

HUMBOLDT COUNTY OFFICE OF EDUCATION

PROJECT MANUAL
FOR

ADMINISTRATION BUILDING FURNACE PROJECT

Release Date:

OWNER: Humboldt County Office of Education
901 Myrtle Avenue
Eureka, California 95501

AGENT: Chris N. Hartley, EdD, Superintendent

ARCHITECT: Guy J. Fryer, Architect
SISKIYOU DESIGN GROUP
303 Bruce Street, Ste A
Yreka, California 96097
530-842-1683

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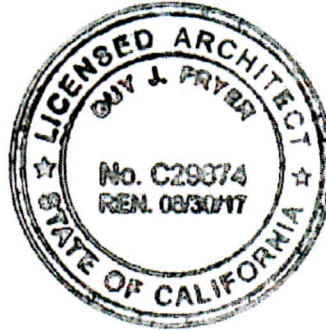
Humboldt County Office of Education

Administration Building Furnace Project

SIGNATURE PAGE



Guy J Fryer, Architect
SISKIYOU DESIGN GROUP, INC.
303 Bruce Street
Yreka CA 96097
530/842-1683



David M Owen, Mechanical Engineer
SKYLINE TECHNICAL SYSTEMS
320 Gasquet Flat Road / PO Box 320
Gasquet CA 95543
707-457-3590



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Humboldt County Office of Education

INVITATION FOR BIDS

Proposition 39

Administration Building Furnace Project Bid No. 17-011

DEADLINE FOR SUBMITTING BIDS:

2:00 pm, May 31, 2017

All bids must be submitted in person or by mail to:

**Patrick Owen, Project Manager
Redwood Coast Energy Authority (RCEA)
633 3rd Street
Eureka, CA, 95501**

Mandatory Pre-Bid Conference

A mandatory pre-bid conference will be held to acquaint all prospective bidders with the Contract Documents and the Project site. Failure to attend the conference may result in the disqualification of the bid of the non-attending bidder.

Date: Wednesday, May 10, 2017

Time: 10 a.m.

Location: Humboldt County Office of Education
901 Myrtle Avenue
Eureka, CA 95501

Contacts: Patrick Owen, Project Manager
powen@redwoodenergy.org
(707)269-1700, x318

Rob Walkenhauer, Director of
Maintenance & Operations
rwalkenhauer@humboldt.k12.ca.us
(707)599-8413

OVERVIEW

Humboldt County Office of Education is soliciting bids from interested contractors to implement HVAC improvements at their campus. The goal of the project is to reduce energy use at the school site. The expected work product is to install identified capital improvements that will reduce the overall energy usage and comply with California Energy Commission (CEC) guidelines for the use of Proposition 39 funding.

The District seeks a contractor to complete the following:

- Install five (5) new 97% efficient condensing wall furnaces

A proposed schedule indicating the timeline for this solicitation is presented below.

SCHEDULE

The following is a schedule of significant events and deadlines:

Issue Date	April 25, 2017
Mandatory pre-bid conference:	10 am, Wednesday, May 10, 2017
Bids due:	By 2:00 pm, May 31, 2017
Public bid opening:	After 2:00 pm, May 31, 2017
Anticipated bid award date:	Wednesday June 7, 2017
Installation start date:	After June 16, 2017
Installation complete:	no later than August 11, 2017

