operation in an ambient temperature of 40°C.

C. Each circuit breaker shall have trip indication by handle position and shall be trip-free.

D. Three pole breakers shall be common trip.

E. The circuit breakers shall be constructed to accommodate the supply connection at either end of the circuit breaker. Circuit breaker shall be suitable for mounting and operation in any position.

F. Breakers shall be rated as shown on Drawings.

G. Circuit breaker and/or Fuse/circuit breaker combinations for series connected interrupting ratings shall be listed by UL as recognized component combinations for use in the end use equipment in which it is installed. Any series rated combination used shall be marked on the end use equipment per CEC section 110-22.

H. Breakers shall be UL listed. Circuit breakers shall have removable lugs.

I. Lugs shall be UL listed for copper and aluminum conductors.

J. Breakers shall be UL listed for installation of mechanical screw type lugs.

K. Circuit breakers serving HACR rated loads shall be HACR type. Circuit breakers serving other motor loads shall be motor rated.

## PART 3 - EXECUTION

### 3.01 MOUNTING:

A. The highest breaker operating handle shall not be higher than 72 inches above the floor.

**[END OF SECTION 262816]**

## Division 27 Communications

### 27 15 01 FIRE ALARM COMMUNICATION CONDUCTORS AND CABLES

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION OF WORK:

A. The work of this Section consists of providing communication conductors and cable as shown on the Drawings and as described herein.

B. All work must comply with NECA 1 and NFPA 72.

##### 1.02 Wiring Method: Install wiring in metal raceway according to Division 26.

A. Install plenum cable in environmental air spaces, including plenum ceilings.

B. Fire alarm circuits and equipment control wiring associated with the fire alarm system shall be installed in a dedicated raceway system. This system shall not be used for any other wire or cable.

##### 1.03 Wiring Method:

A. Cables and raceways used for fire alarm circuits, and equipment control wiring associated with the fire alarm system, may not contain any other wire or cable.

B. Fire-Rated Cables: Use of 2-hour, fire-rated fire alarm cables, NFPA 70, Types MI and CI, is permitted.

C. Signaling Line Circuits: Power-limited fire alarm cables shall not be installed in the same cable or raceway as signaling line circuits.

1.04 Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with the fire alarm system to terminal blocks. Mark each terminal according to the system's wiring diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

1.05 Cable Taps: Use numbered terminal strips in junction, pull, and outlet boxes, cabinets, or equipment enclosures where circuit connections are made.

1.06 Color-Coding: Color-code fire alarm conductors differently from the normal building power wiring. Use one color-code for alarm circuit wiring and another for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire alarm system junction boxes and covers red.

1.07 Risers: Install at least two vertical cable risers to serve the fire alarm system. Separate risers in close proximity to each other with a minimum one-hour-rated wall, so the loss of one riser does not prevent the receipt or transmission of signals from other floors or zones.

1.08 Wiring to Remote Alarm Transmitting Device: 1-inch (25-mm) conduit between the fire alarm control panel and the transmitter. Install number of conductors and electrical supervision for connecting wiring as needed to suit monitoring function.

## PART 2 - CONTROL CIRCUIT CONDUCTORS

### 2.01 Minimum Conductor Sizes:

- A. Class 1 remote-control and signal circuits, No. 14 AWG.
- B. Class 2 low-energy, remote-control and signal circuits, No. 16 AWG.
- C. Class 3 low-energy, remote-control, alarm and signal circuits, No. 12 AWG.

### 2.02 - CONNECTIONS

- A. Comply with requirements in Division 26.

### 2.03 - FIRESTOPPING

- A. Comply with TIA/EIA-569-A standards.
- B. Comply with BICSI TDMM.

### 2.04 - GROUNDING

- A. For communications wiring, comply with ANSI-J-STD-607-A and with BICSI TDMM, "Grounding, Bonding, and Electrical Protection" Chapter.
- B. For low-voltage wiring and cabling, comply with requirements in Division 26.

### 2.05 - IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA/EIA- 606-A.
- B. Install a permanent wire marker on each wire at each termination.
- C. Identifying numbers and letters on the wire markers shall correspond to those on the wiring diagrams used for installing the systems.
- D. Wire markers shall retain their markings after cleaning.
- E. In each handhole, install embossed brass tags to identify the system served and function.

### 2.06 - FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Perform tests and inspections.
- C. Tests and Inspections:
  - 1. Visually inspect UTP and optical fiber cable jacket materials for UL or third-party certification markings. Inspect cabling terminations to confirm color-coding for pin assignments and inspect cabling connections to confirm compliance with TIA/EIA-568-B.1.
  - 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
  - 3. Test UTP cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not cross connection.

a. Test instruments shall meet or exceed applicable requirements in TIA/EIA-568-B.2. Perform tests with a tester that complies with performance requirements in "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

4. Optical Fiber Cable Tests:

a. Test instruments shall meet or exceed applicable requirements in TIA/EIA-568-B.1. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

b. Link End-to-End Attenuation Tests:

1) Multimode Link Measurements: Test at 850 or 1300 nm in 1 direction according to TIA/EIA-526-14-A, Method B, One Reference Jumper.

2) Attenuation test results for links shall be less than 2.0 dB. Attenuation test results shall be less than that calculated according to equation in TIA/EIA-568-B.1.

D. Document data for each measurement. Print data for submittals in a summary report that is formatted using Table 10.1 in BICSI TDMM as a guide or transfer the data from the instrument to the computer, save as text files, print, and submit.

E. End-to-end cabling will be considered defective if it does not pass tests and inspections. Prepare test and inspection reports.

[END OF SECTION 271501]

## DIVISION 28 – ELECTRONIC SAFETY & SECURITY

### SECTION 28 31 00 – FIRE DETECTION AND ALARM

#### PART 1: GENERAL

##### 1.01 Reference Standards

- A. This is to be used in the development of all fire alarm and signaling system designs for buildings and structures on District campuses.
- B. This standard shall apply to all fire alarm and signaling system components and equipment installed at District campuses during new construction, or as part of any improvement project.
- C. The work addressed in this section consists of a fire protection system, which may include, and at least will be coordinated with, all the following building systems or components:
  1. Fire Suppression Systems.
  2. HVAC, fire, smoke, and combination fire/smoke dampers.
  3. Emergency power systems.
  4. Central Control and Monitoring System.

5. Mass Notification Systems.
  6. Smoke Control Systems.
- D. Referenced Publications: The documents or portions that are listed in this section shall be considered part of the requirements of this document. (Utilize most recent editions.)
1. NFPA 1, Uniform Fire Code
  2. NFPA 13, Standard for the Installation of Sprinkler Systems
  3. NFPA 14, Standard for the Installation of Standpipe and Hose Systems
  4. NFPA 17, Standard for Dry Chemical Extinguishing Systems
  5. NFPA 17A, Standard for Wet Chemical Extinguishing Systems
  6. NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection
  7. NFPA 70, National Electrical Code
  8. NFPA 72, National Fire Alarm and Signaling Code, latest edition
  9. NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems
  10. NFPA 92, Standard for Smoke-Control Systems
  11. NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
  12. NFPA 101, Life Safety Code
  13. NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems
  14. NFPA 5000, Building Construction and Safety Code
  15. IBC-International Building Code
  16. IFC-International Fire Code
  17. UL Fire Protection Equipment Directory
  18. UL Standard 268, Smoke Detectors for Fire Protective Signaling Systems
  19. UL Standard 268A, Smoke Detectors for Duct Application
  20. UL Standard 346, Water flow Indicators for Fire Protective Signaling Systems
  21. UL Standard 464, Audible Signal Appliances
  22. UL Standard 521, Heat Detectors for Fire Protective Signaling Systems
  23. UL Standard 864, Control Units for Fire Protective Signaling Systems
  24. UL Standard 1424, Cables for Power—Limited Fire Protective Signaling Systems
  25. UL Standard 1480, Speakers for Fire Protective Signaling Systems
  26. UL Standard 1481, Power Supplies for Fire Protective Signaling Systems
  27. UL Standard 1711, Amplifiers for Fire Protective Signaling Systems

28. UL Standard 1971, Signaling Devices for the Hearing Impaired latest
29. UL Standard 2572, Control and Communication Units for Mass Notification Systems
30. ADA-Americans with Disabilities Act
31. American Society of Mechanical Engineers (ASME)/American National Standards Institute (ANSI)
32. ANSI A17.1, Elevator Code
33. ANSI A17.3, Elevator Code for Existing Elevators
34. ANSI A117.1, Accessibility Code

**1.02 General Conditions and Special Conditions:**

- A. The Contractor shall furnish all equipment, materials, tools, labor, engineering, drawings, etc. Necessary for a complete fire alarm system, with said system Being made ready for operation in accordance with the requirements of the Authority Having Jurisdiction (AHJ), as follows.
- B. The purpose of the contract documents is to convey to the Contractor the scope of work required, all of which the Contractor is responsible for furnishing, installing, adjusting, and make operable.
- C. The omission by the contract documents of any necessary system component(s) as required by the Authority Having Jurisdiction (AHJ) or applicable codes shall not relieve the Contractor of the responsibility for providing such necessity, without additional cost to the Owner.
- D. The Contractor shall visit the site before submitting their bid and shall examine all existing physical conditions, which may be material to the submission of the bid or performance of their work.
- E. No extra payments will be allowed to the Contractor as a result of extra work made necessary by their failure to adequately assess the physical conditions of the job site.
- F. Any case of error, omission, discrepancy, or lack of clarity shall be promptly identified to the Owner and/or Engineer for clarification prior to the bid due date.
- G. A Make Safe Meeting shall be scheduled with Construction Manager, and the contracting team prior to start of any demolition and construction activities in the existing buildings.

**1.03 Performance Guidelines:**

- A. Provide labor, materials, and equipment for a complete and functional fire alarm and supervisory signaling system as outlined. The Contractor shall be responsible for compliance with the entire project specifications as well as the following guidelines set by the equipment manufacturers and the 28.31.00 standards.
  1. Point addressable fire alarm control equipment, alarm signal initiating devices, notification appliances, annunciators, switches, relays, software and accessories.
  2. Monitoring of all fire alarm systems installed on The District campuses shall be monitored by the Districts fire alarm monitoring service.
  3. All systems shall have cell dialer as a back up.
  4. Core drilling and fire stopping.

5. Cutting, patching and painting.
6. Detailed shop drawings.
7. Coordination of the work with other trades for this project and coordination with any other Owner projects that are ongoing at the time of Fire Alarm Contractor's work.
8. On-site project supervision.
9. Permits, fees, and other charges required for the work.
10. Record documents.
11. Operating and maintenance instructions.
12. Training of Owner's personnel.
13. System testing, to include third party acceptance and 100% pre-testing prior to acceptance testing with the designated inspector from the office of Environmental Health, Safety, and Risk Management.
14. Warranty of equipment and labor. Warranty will begin upon The District receiving warranty letter and acceptance letter.
15. Conducting bi-weekly job progress meetings and issuing weekly written job progress reports to the District.
16. During the construction, it is the responsibility of the Contractor to assure that there is no disruption of the District's normal functions, such as studying, testing, classes, recreation program or administration.

#### **1.04 System Abbreviations and Definitions:**

- A. **ADAAG:** Americans with Disabilities Act Accessibility Guidelines.
- B. **AFF:** Above Finished Floor.
- C. **AHU:** Air-handling unit.
- D. **AHJ:** Authority Having Jurisdiction
- E. **Approved:** Unless otherwise stated, materials, equipment or submittals approved by the Owner, Engineer, or AHJ.
- F. **Circuit:** Wire path from a group of devices or appliances to a control panel or power supply.
- G. **Concealed:** Where used in connection with installation of piping or conduit and accessories, shall mean "hidden from sight" as in shafts, furred spaces, in soffits, or above suspended ceilings.
- H. **Contractor:** The company awarded the prime contract for this work and any of its subcontractors, vendors, suppliers, or fabricators.
- I. **CPU:** The central computer of a fire alarm control system.
- J. **Engineer:** Professional Engineer or NICET III
- K. **Exposed:** Where used in connection with installation of conduit and accessories, shall mean "visible" or "not concealed".

- L. **FACP:** Fire Alarm Control Panel.
- M. **FM:** Factory Mutual.
- N. **Furnish:** Supply materials.
- O. **HVAC:** Heating Ventilating and Air Conditioning.
- P. **IDC:** Initiating Device Circuit.
- Q. **Install:** Install materials, mount, and connect equipment or assemblies.
- R. **LED:** Light Emitting Diode.
- S. **Listed:** Materials or equipment included in a list published by a nationally recognized laboratory that maintains periodic inspection of production of listed equipment and materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.
- T. **LCD:** Liquid Crystal Display.
- U. **NFPA:** National Fire Protection Association.
- V. **NAC:** Notification Appliance Circuit.
- W. **NICET**National Institute for Certification in Engineering Technologies.  
:
- X. **Owner:** Pacific Grove Unified School District  
435 Hillcrest Ave, Pacific Grove CA  
93950
- Y. **BPS:** Booster Power Supply.
- AA. **SLC:** Signaling Line Circuit.
- BB. **Style 4:** As defined by NFPA 72, latest edition.
- CC. **Style 7:** As defined by NFPA 72, latest edition.
- DD. **Supervisory:** Signal indicating the need for action in connection with the supervision of fire suppression systems or equipment or with the maintenance of related systems.
- EE. **Trouble:** Signal initiated by the fire alarm system, indicative of a fault in a monitored circuit or component.
- GG. **UL Listed:** Materials or equipment listed by Underwriters Laboratories, Inc. (UL) and included in the most recent edition of the UL Fire Protection Equipment Directory.
- HH. **Zone:** Combination of one or more circuits or devices in a defined building area, i.e. 3 speaker circuits on a floor combined to form a single zone.
- II. **TEST:** Testing the margins to get the additional lines to tab over to the same indentation as the first line.

## 1.05 System Features:

- A. All system product lines shall be comprised of components capable of providing the following features when appropriate and specified by the project documents or the District:
  - 1. General alarm notification.
  - 2. Positive alarm sequence.
  - 3. Voice alarm notification. (Pacific Grove Unified District can provide the voice evacuation message if a satisfactory preprogrammed message is not available).
  - 4. Annunciator Panel, having remote microphone capability.
  - 5. Elevator capture/recall.
  - 6. Elevator power shunt trip.
  - 7. Smoke control/fan shutdown.
  - 8. Door release.
  - 9. Alarm Verification.
  - 10. Monitor water based and non-water-based fire suppression systems.
  - 11. Multiple channel digital voice.
  - 12. Provisions for Mass Notification signals (future).
- B. Visual notification at ADA levels shall be provided throughout the building.
- C. All systems are to be designed to provide manual means of alarm initiation at every exit.
- D. Duct detectors for damper control shall be located within 5 feet of the damper. Install per IBC methods of coverage.
- E. Weatherproof speaker strobe is to be added outside of all egress points of buildings and weatherproof box.
- F. Outside Speaker Appliance Circuits shall be on dedicated circuits so that exterior notification can be isolated / disabled for testing purposes.

**1.06 System Operation:**

- A. The point addressable fire alarm and supervisory signaling system shall perform the following functions:
  - 1. Continuous monitoring of the status of all fire alarm and supervisory signal initiating devices.
  - 2. Visible point annunciation of all fire alarm point trouble conditions at FACP.
  - 3. Operation of indicated control functions.
  - 4. Notify the campus fire alarm monitoring system and be associated to the building graphics.
- B. Change in status of any initiating device on the system shall:
  - 1. Activate audible and visible status change indicators and display the system point number, point description, status and message associated with the point.
  - 2. Permanently record the change in status, time, date, point description and message associated with the point in the historical event memory log.
  - 3. Notify the campus fire alarm monitoring system and be associated to the building graphics.
- C. Activation of any manual station, smoke detector, heat detector, or other initiating device shall cause the following functions to occur:
  - 1. Manual station operation shall:
    - a. Activate audible and visible status change indicators, display the system point number, point description, and message associated with the point on the system's operator terminal.
    - b. Permanently record the change in status, time, date, point description and message associated with the point in the historical event memory log.
    - c. Activate the audible and visible notification appliances throughout the building.
    - d. Notify the campus fire alarm monitoring system and be associated to the building graphics.
    - e. Smoke detector spacing shall be reduced in rooms or areas utilizing high airflow according to the requirements of NFPA 72.
    - f. Upon alarm silence activation, audible and visible notification appliances in the affected area shall be silenced and shut off. EXCEPT FOR WATERFLOW ALARMS
  - 2. Spot type heat detector or spot smoke detector operation shall:
    - a. Activate audible and visible status change indicators; display the system point number, point description, status and message associated with the point on the system's operator terminal.
    - b. Permanently record the change in status, time, date, point description and message associated with the point in the historical event memory log.

- c. Activate the audible and visible notification appliances throughout the building.
  - d. Notify the campus fire alarm monitoring system and be associated to the building graphics.
3. Duct smoke detector activation shall:
- a. Activate audible and visible status change indicators and display the system point number, point description, status and message associated with the point on the system's operator terminal. Duct detector shall report a supervisory and shut down its associated unit.
  - b. Permanently record the change in status, time, date, point description and message associated with the point in the historical event memory log as a supervisory.
  - c. Shut down the fan unit associated with the duct detector or activate the appropriate smoke exhaust function.
  - d. Notify the campus fire alarm monitoring system and be associated to the building graphics.
- D. Removal of any device, wiring disarrangement, or system component failure shall display on the fire alarm system operator's terminal, "Trouble" and associated LED, the change of status, time, date, point description and the message associated with the point.

### **1.10 Applicable Standards:**

The following standards and guides (of the issue indicated) are hereby made a part of this work by reference thereto: (Utilize most recent editions.)

- A. National Fire Protection Association (NFPA):
- 1. NFPA 1, Uniform Fire Code
  - 2. NFPA 13, Standard for Installation of Sprinkler Systems
  - 3. NFPA 14, Standard for Installation of Standpipe and Hose Systems
  - 4. NFPA 17, Standard for Dry Chemical Extinguishing Systems
  - 5. NFPA 17A, Standard for Wet Chemical Extinguishing Systems
  - 6. NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection
  - 7. NFPA 70 - National Electrical Code
  - 8. NFPA 72 - National Fire Alarm Code
  - 9. NFPA 90A - Air Conditioning and Ventilating Systems
  - 10. NFPA 92, Standard for Smoke-Control Systems
  - 11. NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
  - 12. NFPA 101 – Life Safety Code
  - 13. NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems
  - 14. NFPA 5000, Building Construction and Safety Code

15. IBC- International Building Code
  16. IFC- International Fire Code
- B. Underwriters Laboratories, Inc. (UL):
1. UL Fire Protection Equipment Directory
  2. UL Standard 268, Smoke Detectors for Fire Protective Signaling Systems
  3. UL Standard 268A, Smoke Detectors for Duct Application
  4. UL Standard 346, Water flow Indicators for Fire Protection Signaling Systems
  5. UL Standard 464, Audible Signal Appliances
  6. UL Standard 521, Heat Detectors for Fire Protective Signaling Systems
  7. UL Standard 864, Control Units for Fire Protective Signaling Systems
  8. UL Standard 1424, Cables for Power-Limited Fire Protective Signaling Systems
  9. UL Standards 1480, Speakers for Fire Protective Signaling Systems
  10. UL Standard 1481, Power Supplies for Fire Protective Signaling Systems
  11. UL 1711, Amplifiers for Fire Protective Signaling Systems
  12. UL Standard 1971, Signaling Devices for the Hearing Impaired
  13. UL Standard 2572, Control and Communication Units for Mass Notification Systems
- C. Americans with Disabilities Act Accessibility Guidelines (ADAAG)
- D. American Society of Mechanical Engineers (ASME)/American National Standards Institute (ANSI):
1. ANSI A17.1, and Elevator Code
  2. ANSI A17.3, Elevator Code for Existing Elevators
  3. ANSI A117.1, Accessibility Code

**1.11 Delivery, Storage and Handling of Materials:**

- A. The District will designate an area for storage of all materials. At the end of each working day, all materials shall be returned to the designated area. Material, equipment, tools, etc. will not be left outside the storage area without the consent of the District.
- B. The cost of all material handling, delivery and freight is the Contractor's responsibility. The Owner or his representatives will not be responsible for materials delivered to the site.
- C. Maintain premises free from accumulation of waste materials or rubbish caused by this work. At the completion of the work, remove all surplus materials, tools, etc., and leave the premises clean to the Owner's satisfaction.

**1.12 Quality Assurance:**

- A. Assumption of Existing System Responsibility/Liability: Any construction project additions and/or renovations that will require changing the current programming of an existing fire alarm system in any way shall require an official transfer of the entire FACP system responsibility to

that contractor. This also includes significantly impairing any active system to accommodate phased construction projects where the FACP will either be: removed in its entirety at the completion of the project and/or significantly modified and/or totally replaced through a dual system coverage conversion type project. A signed letter transferring the responsibility of the system as well as an emergency contact list shall be provided to the owner prior to the start of any construction.

- B. The company specializing in installing the products specified in this section must demonstrate a minimum of five years' experience. The company shall also employ technicians holding a California Fire/Life Safety Technician Certification. Proof of certification shall be provided, along with a complete list of project personnel. All work shall be performed by skilled technicians, under the supervision and direction of the designated certified employee, all of whom shall be properly trained and qualified for this work.
- C. The Fire Alarm Contractor shall hold a current license, issued by the State of California, to install, and service fire detection and alarm equipment.
- D. The Fire Alarm Contractor shall maintain a fully staffed branch office including technical service personnel.
- E. All supplied equipment shall be standard products of the manufacturer as shown on plans.
- F. All technical service personnel shall be regularly employed by the fire alarm system contractor.
- G. All electrical installation of the fire alarm system, including wire installation and terminations, shall be performed by electricians in the employ of the Fire Alarm Contractor or qualified sub-contractors.
- H. Any subcontractors used to install portions of the system shall be approved by the District prior to commencement of the installation.

## **PART 2: PRODUCTS**

### **2.01 Fire Alarm Control Panel (FACP):**

- A. Provide a non-proprietary (Fire-Lite) UL listed point addressable fire alarm control system as per plans.
- B. Products shall be of the latest version.
- C. All fire alarm control panels must be intelligent, addressable Central Processing Units (CPU) based on and meets the latest edition of UL 864.
- D. All FACP's must be capable of providing circuit integrity monitoring for all Signaling Line Circuits at a level of Class A, Style 6, as defined in NFPA 72.
- E. All fire alarm initiating devices and notification appliances in finished areas shall be white. without fire markings.
- F. All FACP's must be capable of providing circuit integrity monitoring of Initiating Device Circuits (IDC's) at a level of Class B as defined in NFPA 72.
- G. Manufactured terminal boxes labeled "FIRE ALARM TERMINAL BOX" Space Age TC2 series or equal.
- H. With each installed field device, affix a label to indicate the device's full address on it's

signaling line circuit.

- I. (SEE BELOW) within all junction boxes /connection points, terminal cans, riser cans, ins and outs of SLC devices, strobe, speaker and 24VDC power circuits in the field, power supplies and at the FACP.
- J. Labels to be heat-shrunk to cable prior to final installation of the device.
- K. Font to be a minimum of 10-point font.
- L. Labels to include, but not be limited to the following:
  - 1. SLC Wire – “SLC”, Panel name, card position, loop, and “In” or “Out” Example: SLC-001-004-L1-IN
  - 2. NAC Wire – “NAC”, BPS name and circuit. Example: NAC-BPS1B-1.
  - 3. Speaker Wire – “SPKR”, Panel name, amp position, and circuit. Example: SPKR-001-005-1.
  - 4. IDC Wire – “IDC”, Module Device Address and IDC device type. Example: IDC-126-FLOW.
  - 5. Speaker Riser Wire – “SPKR RISER”, panel the network is leaving, and panel the network is running to. Example: SPKR RISER – FACP01 – FACP02
  - 6. Network Wire – “FA NETWORK”, panel the network is leaving, and panel the network is running to. Example: FA NETWORK – FACP01 – FACP02
  - 7. 24VDC Power – “24VDC”, BPS name and circuit. Example: 24VDC-NAC1B-1.
- M. All FACPs must provide twenty percent (20%) excess power for all input, and output circuit capacity to allow for future expansion by the owner. All loop controllers shall be 3-ssdc2 unless preapproved.
- N. Zone labeling must be textual by alpha-numeric display at the FACP and remote annunciator to allow “first response” by persons not trained in fire alarm technology.
- O. Textual (alpha-numeric) language must be conventional, concise, clear and accurate to facilitate rapid response.
- P. All FACPs must provide a control to silence the Public Alarm to allow for maintenance and testing, and to reduce disruption to include sounder bases, visual notification, and audible notification. Water flow switches to remain non-silence able.
- Q. All FACPs must provide a control to override for door holder release, smoke control/fan shutdown feature, sounder base, water flow, strobes, speakers and damper activation to allow for maintenance and testing. Program panel to allow functions to be disabled by floor or by group as required by Pacific Grove Unified District.
- R. All FACPs must be connected to a Primary and Secondary Power source. The secondary power supply must be sized to provide 15 minutes of operation in alarm conditions after 24 hours of system operation in standby power. Where voice evacuation systems are utilized, 15 minutes of alarm shall be provided.
- S. All FACPs must provide a separate digital address for each initiating device to facilitate rapid response and maintenance and testing.
- T. All FACPs must provide a separate digital address for each individual flow switch and tamper switch.
- U. All programming must be permanent and non-volatile to reduce outage time due to failure.