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NOTICE INVITING BIDS

Humboldt County Office of Education

Proposition 39 Administration Building Furnace Project

1. Notice is hereby given that the Governing Board of the Humboldt County Office of Education of the County of Humboldt, State of California, will receive sealed bids for the Proposition 39 **Administration Building Furnace Project** ("Project") up to, but not later than, **2:00 pm, on May 31, 2017**, and will thereafter publicly open and read aloud the bids. **All bids shall be received at the office of Redwood Coast Energy Authority ("RCEA"), 633 Third Street, Eureka, California.**
2. Each bid shall be completed on the Bid Proposal Form included in the Contract Documents, and must conform and be fully responsive to this invitation, the plans and specifications, and all other Contract Documents. Copies of the Contract Documents are available for examination at RCEA, 633 3rd Street, Eureka, California, and at the RCEA website <http://www.redwoodenergy.org/opportunities/bid-opportunities>, and may be obtained by licensed contractors upon request.
3. Each bid shall be accompanied by cash, a cashier's or certified check, or a bidder's bond executed by a surety licensed to do business in the State of California as a surety, made payable to the District, in an amount not less than ten percent (10%) of the maximum amount of the bid. The check or bid bond shall be given as a guarantee that the bidder to whom the contract is awarded will execute the Contract Documents and will provide the required payment and performance bonds and insurance certificates within ten (10) days after the notification of the award of the contract.
4. The successful bidder shall comply with the provisions of the Labor Code pertaining to payment of the generally prevailing rate of wages and apprenticeships or other training programs. The Department of Industrial Relations has made available the general prevailing rate of per diem wages in the locality in which the work is to be performed for each craft, classification or type of worker needed to execute the contract, including employer payments for health and welfare, pension, vacation, apprenticeship and similar purposes. Copies of these prevailing rates are available to any interested party upon request and are online at <http://www.dir.ca.gov/DLSR>. The Contractor and all Subcontractors shall pay not less than the specified rates to all workers employed by them in the execution of the Contract. It is the Contractor's responsibility to determine any rate change.
5. The schedule of per diem wages is based upon a working day of eight hours. The rate for holiday and overtime work shall be at least time and one half.
6. The substitution of appropriate securities in lieu of retention amounts from progress payments in accordance with Public Contract Code §22300 is permitted.
7. Pursuant to Public Contract Code §4104, each bid shall include the name and location of the place of business of each subcontractor who shall perform work or service or fabricate or install work for the contractor in excess of one-half of one percent (1/2 of 1%) of the bid price. The bid shall describe the type of the work to be performed by each listed subcontractor.
8. No bid may be withdrawn for a period of sixty (60) days after the date set for the opening for bids except as provided by Public Contract Code §§5100 *et seq.* The District reserves

the right to reject any and all bids and to waive any informalities or irregularities in the bidding.

9. Minority, women, and disabled veteran contractors are encouraged to submit bids. This bid is___/ is not_X__ subject to Disabled Veteran Business Enterprise requirements.
10. The project is subject to compliance monitoring and enforcement by the California Department of Industrial Relations. In accordance with SB 854, all bidders, contractors, and subcontractors working at the site shall be duly registered with the Department of Industrial Relations at time of bid opening and at all relevant times. Proof of registration shall be provided as to all such contractors prior to the commencement of any work.
11. Each bidder shall possess at the time the bid is awarded the following classification(s) of California State Contractor's license: B
12. Mandatory Pre-Bid Conference. A mandatory pre-bid conference will be held at Humboldt County Office of Education on **Wednesday, May 10, 2017 at 10 am** for the purpose of acquainting all prospective bidders with the Contract Documents and the Project site. Failure to attend the conference may result in the disqualification of the bid of the non-attending bidder.

Humboldt County Office of Education

By: Chris N. Hartley, EdD., Superintendent

DATED: April 24, 2017

Publication Dates: 1) Friday, April 28, 2017 2) Friday, May 5, 2017

SCOPE OF WORK

Humboldt County Office of Education (“District”) is soliciting bids from licensed and qualified contractors for the following scope of work at the Franklin Site office and school campus in Eureka, California.

1. HVAC scope:

Specific Location	Description of Measure
Attic Area	Install five (5) new 97% AFUE condensing furnaces. Model Lennox EL296UH070XV36B two stage 97% efficient variable speed model, or approved equivalent. Construct new walkways, platforms and draft stops.
Rooms	Install five (5) thermostats on the new furnaces

- a. Location
 - i. Furnaces to be installed are located in attic space as shown on the drawings. See Appendix 1 for a Site Map.
- b. Demolition
 - i. Remove existing duct work and demolition of the attic walkways as shown on the drawings.
- a. Mechanical
 - i. Provide and install five (5) new 97% AFUE condensing furnaces with BTU output indicated in above table. Existing ductwork (if present) shall be used with minimum modifications.
 - ii. Provide and install new PVC venting. Modify and seal openings as required.
 - iii. Provide new transitions and adapters, as required.
- b. Temperature Controls
 - i. Remove existing thermostats and ensure proper disposal.
 - ii. Connect new furnaces to new programmable thermostats and ensure proper operations.
- c. Electrical
 - i. Disconnect and reconnect power in the same location.
- d. Structural
 - i. Proposed furnace weight should not exceed existing furnace weight.
 - ii. Provide support as needed.
 - iii. Provide and install for each five (5) furnaces: sheet metal cabinet surround with 1” sound liner insulation and access panel for noise reduction. Cabinet fabricated from pre-painted 24 gauge metal.

- e. Reporting
 - i. Report costs and other information as needed to meet Prop 39 reporting requirements.
 - ii. Provide invoices, permit number and other information as needed to meet PG&E rebate requirements.
 - f. Title 24
 - i. System must comply with 2016 Building Energy Efficiency Standards (Title 24, Section 6)
- 2. Coordinate with the District and Redwood Coast Energy Authority to ensure adherence to Proposition 39 program guidelines.**
- a. All project services will comply with Proposition 39: California Clean Energy Jobs Act – 2016 Program Implementation Guidelines.
 - b. Contractor commits to prompt communication of change orders prior to execution to ensure Proposition 39 compliance.