- V. All FACP's must be listed and approved and the smoke detector sensitivity test level set to reduce maintenance costs.
- W. All FACP's must be capable of providing drift compensation. Drift compensation is considered equal to adjustability at the detector.
- X. All FACP's must be field programmable, using internal or connected components, for all changes, alterations, modifications, additions, deletions and hardware and software upgrades.
- Y. All FACP's shall be capable, using internal or connected components, of generating comprehensive reports for sensitivity, verification counts, address registers.
- Z. A fault isolation device shall be provided electrically between each building level and building wing. This device shall be capable of automatically isolating wire-to-wire faults on each SLC to the building level or wing involved. The device shall be powered by the SLC loop. The device shall provide visual indication at the device of a short circuit (isolate) condition. The device shall reset to the normal mode upon elimination of the wire-to-wire short. All fault isolation devices shall be physically located within the terminal box for that floor.
- AA. All nodes have 120VAC surge protection and dedicated 120vac. Acceptable models: Eaton model AGPH 12020 or preapproved equivalent provided by the fire alarm contractor and installed by the electrical contractor. Provide an engraved label in the FACP identifying its 120 VAC power source. This label shall include panel board location, identification, and circuit number.

## **2.02 Point Addressable Equipment:**

- A. The Fire Lite ES-1000X FACP shall be wall mounted and installed where shown on the drawings. The FACP shall be equipped with locked enclosures having removable access panels for servicing electronic components. All controls and displays shall be mounted at heights allowing easy access by operating personnel. The FACP shall include, but not be limited to, the following major components, some of which may be physically separate from the main cabinet:
  1. Central processing equipment.
  2. Normal AC power supplies.
  3. Data transmission equipment.
  4. Mass data storage (if required).
  5. Emergency power supplies.
- B. The central processing unit (CPU) shall be a "mini" or "micro" computer, listed in accordance with UL 864. The main memory system shall be adequately sized to provide display, print out and control of 150 percent of the actual alarm and command points as described herein and indicated on the drawings. All basic alarm and control software shall be included and be the latest edition of SDU. The CPU shall be completely field programmable, and all data entered shall reside in the system memory.
- C. The CPU shall be equipped with a nonvolatile main memory system of EPROM, battery protected RAM, or EEPROM memory system. The mass storage system shall be equipped with all necessary control hardware and software.
- D. Normal operating power for the FACP shall be 120-volt AC supplied from dedicated circuits (of the emergency power panel, if provided). All circuits shall be protected by circuit breakers of proper size. In addition, the CPU shall be provided with an emergency battery standby power system, which shall operate the system for 24 hours in standby mode and 15 minutes in full alarm

condition. Remotely powered Audio/visual alarms must also function in a power outage. Follow EST Standards for number of FACP's and BPS's on one dedicated 120vac circuit.

- E. The system operating terminal shall be the liquid crystal display type (LCD). The LCD shall include, at a minimum, control function keys, digital display window, programming keys and key-operated lock-out capability.
- F. The time shall be permanently displayed on the LCD and shall always be visible. The LCD shall allow the operator to perform the following minimum tasks:
  - 1. Inquire point status.
  - 2. Start or stop equipment manually.
  - 3. Test and reset equipment manually.
  - 4. Initiate control by event sequences.
  - 5. Bypass control zones and points during manual system tests.
  - 6. Push button bypasses shall be installed to bypass all outputs.
  - 7. Manually request "logs" of system status.
  - 8. Acknowledge status changes.
  - 9. Silence local alarm sounder.
  - 10. Monitor and control smoke detector sensitivity.

### **2.03 Expansion Node Panels:**

- A. When applicable the Node panels shall accommodate all specified alarm input points, supervisory input points, command points and shall allow a 20 percent expansion of connected points. All assemblies within the Node panels shall be modular to allow for expansion and servicing of equipment. All power supplies, standby power, CPU's and terminal strips shall be included to accommodate specified future expansion so that expansion can be accomplished by simple installation of circuit boards and wiring to remote devices.

- B. Batteries for emergency standby power shall be sealed lead-acid or gel cell of enough quantity to provide 24-hour standby with 15 minutes in full alarm. Batteries shall be mounted in a separate vented enclosure BC-1.
- C. The Node panels shall accommodate all specified speaker circuits and strobe notification circuits and shall allow a 25 percent expansion of connected points. All assemblies within the Node panels shall be modular to allow for expansion and servicing of equipment. All power supplies, standby power, CPU's, amplifiers and terminal strips shall be included to accommodate specified future expansion so that expansion can be accomplished by simple installation of circuit boards and wiring to remote devices.
- D. One backup amplifier shall be installed per cabinet of amplifiers. Backup amplifier shall be 3ZA40A.
- E. Remote Strobe Power Supplies shall include:
  - 1. A minimum of four notification appliance circuits monitoring and control modules. The modules shall be designed to meet Style Y , class B NAC wiring.
  - 2. Power supply with battery charger and standby batteries. Batteries shall be sized for 24 hours in standby condition and 15 minutes in full alarm condition.
  - 3. Provision to be supervised and activated by the main fire alarm system.
  - 4. All remote strobe power supplies shall be BPS 10A's / APS 10A's.
  - 5. All remote power supplies (NAC panels) shall leave 20% of each circuit available for future expansion. CC1-s to extend capability of NACs 1-4 not allowed.
  - 6. All remote strobe power supplies shall be independently activated by an addressable control module (CC1-S) and use that control module for monitoring the power supply.
  - 7. The power supplies shall be in electrical or mechanical rooms in an area that is readily accessible and shall be mounted such that the top of the power supply is no greater than seventy-two inches (72") above the finished floor. Do not install power supplies in janitor closets. Power supplies shall be installed on the same floor that they serve.
  - 8. The secondary power supply for in-building fire emergency voice/alarm communications service shall be capable of operating the system under quiescent load for a minimum of 24 hours and then shall be capable of operating the system during a fire or other emergency condition for a period of 15 minutes at maximum connected load.
  - 9. All nodes shall have 120VAC surge protection with a maximum of (3) power supplies per dedicated 120VAC. To be provided by the fire alarm contractor and installed by the electrical contractor. Acceptable models: DITEK, Pace Age or equivalent with confirmed system compatibility.

#### **2.04 Point Addressable System Software:**

- A. As part of the initial system installation, provide all executive system software including, but not limited to, the following:
  - 1. Basic alarm processing programs

2. Control by event programs
  3. System point scanning routines
  4. Password control routines
  5. Emergency file display routines
  6. Smoke detector sensitivity routines
- B. Provide all hardware, software, programming tools, access codes, access keys, documentation, and training necessary to modify the fire alarm system on site. Modification includes addition and deletion of devices, circuits, zones, and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modifications on-site. Modification of software shall not require power down of the system or loss of system fire protection while modifications are being made.
1. If the system access code is either a hardware key or software key, the Contractor/ Vendor shall provide the proper key to meet the above requirements.
- C. Provide electronic printouts in PDF and CAD format as part of the system all preparation and installation of data files including, but not limited to, the following:
1. Point descriptions.
  2. Control by event sequences.
  3. Emergency file statements.
  4. Print statements.
  5. Password installation.
  6. System map. All systems require mapping enabled on all loops.
- D. Systems which rely on EPROM shall be factory reprogrammed at no additional cost to the Owner as many times as required until the system is accepted by the Owner.
- E. Point/zone descriptions shall consist of English language statements which adequately define the point or zone. The use of abbreviations shall be limited to commonly used fire alarm system abbreviations.
- F. All system device labels/descriptions shall follow industry standard labeling protocol that is easily interpreted by both District staff and First Responders.

### **2.05 Alarm Initiating Devices:**

See Alarm Equipment List on Plan Sheet FA0.1

### **2.06 Alarm Notification Appliances:**

- A. Fire alarm system audible notification is required to be provided by speakers in all

buildings. The fire alarm signal generated must be the distinctive three-pulse temporal pattern described by NFPA and ANSI codes.

- B. Provide audible notification throughout the building in accordance with NFPA 72. Provide an individually silence-able 10 inch, 24 VDC general alarm bell on the building exterior. Provide remote microphone capability.
- C. Provide audible systems with voice intelligibility.
  - 1. Voice Alarm Notification
    - a. Provide speakers for announcement of voice messages.
    - b. Digitized audible evacuation messages shall sound once and shall be preceded by a minimum of two cycles of the three-pulse temporal pattern emergency evacuation signal.
    - c. ECC-50-DA AMPLIFIERS shall be installed per plans
- D. Strobe units, listed to UL Standard 1971, shall be provided where indicated.
- E. Whenever possible, units shall be ceiling mounted. Wall mounted units, if necessary due to installation environment, shall be semi-flush type.
- F. Notification Appliances shall operate on 24-volt DC polarized power to allow for supervision. The strobe minimum effective intensity shall be 15 candelas and have a flash rate of 1 to 3 Hertz as defined by UL 1971. All strobes shall be ceiling mounted.
- G. All notification devices shall be white in color and without the word “FIRE” on the device. Switch to blank for Mass Notification.
- H. Strobes may be combined with speakers as shown on the drawing(s).
- I. All visual notification appliances must be LED compliant with the current requirements of ADA.
- J. All visual notification devices within a room or adjacent space within field of view must be synchronized as required per NFPA 72.
- K. Ceiling mounted strobes and speaker/strobes shall be used where installation location meets manufactures and NFPA 72 guidelines.
- L. Speakers shall be provided where indicated. Sound pressure level shall be 15 dB above ambient or 5dB over maximum, having over 60 seconds, whichever is greater per the latest edition of NFPA 72 throughout the building. 520Hz speakers to be installed in all sleeping rooms.
  - 1. Average Ambient Sound Level According to Location. The following sound levels shall be used for design purposes.

a. Business occupancies	55 dB
b. Educational occupancies	45 dB
c. Industrial occupancies	80 dB
d. Institutional occupancies	50 dB

e. Mercantile occupancies	40 dB
f. Mechanical rooms	85 dB
g. Places of assembly	55 dB
h. Residential occupancies	35 dB
i. Storage occupancies	30 dB

2. All amplifiers will be Fire Lite ECC Series only.

### **2.07 Monitoring:**

- A. Monitoring of all fire alarm systems installed on District campuses shall be monitored by The District's current fire alarm monitoring service provider.
- B. Monitoring shall consist of graphics for all addressable points in the fire alarm system. Point associations shall be completed between the point and the graphics.
- C. All systems shall have cell dialer as a back up to the District's monitoring service provider.
- D. The contractor will be responsible for providing a responding technician to Fire Alarm Signals throughout the duration of the project.

### **2.08 Control Devices:**

- A. Provide addressable control module (SIGA CCIs) and Isolation Relays (MR-201C/R style) for all interconnections to other systems for controls. (control module shall be a SIGA cc1s or mcc1s) or preapproved equivalent 24VDC control voltage for the isolation relays shall come from the fire system 24VDC power and will be monitored for integrity. Control devices as such but not limited to:
  - 1. HVAC Control – Provide relays/contacts for fan shutdown and smoke control sequence where indicated. The control relays/contacts shall be 24 volts DC low voltage type, each with number of contacts as required and housed in a metal enclosure. The contacts shall be rated as required for continuous duty.
  - 2. Fire Damper Control – Provide control relays/contacts for fire dampers where indicated. The control relays/contacts shall be 24volt DC low voltage type, each with number of contacts as required and housed in a metal enclosure. The contacts shall be rated as required for continuous duty. 24VDC to be monitored by the fire alarm system.
    - a. Duct detectors for damper control shall be installed per IBC methods of coverage.
  - 3. Automatic Door Control – Provide control relays to release Smoke control doors that are normally open electrically. These doors shall close on any “ALARM” condition. All door control will be 24 vdc provided by fire alarm power supply.
  - 4. Device box support – Door hold open magnet device boxes shall be securely attached to the building structure by effective means.
  - 5. All control devices are to be installed within 3 feet of the controlled power origination or controlled device.

6. All 24VDC will be provided by fire alarm BPS or FACP 24 VDC.

## **2.09 Bypass Functions**

- A. Bypass switches shall be installed at the FACP to bypass the following controlled outputs that pertain to the project:
  1. NACs by Floor
  2. AHU Shutdown
  3. Door Release / Fire Curtains
  4. Security Override / Access Control
  5. Fire Smoke Dampers
  6. Stairwell Pressurization Fans
  7. Sounder Bases
  8. Bypass buttons to be labeled by mechanical printed label. Handwritten labels are unacceptable.

## **2.10 Documentation:**

- A. Document Storage shall be provided. Location to be determined by The District facilities department.
- B. 18"x24' as-built drawings and electronic copy on the electronic storage device.
- C. A copy of the most recent program shall be delivered to The District on USB drive at the completion of the project.

## **PART 3: EXECUTION OF INSTALLATION**

### **3.01 Installation Contractor:**

- A. The Fire Alarm System Supplier shall furnish on-the-job supervision for the proper installation of his devices in cooperation with, or as may be required by, other trades. This supervision shall include, but not be limited to, the following:
  1. Provide specific on-site instructions to others on mounting and installation of each type of device by physically observing the mounting of one or more of each type of device, as required, to assure that the installer is properly instructed in the work.
  2. Provide other supervision as required by the trades to properly perform alarm installation work.
  3. Perform a complete test of the system, certifying that all devices have been activated and that the devices and systems perform in accordance with the requirements of these specifications.
  4. Install, test, trouble-shoot and correct all system software provided under these specifications. This includes, but is not limited to, actual keyboard entry, reprogramming required to meet these specifications, and any other task associated

with the system software. The contractor shall provide 10% testing after every program change.

5. Provide layout drawings and detailed wiring diagrams to the Authority Having Jurisdiction as required by the Submittal section of these specifications and current NFPA 101 requirements.
- B. The Fire Alarm Contractor shall furnish all material and labor to provide a complete and functional system, which operates in accordance with the requirements of the specifications & plans.
- C. Operating, reprogramming, modifying and/or connecting to existing fire alarm systems shall be supervised and/or coordinated with The District. Documentation indicating all changes shall be provided at the time any changes are made to the systems.
- D. Existing systems shall remain operational during modifications or additions to the systems throughout the duration of the project.
- E. Where part or all of the existing fire alarm system is required to be demolished, removal of the existing fire alarm system components shall only be allowed after the new system installation is complete and accepted by The District.

### **3.02 Installation, Interconnection and Operation**

- A. Conduit, raceway and wiring systems as indicated herein.
  1. Exposed areas shall have wiring installed in steel conduit with steel connectors,  $\frac{3}{4}$  conduit or approved raceway, parallel to existing building structure.
  2. Exposed conduit or wire mold will require painting to blend with architecture.
  3. All riser-wiring and wiring between floors shall be installed in conduit.
  4. In any areas where hard ceilings, no ceilings, or open structures are used, a conduit raceway shall be provided from hallway to device/s in room. (i.e. Initiating and notification devices)
  5. Flexible metal conduit (FMC) runs shall not exceed six feet.
  6.  $\frac{1}{2}$ " FMC and associated connectors are acceptable for duct detector and relay installations.
  7. Concealed wiring may be plenum cable (see NFPA 70, NEC per application) and bundled and secured in a proper manner.
  8. All wire installed for this project shall be new and be UL listed for use in fire alarm systems.
  9. All plenum wiring will be supported by J-hooks or D-rings. One-hole cable straps/zip ties are not acceptable. All J-hooks will be red in color. Model # HPH16-25R. Wire Management – strap or bundle all cables and wires (using Velcro straps) in all raceways, inside equipment enclosures, and terminal cabinets, parallel to the enclosure sides.

10. All plenum wiring will be supported by J-hooks or D-rings. One-hole cable straps are not acceptable.
11. Ductwork insulation shall not adhere to the face of the housing, leave a 1" barrier all the way around the duct detector housing from the face down the side.
12. Protective bushings shall be installed in all boxes with fitting or knockouts.

B. Wiring Requirements

1. Wire: Basic wiring materials and installation must comply with NFPA 70, conductor sizes must be sized in accordance with NFPA 72 and NFPA 70 to provide the minimum required voltage drop
2. Wire used for 120 VAC power circuits shall be a minimum of 12 AWG standard copper conductors, with THHN insulation.
  - a. Surge protection shall be installed in accordance with NFPA 70 and 72. 120VAC Power Filters shall be installed on all fire alarm panels. (Eaton power line filter AGPH12020) or preapproved equivalent
3. Wire used for 24 VDC power circuits shall be a minimum of 14 AWG solid copper conductors with outer jacket "Black".
  - a. Surge protection shall be installed in accordance with NFPA 70 and 72.
4. The wire used for strobe circuits shall be a minimum of 14 AWG solid copper conductors with outer jacket "Yellow".
  - a. Surge protection shall be installed in accordance with NFPA 70 and 72.
5. Wire used for point addressable, signaling circuits, network transmission systems shall be a minimum of 16 AWG solid copper conductor with outer jacket "Red".
  - a. Surge protection shall be installed in accordance with NFPA 70 and 72.
6. Wire shall be UL listed for use in fire alarm speaker systems or as required by NFPA 70, article 760. All wire shall be solid conductors of copper, minimum 16 AWG with outer jackets "Blue".
  - a. Surge protection shall be installed in accordance with NFPA 70 and 72.
  - b. All networking cabling shall be at the level of class A between all CPU's.
7. All SLC riser-wiring shall be monitored at a level of Class A. All floor level circuits shall be at the level of class B.
  - a. Isolation Modules shall be installed per floor and per wing with floors with more than one wing.
  - b. Operation: Isolator Modules shall operate such that if a wire-to-wire short occurs, the Isolator Module shall automatically open-circuit (disconnect) the SLC loop. When the short circuit condition is corrected, the Isolator Module shall automatically reconnect the isolated section automatically. It shall not be necessary to replace or reset an Isolator Module after its normal operation.
  - c. For each circuit extending outside the building.

- d. The Isolator Module shall be in a clearly viewable area in corridors. It shall provide a single LED that shall flash to indicate that the Isolator is operational and shall illuminate steadily to indicate that a short circuit condition has been detected and isolated.

Surge protection shall be installed in accordance with NFPA 70 and 72.

8. All Field Initiating Device Circuits (SLC) shall be monitored at a level of Class B. Wire shall be red and 16 AWG.
9. All Notification Appliance Circuits shall be monitored at a level of Class B. Wire for NAC circuits shall be Yellow and 14 AWG. Wire for Speaker circuits shall be blue 16 AWG.
  - a. Surge protection shall be installed in accordance with NFPA 70 and 72.
10. 120 VAC dedicated circuit primary power from the nearest emergency lighting panel shall be connected to each fire alarm control panel and strobe power supply panel.
11. Dedicated lockable breakers for the fire alarm system circuits shall be provided for the fire alarm system. Provide Space Age E-Lock or preapproved equivalent.
12. Dedicated fire alarm system 120 VAC primary power circuit shall not be loaded beyond 80 percent of the circuit's rated capacity.
13. Conduit:
  - a. Conduit shall be EMT type except where otherwise required by local code or these specifications.
  - b. EMT Conduit fills per NFPA 70, NEC with 3/4- inch minimum conduit size.
  - c. All fittings shall be steel compression type.
  - d. All conduit fittings and connections shall be painted red.
  - e. All box fittings shall have plastic inserts.
  - f. Seal Tight flexible conduit and plastic connectors shall be used for all duct detector interconnect wiring.
  - g. Four-square (1900 boxes), provide Space Age Model FP4 cover (or equal).
  - h. 4-11/16" boxes, provide Space Age Model FP5 cover (or equal).
14. Junction box covers in the field, other than terminal cans, shall be Space Age SSU00460 4 Square box covers.
  - a. Each box shall be large enough to accommodate required splices with terminal strips and conduit in accordance with the NFPA 70. Splices shall be indicated on final drawings (as builds) and on the cover of the junction box.

C. Field Terminal Cabinets (FTC):

1. FTC shall be UL listed for use in electrical wiring systems.

2. FTC shall be painted red with the label “Fire Alarm Equipment” stenciled on cover.
3. UL listed terminal strips shall be provided for all wiring splices in terminal boxes. All terminals shall be permanently labeled. **Wire nuts are not acceptable.**
4. Use Velcro straps for ALL wire management.

D. Mounting:

1. Manual stations in finished areas shall be mounted flush boxes unless otherwise noted. Stations located in unfinished areas shall be surface mounted on backboxes provided by the station manufacturer.
2. Strobes and speaker/strobes shall be ceiling or wall mounted as indicated in the specifications & plans.
3. Speaker only devices shall be mounted per plans.
4. All alarm devices, speakers, and strobes shall be mounted in accordance with the manufacturer’s installation instructions and utilize the manufacturer’s suggested mounting box.
5. All surface mounted speaker and strobe boxes shall be smooth sided, without knockouts. Use of standard electrical boxes for surface mounted equipment is prohibited.
6. Point addressable monitor modules and control modules shall be securely mounted in back-boxes or mounted on rails within a larger enclosure.
7. All flush and semi-flush devices or panels shall be installed with trim rings or cover plates.
8. All panels visible to the public or noted on the drawings shall be finished as directed by the Owner.

E. Repairing and patching surfaces to match existing finish.

F. X-raying of concrete floor areas prior to core drilling. Fully inspect other floors prior to drilling.

G. All coring and sleeves are required.

H. All fire alarm system data transmission shall be enclosed in 2-hour fire rated construction or other method acceptable to the Authority Having Jurisdiction.

**3.03 Record Drawings Shall Include the Following:**

- A. An electronic copy of the field redline drawings and the final “as-built” drawings and wiring diagrams shall be provided to The District in AutoCAD and PDF format.
- B. Final SDU programming.
- C. Electronic documents shall be placed on the USB drive inside the document cabinet for the building or the new document cabinet for the project.
- D. Hard copy drawings shall be placed per “E” below.
- E. 36” tall architectural roll prints shall be stored next to FACP in space age DRAWING

## STORAGE BOX

### **3.04 Spare Parts:**

- A. All spare parts shall be directly interchangeable with the corresponding components of the installed systems.
- B. The Fire Alarm Contractor shall furnish a listing, in duplicate, of all spare parts and accessories which the manufacturer recommends to be stocked for proper maintenance of the system.
- C. The Fire Alarm Contractor shall furnish 10 of each new field device installed or 3% of the total type of devices installed, whichever is greater on the fire system as spare parts for the District. Devices: any detector, pull stations, any module used, isolation and monitoring relays, door holders, and audio and visual devices.
- D. Contractor shall provide a Signature Handheld Diagnostic Tool (SIGA-HDT) or preapproved equivalent

**All items of this section shall be provided to the owner prior to final payment request.**

## **PART 4: THE DISTRICT ACCEPTANCE TESTS/ INSPECTIONS REQUIREMENTS:**

### **4.01 Pretesting and Inspection Requirements**

- A. Upon completion of the fire alarm system, the contractor will perform a complete and comprehensive test of the entire system, in accordance with the provisions of NFPA 72.
- B. Pretesting documentation will be turned in for review at least 48 hours prior to final acceptance test scheduling request. The District will review and schedule with the Inspector of Record upon acceptance of the pretesting documentation.
- C. The following fully executed, (signed/dated) pretesting documentation and inspections per NFPA 72 and The District requirements:
  - 1. FIRE MARSHAL INSTALLATION INSPECTION FORM
  - 2. NFPA 72 INSPECTION AND TESTING FORM W/ CORRESPONDING SUPPLEMENTAL PAGES
  - 3. PHOTO OF DOCUMENT CABINET INSTALLED
  - 4. AMBIANT AND ALARM DB READINGS
  - 5. CLOSED LOOP READINGS ON ALL CIRCUITS
  - 6. END OF LINE RESISTANCE READINGS ON ALL CIRCUITS

7. MANOMETER READINGS
8. HDT LOOP READINGS – PRETEST

#### **4.02 Acceptance Testing and Inspection Requirements**

- D. Upon completion of the fire alarm system pretest, the contractor will perform a complete and comprehensive test, of the entire system, with Inspector of Record in accordance with the provisions of NFPA 72 and these Standards.
- E. The following fully executed, (signed/dated) acceptance testing documentation and inspections per NFPA 72 and The District requirements:
  1. NFPA 72 RECORD OF COMPLETION W/ CORRESPONDING SUPPLEMENTAL PAGES
  2. FML-009A FORM
  3. HDT LOOP READINGS – POST ACCEPTANCE TEST
  4. INSTALLATION AND INSPECTION STICKER PLACED AT FACP
- F. It is required for both the Fire Marshal and Inspector of Record to approve all installation and performances of the fire alarm system to be final approved and substantially complete.
- G. The District Testing:
  1. Upon receipt of all documents from the Fire Alarm Contractor's pre-test, The District will conduct a 100% functional system test, and any test determines to be necessary, consistent with the specified survivability style and performance requirements for the system. If no additional deficiencies are found by the Fire Marshal and Inspector of Record, the system will be accepted as complete.

**It is required for both the Fire Marshal and Inspector of Record to approve all installation and performances of the fire alarm system to be final approved and substantially complete.**

If additional deficiencies are found, the fire alarm contractor will be required to correct the deficiencies, re-test and re-certify the system. Such re-testing shall include Supervision testing 100% of the Initiating Device Circuits, Notification Appliance Circuits, and Signal Line circuits.

- H. Fire Alarm Contractors Required Provisions in addition to the provisions of NFPA 72 and/or the paragraph above, it is the responsibility of the Contractor to provide all the following:
  1. In addition to the provisions of NFPA 72 and/or the paragraph above, it is the responsibility of the Contractor to provide all the following:
  2. Provide a clean set of red line prints prior to the acceptance testing to The District for final testing.
  3. Provide smoke detector sensitivity report. Smoke detector percent dirty shall not exceed 0% at the time of acceptance.
  4. Smoke detectors are shipped with a thin plastic cover over the sensing portion of the detector. It is widely assumed that these covers are suitable for

protecting the detectors from construction dust, dirt and debris. In actuality, most of the “covers” supplied are merely for shipping protection and are not intended to be used in lieu of proper protection from construction debris. These covers shall not be relied on to keep the detector entirely free of contaminants.

5. Where smoke detectors are installed for signal initiation and remain operational during construction, they shall be protected from construction debris, dust, dirt and damage in accordance with manufacturer’s recommendations as required by NFPA 72. Prior to protecting and/or covering any smoke detector, the contractor shall perform a sensitivity test of all detectors to be protected and/or covered. The contractor shall maintain a copy of the report and provide a copy to the Tech Services shop. At the time of completed construction and after final cleaning has been completed, the contractor shall perform another sensitivity test and provide a copy to Tech Services shop. The results of the two tests shall be compared and all detectors with sensitivity measurements that are greater than 1% of the starting obscuration shall be cleaned and verified to be operated in accordance with the listed sensitivity, or they shall be replaced. The cost to clean or replace affected smoke detectors shall be the responsibility of the contractor.
6. In new construction, if detectors are installed prior to completion of construction cleanup, they shall be protected in accordance with the manufacturer's recommendations. The contractor shall provide Tech Services shop copies of the sensitivity measurement of each detector. After the construction cleanup is completed the contractor shall perform a sensitivity test and provide a copy to Tech Services shop. The result of the test shall be compared with the original sensitivity data provided by the contractor. Any detectors with sensitivity measurements that are greater than 1% of the starting obscuration shall be cleaned and verified to be operating in accordance with the listed sensitivity, or they shall be replaced.
7. The contractor shall follow the requirements listed above regarding sensitivity measurements and cleaning and/or replacing smoke detectors.
8. Upon completion of the work, the contractor shall contact Tech Services shop and schedule a site survey to verify all detector protection has been removed.
9. The contractor shall provide an HDT reading report or preapproved equivalent.
10. Provide pressure differential readings for all duct detectors on the red line drawings used for final acceptance.
11. Provide closed loop resistance and EOL resistance readings for speaker, NAC, and power circuits on the red line drawings used for final acceptance.
12. Amp draw readings shall be performed on all final installed circuits and recorded on red line drawings prior to acceptance testing to verify submittal calculations as part of acceptance approval.
13. Audible decibel readings for the entire building shall be documented on the red line drawings used for final acceptance testing.

**The District Life Safety System Transfer of Responsibility Form**

**BUILDING NAME:**

---

**EFFECTIVE DATE:**

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The District Project Manager:

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**The status of the Life Safety System that serves this facility is in the following condition:**

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**The following parties have acknowledged the condition and status of the Life Safety System in this facility and have accepted the transfer of responsibility and liability of this system in its present condition with the understanding that the system will be returned to the District in the same or better condition.:**

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**PGUSD Personnel Releasing System Date:**

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**Vendor/Contractor Accepting System Date:**

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**PGUSD Personnel Re-Accepting System Date:**

**CONTRACTOR NOTIFICATION CONTACT LISTS:**  
**(Responsible respondent for Daytime and After-hours calls)**

**DAYTIME WORKING HOURS**

**Name: Phone #:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**NIGHTS, WEEKENDS, AND HOLIDAYS**

**Name: Phone #:** 1. \_\_\_\_\_  
2. \_\_\_\_\_

END OF SECTION 28 31 00

## 28 31 00      FIRE ALARM/VOICE EVACUATION SYSTEM

### PART 1 - GENERAL

#### 1.01 DESCRIPTION OF WORK:

A. Furnish and install all materials and equipment including all required equipment, panels, raceways, conductors and connections, and provide all labor required and necessary to complete the work shown on the drawings and/or specified in all Sections of Division 26 and all other work and miscellaneous items, not specifically mentioned, but reasonably inferred for a complete addressable fire alarm installation including all accessories and appurtenances required for testing the systems. It is in the intent of the drawings and specifications that all systems will be complete, and ready for operation. No extra charge will be paid for furnishing items required by regulations, but not specified herein, or on drawings.

B. Fire Alarm system shall include a main fire alarm control panel, digital communicator for backup phone communication, a remote annunciator[s] and all devices, wiring, etc. as indicated on the plans.

C. The contractor shall include all costs to de-commission the existing system before any new construction can start. The District School District shall be advised in writing of the date as to when the existing system will be de-commissioned. The contractor scope of work shall not degrade any function or operation of the remaining site fire alarm system.

#### 1.02 RELATED WORK:

A. Division 26 General Requirements.

B. See the following specification sections for work related to the work in this section.

1. All other sections of Division 26.

#### 1.03 CODES AND STANDARDS:

A. Devices and equipment for fire alarm systems shall be U.L. listed.

B. UL 864 Control Units, Fire Protective Signaling Systems. C. Devices and equipment for fire alarm system shall be listed by the California State Fire Marshal for the specific purpose the device or equipment is used.

D. Work and material shall be in compliance with and according to the requirements of the latest version of the following standards and codes:

1. California Fire Code (CFC) based on the International Fire Code (IFC) with California Amendments.

2. California Building Code (CBC) based on the International Building Code (IBC) with California Amendments.

3. California Electric Code (CEC) based on the National Electric Code (NEC) and California Amendments.

4. California Mechanical Code (CMC) based on the Uniform Mechanical Code (UMC) and California Amendments.

5. California Plumbing Code (CPC) based on the Uniform Plumbing Code (UPC) and California Amendments.

6. Title 19 C.C.R., Public Safety, State Fire Marshals Regulations.

7. NFPA 72, National Fire Alarm and Signaling Code.

#### 1.04 SUBMITTALS:

A. In accordance with Division 26.

B. Submit the following items:

1. Manufacturer's Catalog Data: Manufacturer's original catalog cuts and original description of data of all material and equipment with sufficient information provided so that the exact function of each device is known. Each item supplied shall be clearly identified including both U.L. number and a copy of the State Fire Marshal's listing.

C. Description of conductors to be used with a statement that all wire shall be in conduit. Where accessible ceiling occurs, plenum rated wire on J-hooks is acceptable.

#### 1.05 QUALITY ASSURANCE:

A. Installer: The installation firm shall be an established communications and electronics contractor with at least 10 years successful installation experience of products utilizing integrated communications systems and equipment specific to that required for this project. Only California Certified fire alarm technicians or California Certified electrician shall be used to install the fire

alarm system. Provide proof to District that all employees are California Certified to install the fire alarm system.

B. All materials, unless otherwise specified, shall be new, and free from any defects. All items of equipment including wire and cable shall be designed by the manufacturer unless otherwise specified, shall function as a complete system and shall be accompanied by the manufacturer's complete service notes and drawings detailing all interconnections.

C. The Contractor shall show satisfactory evidence, upon request, that he maintains a fully equipped service organization capable of furnishing adequate inspection and service to the system. The contractor shall maintain at his facility the necessary spare parts in the proper proportion as recommended by the manufacturer to maintain and service the equipment being supplied.

D. The system manufacturer shall maintain engineering and service departments capable of rendering advice regarding installation and final adjustment of the system.

#### 1.06 WARRANTIES:

- A. The contractor shall provide warranty on all materials, installation and workmanship for a period of three (3) years from the date of acceptance by The District unless otherwise specified. A copy of the manufacturer's warranty shall be provided with the closeout documentation and included with the operation and maintenance manuals (O&M's). **The warranty commences when the system and installation are accepted by The District.**
- B. If the Owner experiences more than two (2) nuisance alarms or unexplained false alarms or troubles in any twenty-four (24) hour period while the system is under warranty, the Contractor shall provide the necessary labor, materials and technical expertise to promptly correct the problem(s) at no cost to The District.
- C. The warranty or any part of the warranty shall **NOT** be made void by any required operation and maintenance or annual inspections of the system by The District certified technicians after acceptance during the warranty period.
- D. The warranty shall include all necessary material, travel, labor, and parts to replace defective components or materials at the job site. This Contractor shall commence repair of any "in warranty" defects within 8 hours of notification of such defects.
- E. The warranty shall include all necessary factory and field software required to perform the specified tasks. This item does include software installed prior to system acceptance. Software updates, equipment revisions, releases updated by the manufacture are to be included in this warranty.
- F. The Contractor shall include, as part of the three-year warranty, a test and inspection of the entire fire alarm system 11 months after the date of completion. The Contractor shall provide a written report of any deficiencies and repair any of the deficiencies. The test and report shall conform to the certification as described in NFPA 72 and as required by the Owner.

#### 1.07 WARRANTIES:

- A. Operator Training

1. Provide training of operating personnel in proper system operation and required user maintenance procedures.
2. One operating manual containing illustrations, description of each detection device, operation of control panels, switches, pilot lights, etc.
3. 4 hours of training for operating personnel. These sessions are to cover proper operating and response procedures. These instructions shall be sufficient to enable a previously or untrained person to properly operate the system. This training shall be scheduled by the project management team and include the District first responders from UPD. Contact the UPD Admin Sergeant to schedule the dispatched officers.

B. Technical Training

1. Provide 16 hours of Training for select District Facilities employees. This class will be stated in the project design review process for the fire alarm contractor to include in the bid package for their portion of the project.

## PART 2 - PRODUCTS

### 2.01 SYSTEM DESCRIPTION

A. The contractor shall furnish and install a complete 24 VDC, electrically supervised, addressable analog, microprocessor-based fire alarm control panel as specified herein. The fire alarm system shall include but not be limited to all control equipment, power supply, initiating devices, audible and visual indicating appliances as appropriate, conduit, wiring, fittings, and all other accessories necessary to provide a complete and operable system.

B. General System Operation:

1. When an alarm occurs on a zone the control panel indicates the alarm condition until manually reset.
2. An alarm may be acknowledged by actuating the "ACKNOWLEDGE" switch. This shall silence the control panel buzzer, and change the "SYSTEM ALARM" LED and the individual zone LED from flashing to steadily lit.
3. All alarm signals may be silenced by actuating the "SILENCE" switch. This shall steadily illuminate the "SIGNAL SILENCE" LED. If a subsequent alarm is activated, the alarm signal shall "resound" until again silenced. Once silenced, all alarm signals may be restored again by activating the "SILENCE" switch. Waterflow zones shall be non-silenceable.
4. If the microprocessor fails, the system shall execute a default signaling program. This program will enable the panel to sound the audible signals and summon the Fire Department. In addition, a yellow "DEGRADE" LED shall light to indicate the programming failure. Inability of the system to sound signals or summon the fire department during microprocessor failure shall not be acceptable.

C. Alarm Operation:

1. Operation of a manual pull station or automatic activation of any smoke detector, heat detector, or water flow switch zone shall cause the FACP to:
2. Sound all indicating appliances in a temporal pattern.
3. Flash all strobes.
4. Shut down all air handling units as specified herein.
5. Flash the panel "System Alarm" LED and pulse a panel audible signal.
6. Display a description of the specific analog/addressable device in alarm via an 80-character alpha-numeric display.
7. Display a description of the specific analog/Addressable device in alarm on the administrations Remote 80-character Annunciators.
8. Notify the Fire Department via the UDACT [and AES-Intellinet Radio].

D. Electrical Supervision:

1. Each initiating and signal circuit shall be electronically supervised for opens, shorts, and ground faults in the wiring. The occurrence of any fault shall activate the system trouble circuitry but shall not interfere with the proper operation of any circuit that does not have a fault connection.
2. Each initiating circuit shall be capable of being wired using Class "B" (Style B) supervised circuits (a break or ground fault in any conductor shall be reported as a trouble condition) at no extra cost.

E. Normal Power Supply:

1. Connections to the normal electrical service shall be on a dedicated branch circuit in accordance with the California Electrical Code (CEC) the circuit and connections shall be mechanically protected. The circuit disconnecting means shall be accessible only to authorized personnel and shall be clearly marked "FIRE ALARM CIRCUIT CONTROL."

2.02 FIRE ALARM CONTROL PANEL:

A. The FACP is a new Silent Knight 6820EVS with Emergency Voice Evacuation Digital Voice Command:

1. Auxiliary SPDT alarm and trouble dry contacts.
2. Auxiliary circuitry in the control panel to operate remote relays for control of air handling equipment.
3. A solid-state power transfer circuit that shall switch to standby power automatically and instantaneously if normal power fails or falls below 15% of normal ("brown out" conditions).

4. This electronic circuit shall allow the batteries to be effectively “floated” on the operating system to avoid upsetting normal microprocessor operation and minimize resultant nuisance troubles and /or alarms. This circuit shall be physically isolated from the power supply to facilitate service.
5. A ground fault detector to detect positive or negative grounds on the initiating circuits, signal circuits, power circuits, and telephone line circuit. A ground fault LED shall be illuminates and shall operate the general trouble devices as specified herein but shall not cause an alarm to be sounded.
6. Short circuit LED’s for all notification appliance circuits shall be a standard feature of the fire alarm control panel. Each circuit shall be monitors for short circuits and shall have a distinct LED for visual indication of the circuit.
7. Operating trouble devices as specified herein but shall not cause an alarm to be sounded.
8. Individual circuit fuses shall be provided from the following: smoke detector (resettable) power, main power supply, battery standby power, and auxiliary (non-resettable) output.
9. A common reset and lamp test switch, labeled “RESET/LAMP TEST” shall be provided to reset the system.
10. Circuitry shall be provided in the control panel to permit transmission of trouble alarm signals over leased or privately owned telephone cables to a remote receiving panel. There shall be a remote disconnect switch to allow testing of the fire alarm signal without transmitting an alarm signal to the central station.

#### 2.03 SYSTEM CABINET:

- A. The system cabinet shall be surface mounted with a texture finish and shall be made of these three parts: backbox, backplate, and door.
- B. The cabinet shall be of dead-front construction and 16-gauge cold rolled steel. The door lock system shall consist of two locks which will accept two different keys. One “OPER” key shall allow dead front access to the module display for all operator functions while one “TECH” key shall allow access to all pane electronics without further dismantling of the cabinet, control unit, or wiring.

#### 2.04 POWER SUPPLY:

- A. All AC line connections shall be isolated from the power supply unit and transformer by means of a cable-connected AC Unit per U.L. 864.
- B. The 120 VAC main power shall be transformer converted to low voltage, rectified and filters 24 VDC nominal for system operation and to eliminate the possibility of line voltage being present on any internal panel components. The power supply shall be integral, filtered, nominal 24 VDC at 5 Amps, and comply with U.L. 864.
- C. Primary Power outputs shall be as follows:

1. A green LED on the power supply card shall indicate the presence of primary power.

D. Power Supply outputs shall be as follows:

1. 24 VDC Non-Resettable, 3.2 Amps max., Power Limited.

2. 24 VDC Resettable, 3.2 Amps max., Power Limited.

E. NOTE: maximum combined output for both is 8.0 Amp.

#### 2.05 Battery Charger:

A. The power supply shall contain a supervised and fused battery charger with a maximum average charging current of 1.5 Amp (this current shall be sufficient to maintain the system batteries at full charge).

B. If the system loses AC power, a System Trouble shall occur.

C. The battery charger shall be capable of charging up to 34 ampere/hour capacity, lead-acid batteries. If batteries are mounted within the control panel enclosure provide a battery shelf.

#### 2.06 DETECTION CIRCUITS:

A. Each Analog Detection Loop Unit shall provide communication with all analog/addressable devices (initiating/control) connected to the system through two (2) analog/addressable communications loops. Each loop shall communicate with a maximum of ninety-nine analog detectors and ninety-eight addressable monitor/control devices.

B. The first nine-nine addressed (1-99) on each loop shall be dedicated to analog detectors, while addresses 101-198 shall be reserved for addressable monitor/control devices.

#### 2.07 ANALOG/ADDRESSABLE COMMUNICATIONS LOOPS:

A. All initiating devices shall be connected to their addressable loop via a two wire style 4 (class

B) circuit.

#### 2.08 NOTIFICATION APPLIANCE CIRCUITS:

A. Four (4) independent (class B) notification appliance circuits shall be provided on the SCU, each polarized and rates at 1.75 Amps DC, individually fused and supervised for opens, grounds, and short circuits. They shall be capable of being wired Class "A" (style Z) or class "B" (style Y) supervised and fused @ 2 Amps. Specifications are as follows:

Voltage Current 24VDC Non-Regulated 3.2 Amps: Maximum Alarm .001 Amps:  
Normal Standby

#### 2.09 TROUBLE INPUT:

A. Trouble input shall be provided rated at 5-24 Volts input and, if used, shall accept a trouble from an external source.

#### 2.10 TROUBLE DRY CONTACTS:

A. Trouble dry contacts (form A or Form B; jumper selectable) shall be provided rated at 2 Amps at 24 VDC (resistive) and shall transfer whenever a system trouble occurs.

#### 2.11 ALARM DRY CONTACTS:

A. Alarm dry contacts (form C) shall be provided rated at 2 Amps at 24 VDC (resistive) and shall transfer whenever a system alarm occurs.

#### 2.12 CENTRAL STATION MONITORING:

A. The entire fire alarm system shall be connected via leased telephone lines and radio communications to a central station and in accordance with the requirements of the fire department.

#### 2.13 ALARM SIGNALS:

A. All alarm signals shall be automatically “locked in” at the control panel until the operated device is returned to its normal condition and the control panel is manually reset. When used for Water flow, the silence switch shall be bypassed.

B. Alarm or Trouble Activation of Initiating Zones.

C. Alarm or Trouble activation of initiating zones shall be indicated by zone alarm and trouble LED's.

#### 2.14 DETECTION DEVICES:

##### A. Manual Pull Stations:

1. Provide non coded, addressable, semi-recessed, double-action type manual pull station with mechanical reset features. Where installed in existing buildings, boxes may be surface- mounted. Surface mounted boxes shall be the same color as the pull stations.

2. Provide separate screw terminal for each conductor connected to the manual alarm pull station. Break-glass-front pull stations will not be permitted. Provide red aluminum, housing labeled “fire”. The pull stations shall not be resettable without the use of a key.

##### B. Detectors:

1. Each photoelectric smoke detector and heat detector shall be interchangeable via twist-lock mounting base, to ensure matching the proper sensor to the potential hazards of the areas being protected. The system shall recognize when an improper sensor type has been installed in a previously programmed sensor type location.

##### C. Photoelectric Smoke Detector:

1. Provide white flame retardant plastic, addressable, analog, photoelectric type, smoke detectors. Detectors shall operate using an optical sensing chamber principal which complies with UL 268.
2. Each detector shall be capable of being set at two sensitivity settings.
3. Each detector shall have two LED visual indicators providing local 360 degree visibility of operating status and alarm indication.
4. Each detector shall be supported independently of wiring connections, and connected by separate screw terminals of each conductor.
5. The detector screen and cover assembly must be easily removable for field cleaning.

D. Combination Fixed Temperature, rate of Rise Heat Detectors:

1. Provide off-white flame retardant plastic, addressable, combination 140 degree F fixed temperature, rate of rise heat dual thermistor detectors. Detector shall initiate an alarm when temperature rises at a rate of over 15 degrees F per minute or above 140 degrees F.
2. Each detector shall have two LED visual indicators providing local 360 degree visibility of operating status and alarm indication.
3. Contacts shall be self-resetting after response to rate or rise principal. Locate detectors in accordance with UL FPD or FM P7825 listing and the requirements of NFPA 72. Temperature rating of detectors shall be in accordance with NFPA 72.

E. Addressable Monitor Module: provide addressable monitor module wired as style B (class "B") to provide an address for normally open contact devices. 1. Provide Addressable Monitor Module to monitor status of all Water flow Switches, Valve tamper Switches and Post Indicator Valves.

2.15 ALARM NOTIFICATION DEVICES:

- A. Color of notification appliances shall be red, unless otherwise noted by District.
- B. All alarm notification devices shall be synchronized throughout the school campus building.
- C. Strobe Lights: Provide recessed mounted strobe light assembly suitable for use in electrically supervised circuit. Lamps shall be xenon flashtube type, powered from the fire alarm control panel alarm signaling circuit. Strobes shall provide candela ratings as indicated on the drawings candelas and flash 60 times per minute unless otherwise noted. Strobes in toilets shall provide a minimum of 15 candelas. Lamps shall be protected by a clear polycarbonate lens. Housing shall be labeled "FIRE" in red vertical lettering.
- D. Speaker/Strobes: Provide recessed mounted, grille face, vibrating diaphragm type, audio alarm devices consisting of an electro-mechanical horn suitable for use in an electrically supervised circuit. Speaker/Strobes shall be provided with a red, tamper resistant grill. Speaker shall have a minimum sound rating of 90 DBA at 10 feet and have field selectable sound levels. Speakers shall be capable of providing a synchronized, field

selectable, temporal code 3 tone. Strobes shall have a separate minimum candela as shown on the drawings and flash 60 times per minute unless otherwise noted. Lamps shall be protected by a clear polycarbonate lens. Housing shall be labeled "FIRE" in red vertical lettering.

E. Speakers: Provide recessed mounted, grille face, vibrating diaphragm type, audio alarm devices consisting of an electro-mechanical horn suitable for use in an electrically supervised circuit. Horns shall be provided with a red, tamper resistant grill. Horn shall have a minimum sound rating of 90 DBA at 10 feet and have field selectable sound levels. Horns shall be capable of providing a synchronized, field selectable, temporal code 3 tone. Horns shall have a separate screw terminal for each conductor connection.

F. Exterior Speakers: Provide recessed mounted, grille face, vibrating diaphragm type, audio alarm devices consisting of an electro-mechanical horn suitable for use in an electrically supervised circuit. Horns shall be provided with a red, tamper resistant grill, and a weatherproof backbox. Horn shall have a minimum sound rating of 90 DBA at 10 feet and have field selectable sound levels. Horns shall be capable of providing a synchronized, field selectable, temporal code 3 tone. Horns shall have a separate screw terminal for each conductor connection. Horns located in areas subject to moisture or exterior atmospheric conditions, shall be approved for such locations.

G. Field Charging Power Supply (FCPS):

1. The FCPS is a device designed for use as either a remote 24 volt power supply or used to power Notification Appliances.
2. The FCPS shall offer up to 6.0 amps (4.0 amps continuous) of regulated 24 volt power. It shall include an integral charger designed to charge 7.0 amp hour batteries and to support 60 hour standby.
3. The Field Charging Power Supply shall have two input triggers. The input trigger shall be a Notification Appliance Circuit (from the fire alarm control panel) or a relay. Four outputs (two Style Y or Z and two style Y) shall be available for connection to the Notification devices.
4. The FCPS shall include an attractive surface mount backbox.
5. The Field Charging Power Supply shall include the ability to delay the AC fail delay per NFPA requirements.
6. The FCPS include power limited circuitry, per 1995 UL standards.

#### 2.16 WIRING AND CONDUIT:

A. Provide wiring in accordance with NFPA 72.

B. Conductors shall be solid copper. Conductors for 120 volt circuits shall be No. 12 AWG minimum; conductors for low-voltage DC circuits shall be No. 14 AWG minimum for annunciation circuits and No. 14 AWG minimum for initiation circuits. All cables shall be rated and code compliant for their use.

1. All low voltage wiring not installed in conduits shall be plenum rated.

2. Provide color-coded conductors. Identify conductors by plastic-coated, self-sticking, printed markers or by heat-shrink type sleeves. Each conductor used for the same specific function shall be distinctly color coded. Use different color codes for each interior circuit. Each circuit color code wire shall remain uniform throughout the circuit.
3. Pigtail or "T" tap connections to the evacuation alarm horns, horn/strobes and strobes are not acceptable.
4. Underground circuit or circuits in wet areas shall be gel filled cables in scheduled 40 PVC conduit. There shall be no splicing of any underground cables.

C. Conduits:

1. Identification of Conduit: New conduits containing fire alarm system conductors shall be red, 3/4" minimum. Junction-boxes, covers, gutters, and terminal cabinets, containing fire alarm system conductors, shall be painted red or provided red in color with engraved plastic identification signs permanently attached to the equipment.
2. Do not run fire alarm circuits in the same conduit with the non-fire alarm circuits.
3. Do not run AC circuits in the same conduit with the fire alarm circuits.
4. Provide wiring in rigid metal conduit for exterior installations or where exposed to damage.
5. Conceal conduit in finished areas of new construction and wherever practical in existing construction. Conduit runs shall be straight, neatly arranged properly supported and parallel or perpendicular to walls and partitions. Identify conductors within each enclosure where a tap, splice, or termination is made.

## PART 3 - EXECUTION

### 3.01 INSTALLATION:

- A. Equipment, materials, installation, workmanship, inspection, and testing shall be in accordance with the NFPA publications and as modified herein.
- B. Follow manufacturer's directions in all cases for installation, testing and energizing.
- C. Accurately set, level, support, and fasten all equipment.
- D. Smoke and heat detectors:
  1. No detector shall be located closer than 12 inches to any part of any lighting fixture. Detectors, located in areas subject to moisture or exterior atmospheric conditions, or hazardous locations as defined by NFPA 70, shall be approved for such locations.

2. Provide guards for all detectors mounted in any high athletic activity areas such as gym's, wrestling rooms, shower rooms.

E. Conduit where exposed shall be installed parallel with the walls or structural elements; vertical runs to be plumb; horizontal runs to be level or parallel with structure; conduit grouped neatly together with straight runs, all bends parallel and uniformly spaced.

F. Earthquake Resistant installation/fastening of all electrical equipment shall conform to the general requirements of section 1614A of the California Building Code.

### 3.02 PRELIMINARY TESTS:

A. Conduct the following tests during installation of wiring and system components. Correct deficiency pertaining to these requirements prior to formal functional and operational tests of the system, preliminary tests shall be performed in the presence of the Local Fire Authority and Project inspector of Record to determine the conformance with the specified requirements.

B. Ground Resistance: Measure the resistance of each connection to ground. Ground resistance shall not exceed 10 ohms.

C. Dielectric Strength insulation Resistance: Test the dielectric strength and the Insulating resistance of the system interconnecting wiring by means of an instrument capable of generating 500 volts of DC and equipped to indicate leakage current 1000 megohms. For the purpose of this test, connect the instrument between each conductor on the line and between each conductor and ground at the control panel end of the line, with the other extremity open circuited and all series-connected devices in place. The system shall withstand the test without breakdown and shall indicate a resistance of not less than 1.0 minute with a DC potential of not less than 100 volts and not more than 500 volts.

D. Standby Battery Test: prior to formal inspection and tests, place the fire alarm system on standby battery power for 24 hours; immediately thereafter, sound the building evacuation alarm signaling devices for 5 minutes. When the test is complete, the fire alarm system battery charger shall be fully recharged within 24 hours.

E. Field Inspection and Test:

1. Before final acceptance of the work, pre-test system to demonstrate compliance with the contract requirements. System shall be subjected to complete functional and operational tests, including tests in place of each detector. When tests have been completed and corrections made, submit a signed and dated NFPA Certificate of Completion along with a completed testing matrix with the request for formal inspection and tests.

2. Where application of heat would destroy a heat detector, it may be manually activated.

3. Verify the proper receipt of the alarm signals at the central station for the UDACT provide printout of test reports. It shall be the sole obligation of the

contractor to coordinate and to provide all testing documentation from the central station.

4. The communication loops and the indicating appliance circuits shall be opened in at least two locations per zone to check for the presence of correct supervisory circuitry.

5. Perform the field inspection and test in the presence of the manufacturer's representative, the School District's representative, local Fire Authority and Project Inspector of Record (IOR).

6. Test equipment: It shall be the responsibility of the installing Contractor to furnish tools, instruments, and materials required for a thorough test of the system. This includes, but is not limited to, the following:

- a. VOM meter
- b. Manufacturer's recommended smoke detector testing device and sensitivity test equipment.
- c. Heat source for testing heat detectors.
- d. Keys to all control panels.
- e. Ladders

### 3.03 PROJECT CLOSEOUT:

#### A. As Built Drawings:

1. Provide a complete set (full size scalable) of reproducible "as-built" and AutoCAD format drawings showing installed wiring, color coding, and wire tag notations for exact locations of all installed equipment, specific interconnections between all equipment, and internal wiring of the equipment upon completion of system.

#### B. Operating and Instruction Manuals:

1. Operating and Instruction manuals shall be submitted prior to testing of the system. Four complete sets of operation and instructions manuals shall be delivered to the School District upon request.

2. Complete, accurate, step-by-step testing instructions giving recommended and required testing frequency of all equipment, methods for testing each individual piece of equipment, and troubleshooting manual explaining how to test the preliminary internal parts or each piece of equipment shall be delivered upon completion of the system.

#### C. Maintenance instructions shall be complete, easy to read, understandable, and shall provide the following information:

1. Instructions on replacing any components of the system, including internal parts.

2. Instructions on periodic cleaning and adjustment of equipment with a schedule of these functions.
3. A complete list of all equipment and components with information as to the address and telephone number of both the manufacturer and local supplier of each item.
4. User operating instructions shall be provided prominently displayed on a separate sheet located next to the control unit in accordance with U.L. Standard 864.

## **PART 5 - EMERGENCY VOICE EVACUATION SYSTEM**

### **5.01 - GENERAL**

#### **1.1. DESCRIPTION:**

A. This section of the specification includes the furnishing, installation, connection and testing of the microprocessor-controlled Voice Evacuation/Mass Notification control panel.

B. The Voice Evacuation/Mass Notification panel shall comply with NFPA 72 requirements.

1. The Secondary Power Source of the Voice Evacuation/Mass Notification panel will be capable of providing at least 24 hours of backup power with the ability to sustain 15 minutes in alarm at the end of the backup period.

C. The Voice Evacuation/Mass Notification panel shall be manufactured by an ISO 9001 certified company and meet the requirements of BS EN9001: ANSI/ASQC, Q9001-1994.

D. The Voice Evacuation/Mass Notification panel and peripheral devices shall be manufactured 100% by a single U.S. manufacturer (or division thereof). Underwriters Laboratories Inc. (UL) - USA:

UL 864 Standard for Control Units for Fire Protective Signaling Systems

UL 1711 Amplifiers for Fire Protective Signaling Systems

UL 2572 Communication and Control Units for Mass Notification Systems

Other:

NEC Article 250 Grounding

NEC Article 300 Wiring Methods

NEC Article 760 Fire Protective Signaling Systems

Compliant with Unified Facilities Criteria UFC 4-021-01

1. The Voice Evacuation/Mass Notification panel shall be ANSI 864, 9th Edition Listed. Systems listed to ANSI 864, 8th edition (or previous revisions) shall not be accepted.

F. The installing company shall employ NICET (minimum Level II Fire Alarm Technology) technicians on site to guide the final check-out and to ensure the systems integrity.

## 1.2. SCOPE:

A. A microprocessor-controlled Voice Evacuation/Mass Notification control panel shall be installed in accordance with the project specifications and drawings.

## 1.3. SUBMITTALS

### A. General:

1. Two copies of all submittals shall be submitted to the Architect/Engineer for review.
2. All references to manufacturer's model numbers and other pertinent information herein is intended to establish minimum standards of performance, function and quality. Equivalent compatible UL-listed equipment from other manufacturers may be substituted for the specified equipment as long as the minimum standards are met.
3. For equipment other than that specified, the contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

### B. Shop Drawings:

1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
2. Include manufacturer's name(s), model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.
3. Show system layout, configurations, and terminations.

### C. Manuals:

1. Submit simultaneously with the shop drawings, complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheets.
2. Wiring diagrams shall indicate internal wiring for each device and the interconnections between the items of equipment.
3. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system.

### D. Software Modifications

1. Provide the services of a qualified technician to perform all system software modifications, upgrades or changes. Response time of the technician to the site shall not exceed 4 hours.
2. Provide all hardware, software, programming tools and documentation necessary to modify the Voice Evacuation/Mass Notification Control Panel on site. Modification includes addition and deletion of messages, circuits, zones and changes to system operation. The system structure and software shall place no limit on the type or extent of software modifications on-site.

#### 1.4. GUARANTY:

All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one-year period shall be included in the submittal bid.

#### 1.5. MAINTENANCE:

A. Maintenance and testing shall be on a semi-annual schedule or as required by the local AHJ. A preventive maintenance schedule shall be provided by the contractor describing the protocol for preventive maintenance. The Voice Evacuation/Mass Notification Control Panel shall be tested in accordance with the requirements of NFPA 72.

B. As part of the bid/proposal, include a quote for a maintenance contract to provide all maintenance, tests, and repairs described below. Include also a quote for unscheduled maintenance/repairs, including hourly rates for technicians trained on this equipment, and response travel costs for each year of the maintenance period. Submittals that do not identify all post contract maintenance costs will not be accepted. Rates and costs shall be valid for the period of five (5) years after expiration of the guaranty.

#### 1.6. POST CONTRACT EXPANSIONS:

A. The contractor shall have the ability to provide parts and labor to expand the system specified, if so requested, for a period of five (5) years from the date of acceptance.

B. As part of the submittal, include a quotation for all parts and material, and all installation and test labor as needed to increase the number of speaker's zones or wattage by ten percent (10%).

C. The quotation shall include installation, test labor, and labor to reprogram the system for this 10% expansion. If additional Voice Evacuation/Mass Notification Control Panel hardware is required, include the material and labor necessary to install this hardware.

D. Do not include cost of conduit or wire or the cost to install conduit or wire except for labor to make final connections at the Voice Evacuation/Mass Notification Control Panel.

F. Submittals that do not include this estimate of post contract expansion cost will not be accepted.

#### 1.7. APPLICABLE STANDARDS AND SPECIFICATIONS:

The specifications and standards listed below form a part of this specification. The system shall fully comply with the latest issue of these standards, if applicable.

A. National Fire Protection Association (NFPA) - USA:

No. 70 National Electric Code (NEC)

No. 72 National Fire Alarm Code

No. 101 Life Safety Code

B. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications and the installation shall be in compliance with the UL listing.

C. Local and State Building Codes.

D. All requirements of the Authority Having Jurisdiction (AHJ).

#### 1.8. APPROVALS:

A. The system shall have proper listing and/or approval from the following nationally recognized agencies:

UL Underwriters Laboratories Inc (Ninth Edition)

CSFM California State Fire Marshal

MEA Material Equipment Acceptance (NYFD COA)

## 5.02 PRODUCTS

### 2.1. EQUIPMENT AND MATERIAL, GENERAL:

A. All equipment and components shall be new, and the manufacturer's current model. The materials, appliances, equipment and devices shall be tested and listed by a nationally recognized approvals agency for use as part of a fire protective signaling system, meeting the National Fire Alarm Code.

B. All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation.

C. All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., speakers shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.

D. All equipment must be available "over the counter" through the Security Equipment Distributor (SED) market and can be installed by dealerships independent of the manufacturer.

### 2.2. CONDUIT AND WIRE:

A. Conduit:

1. Conduit shall be in accordance with The National Electrical Code (NEC), local and state requirements.
2. Where required, all wiring shall be installed in conduit or raceway. Conduit fill shall not exceed 40 percent of interior cross-sectional area where three or more cables are contained within a single conduit.
3. Cable must be separated from any open conductors of power, or Class 1 circuits, and shall not be placed in any conduit, junction box or raceway containing these conductors, per NEC Article 760.
4. All circuits shall be provided with transient suppression devices and the system shall be designed to permit simultaneous operation of all circuits without interference or loss of signals.
5. Conduit shall not enter the Voice Evacuation/Mass Notification Control Panel, or any other remotely mounted panel equipment or backboxes, except where conduit entry is specified by the Voice Evacuation/Mass Notification Control Panel manufacturer.
6. Conduit shall be 3/4-inch (19.1 mm) minimum.

B. Wire:

1. All Voice Evacuation/Mass Notification Control Panel wiring shall be new.
2. Wiring shall be in accordance with local, state and national codes (e.g., NEC Article 760) and as recommended by the manufacturer of the Voice Evacuation/Mass Notification Control Panel. Number and size of conductors shall be as recommended by the Voice Evacuation/Mass Notification Control Panel, but not less 14 AWG (1.63 mm) for Notification Appliance Circuits.
3. All wire and cable shall be listed and/or approved by a recognized testing agency for use with a protective signaling system.
4. Wire and cable not installed in conduit shall have a fire resistance rating suitable for the installation as indicated in NEC 760 (e.g., FPLR).
5. All field wiring shall be electrically supervised for open circuit and ground fault.

C. Terminal Boxes, Junction Boxes and Cabinets:

All boxes and cabinets shall be UL listed for their use and purpose.

D. The Voice Evacuation/Mass Notification Control Panel shall be connected to a separate dedicated branch circuit, maximum 20 amperes. This circuit shall be labeled at the main power distribution panel as Voice Evacuation/Mass Notification Control Panel. Voice Evacuation/Mass Notification Control Panel primary power wiring shall be 12 AWG. The panel cabinet shall be grounded securely to either a cold- water pipe or grounding rod.

1. The Voice Evacuation/Mass Notification Control Panel notification circuit (NACs 1) shall also automatically synchronize any of the

following manufacturer's notification appliances connected to them: System Sensor, Wheelock, or Gentex with no need for additional synchronization modules.

### 2.3. Voice Evacuation/Mass Notification Control Panel:

A. The Voice Evacuation/Mass Notification Control Panel is a new Silent Knight 6820EVS (with Digital Voice Command Center) and contains a microprocessor-based Central Processing Unit (CPU). The CPU shall distribute and control emergency voice messages over the speaker circuits.

B. The system shall provide the capability to interface to LOC (Local Operator Console), Distributed Audio Amplifiers, Remote Page Unit, Remote Microphone, Fire Fighter Telephone Unit and Remote Telephone Zone Module from the same manufacturer.

C. Shall have as minimum requirements:

1. Integral 50 Watt, 25 Vrms audio amplifier with optional converter for 70.7-volt systems. The system shall be capable of expansion to 100 watts total via the insertion of an additional 50-watt audio amplifier module (can be used as a backup amplifier) into the same cabinet and expandable over 1100 watts.

2. Speaker circuit that can be wired both Class A and B.

3. Integral Digital Message Generator with a memory capacity for up to 60 seconds per messaging. The Digital Message Generator shall be capable of producing fourteen distinct messages (60 seconds each). Field-selectable message and custom message recording capability using the local microphone, a USB port, or an external audio input.

4. Built in alert tone patterns with ANSI, March Code, California, Steady, Alert Tone, Hi-Lo, ANSI Whoop, Continuous Whoop, or No Tone is field programmable. Tone Prior to transmitting a message, the Voice Evacuation/Mass Notification Control Panel can be programmed to produce a pre-announce and post-announce tone.

- a. Leading Tone Duration If a pre-announce tone is desired, select the length of time it will play before a message is broadcasted. Select 4, 8, 12, 16, 20, 24, or 28 seconds. In a pre-announce tone is not desired, select 0 seconds.

- b. Trailing Tone Duration Select the length of time for the post-message announcement tone. Select 4, 8, 12, 16, 20, 24, 28, or 32 seconds from the drop-down menu.

- c. Repeat Cycle Select the number of times the message will be repeated during an alarm. A message can be repeated 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, or an Infinite amount of times.

5. The Voice Evacuation/Mass Notification Control Panel will be capable of detecting and annunciating the following conditions: Loss of Power (AC and

DC), System Trouble, Ground Fault, Alarm, Microphone Trouble, Message Generator Trouble, Tone Generator Trouble, and Amplifier Fault.

6. The Voice Evacuation/Mass Notification Control Panel shall be fully supervised including microphone, amplifier output, message generator, speaker wiring, and tone generation.

7. Speaker outputs shall be fully power-limited.

8. Amplifiers will be supplied power independently to eliminate a short on one circuit from affecting other circuits.

9. The Voice Evacuation/Mass Notification Control Panel will provide full supervision on both active (alarm or music) and standby conditions.

10. An optional zone splitter version shall be available that permits splitting speaker circuits into 8 specific zones.

11. An optional distributed amplifiers unit shall be available that permits splitting speaker circuits up to a total of 24 speaker zones.

12. Wiring terminals shall be removable terminal blocks (Wire Gauge 12 – 18 AWG) for ease of servicing.

13. Voice Evacuation/Mass Notification Control Panel will provide 2 amp Notification Appliance Circuit (NAC) output with sync generator or follower for System Sensor, Wheelock or Gentex protocols. The NAC shall be capable of One (1) Style Y (Class B) or Style Z (Class A) circuit.

14. Shall have eight Command Input Circuits to activate messages via reverse polarity or contact closures.

15. Built in External Audio Input can be used for background music.

16. On-board battery charger which supports charging up to 26 AH batteries (cabinet holds up to 18AH batteries).

17. Programmable delay of immediate, 2 hours or 6 hours reporting of AC Loss.

18. Built in Piezo sounder for local trouble.

19. Stores the events in the 100 Event History log

20. Shall have Console Lamp Test switch and shall activate all system LEDs including Remote Consoles.

21. Shall have three Form-C relays:

AC Power Loss Relay

System Trouble Relay

MNS Active (For Mass Notification signage)

22. Shall have a Special Application (auxiliary power) output for addressable modules when interfaced with compatible addressable FACP's and End-of-Line power supervision relays.

23. Shall be capable of Speaker Volume Control. The Supervised Volume Control will allow manual volume setting for telephone paging and background music for a specific speaker or speaker zone.

24. Shall have a Night Ring input allows a building's Private Branch Exchange (PBX) to activate the Voice Evacuation/Mass Notification panel.

25. The Voice Evacuation/Mass Notification panel can communicate in any combination up to eight (8) external remote consoles:

Optional Remote Microphone

Optional Remote Page Unit

Optional Local Operator Console

26. The Voice Evacuation/Mass Notification panel can communicate in any combination up to eight (8) external distributed audio amplifiers:

Optional Distributed Amplifier, 50 watts.

Optional Distributed Amplifier, 125 watts.

27. Shall be capable of integrating with firefighter telephone system that provides secure and reliable communications. The firefighter telephone system will allow for up to ten users to plug in to a remote telephone jack and communicate simultaneously within a building.

28. Shall be capable of secure access to the Voice Evacuation/Mass Notification panel via cell phone or other remote telephone.

29. The Voice Evacuation/Mass Notification panel can be integrated by an FACP via the ANN/ACS (EIA-485) link. Compatible FACP's include the MS-9200UDLS and MS-9600(UD)LS.

30. The Voice Evacuation/Mass Notification shall report Mass Notification events to the Central Station.

31. The Voice Evacuation/Mass Notification panel can be interface with other UL Listed Fire Alarm Control Panels via activation of reverse polarity or by contact closure.

#### D. Speakers:

1. All speakers shall operate on 25 or 70 VRMS with field selectable output taps from 0.25 to 2.0 Watts.

2. Speakers in corridors and public spaces shall produce a minimum sound levels of 75 dBA output at 10 feet (3m).

3. The plug-in speaker allows the installer to pre-wire mounting plates and dress the wires before plugging in the speakers.
4. Flush mount applications are achievable without the need for an extension ring.
5. Frequency response shall be a minimum of 400 HZ to 4000 HZ.
6. Rotary switch simplifies field selection of speaker voltage and power settings.

E. Enclosures:

1. The Voice Evacuation/Mass Notification panel shall be housed in a UL-listed cabinet suitable for surface mounting. The cabinet and front shall be corrosion protected and painted red via the powder coat method with manufacturer's standard finish.
2. The back box and door shall be constructed of steel with provisions for electrical conduit connections into the sides and top. The door shall provide a key lock and shall provide for the viewing of all indicators.

F. Power Supply:

1. The main power supply for the Voice Evacuation/Mass Notification panel shall provide up to 7.5 amps of available power for the panel and peripheral devices.
2. Provisions will be made to allow the audio-visual power to be increased as required by adding modular expansion audio-visual power supplies.
3. The power supply shall provide an integral battery charger or may be used with an external battery and charger systems. Battery arrangement may be configured in the field.
4. The main power supply shall continuously monitor all field wires for earth ground conditions.
5. The main power supply shall operate on 120 VAC, 60 Hz or 240 VAC, 50 Hz, and shall provide all necessary power for the Voice Evacuation/Mass Notification panel.

G. BATTERIES:

1. Upon loss of Primary (AC) power to the Voice Evacuation/Mass Notification panel, the batteries shall have sufficient capacity to power the Voice Evacuation/Mass Notification panel for required standby time (24 or 60 hours) followed by 15 minutes of alarm.
2. The batteries are to be completely maintenance free. No liquids are required. Fluid level checks for refilling, spills, and leakage shall not be required.

## **5.03 - EXECUTION**

### **3.1. INSTALLATION:**

A. Installation shall be in accordance with the NEC, NFPA 72, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer.

B. All conduit, junction boxes, conduit supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas. Smoke detectors shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect speakers from contamination and physical damage.

### 3.2. TEST:

The service of a competent, factory-trained engineer or technician authorized by the manufacturer of the fire alarm equipment shall be provided to technically supervise and participate during all of the adjustments and tests for the system. All testing shall be in accordance with NFPA 72.

A. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.

B. Open and short notification appliance circuits and verify that trouble signal actuates.

C. Ground all circuits and verify response of trouble signals.

D. Check presence and audibility of tone at all alarm notification devices.

E. When the system is equipped with optional features, the manufacturer's manual shall be consulted to determine the proper testing procedures. This is intended to address such items as verifying voice messages.

### 3.3. FINAL INSPECTION:

A. At the final inspection a minimum NICET Level II technician shall demonstrate that the system functions properly in every respect.

### 3.4. INSTRUCTION:

A. Instruction shall be provided as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.

B. The contractor or the installing dealer shall provide a user manual indicating "Sequence of Operation."

### 3.5. SUPPORT SERVICES:

A. System Start Up and Commissioning:

1. Upon completion of work, contractor shall provide a manufacturer authorized technician to provide staff & MOT training (minimum of 16 hours) of the fire alarm system operation.

**[END OF SECTION 283100]**