INSTRUCTIONS TO BIDDERS

Each response to this Invitation for Bids submitted to the District for the Proposition 39 **Administration Building Furnace Project** (“Project”) shall be in accordance with the following instructions and requirements, which are part of the Contract Documents for this Project.

1. **Deadline for Receipt of Bids.** Each bid shall be sealed and submitted to the Redwood Coast Energy Authority, 633 3rd Street, Eureka, no later than **2:00 pm on May 31, 2017**. The District suggests that bids be hand delivered in order to ensure their timely receipt. Any bids received after the time stated, regardless of the reason, shall be returned, unopened, to the bidder.

SUBMITTAL OF RESPONSES

Proposals shall be received at the RCEA office at or before 2:00 pm on May 31, 2017.

ALL MAILED PROPOSALS SHALL BE ADDRESSED AS FOLLOWS:

BID NO. 17-011
Attn: Patrick Owen, Project Manager
Redwood Coast Energy Authority
633 3rd Street
Eureka, CA 95501

The envelope shall also indicate the name and address of the submitting firm, with “DO NOT OPEN UNTIL BID OPENING” on the front of the envelope.

HAND DELIVERED COURIER OR PACKAGED DELIVERED SERVICE SHALL BE DELIVERED DIRECTLY TO:

Redwood Coast Energy Authority
633 3rd Street
Eureka, CA 95501

2. **Mandatory Pre-Bid Conference.** A mandatory pre-bid site visit and question forum will be held on **Wednesday, May 10, 2017 at 10 am** local time for the purpose of acquainting all prospective bidders with the Contract Documents and the Project site. This will be the bidder’s time to look at the installation site and ask any questions about the project.

The pre-bid site visit will begin at the following location:

Humboldt County Office of Education
901 Myrtle Avenue
Eureka, CA 95501

3. Requests for Information. A bidder's failure to request clarification or interpretation of an apparent error, inconsistency or ambiguity in the Contract Documents waives that bidder's right to thereafter claim entitlement to additional compensation based upon an ambiguity, inconsistency, or error, which should have been discovered by a reasonably prudent Contractor, subject to the limitations of Public Contract Code §1104. Any questions relative to the bid shall be in writing and directed to the Project Manager at the address specified for receipt of bid proposals. These requests shall be submitted to the Project Manager at least five working days prior to the date the bid is due.
4. Bid Proposal Forms. All bid proposals shall be made on the form provided by the District. All items on the form shall be filled out in ink. Numbers should be stated in figures, and the signatures of all individuals must be in long hand. The completed form should be without interlineations, alterations, or erasures.
5. Execution of Forms. Each bid shall give the full business address of the bidder and must be signed by the bidder or bidder's authorized representative with his or her usual signature. Bids by partnerships must furnish the full names of all partners and must be signed in the partnership name by a general partner with authority to bind the partnership in such matters. Bids by corporations must be signed with the legal name of the corporation, followed by the signature and designation of the president, secretary, or other person authorized to bind the corporation in this matter. The name of each person signing shall also be typed or printed below the signature. When requested by the District, satisfactory evidence of the authority of the officer signing on behalf of the corporation or partnership shall be furnished. A bidder's failure to properly sign required forms may result in rejection of the bid. All bids must include the bidder's contractor license number(s) and expiration date(s).
6. Bid Security. Bid proposals shall be accompanied by a certified or cashier's check or bid bond for an amount not less than ten percent (10%) of the bid amount, payable to the District. A bid bond shall be secured from an admitted surety company, licensed in the State of California, and satisfactory to the District. The bid security shall be given as a guarantee that the bidder will enter into the Contract if awarded the work, and in the case of refusal or failure to enter into the Contract within ten (10) calendar days after notification of the award of the Contract or failure to provide the payment and performance bonds and proof of insurance as required by the Contract Documents, the District shall have the right to award the Contract to another bidder and declare the bid security forfeited. The District reserves the right to pursue all other remedies in law or equity relating to such a breach including, but not limited to, seeking recovery of damages for breach of contract. Failure to provide bid security, or bid security in the proper amount, shall result in rejection of the bid.
7. Withdrawal of Bid Proposals. Bid proposals may be withdrawn by the bidders prior to the time fixed for the opening of bids, but may not be withdrawn for a period of sixty

(60) days after the opening of bids, except as permitted pursuant to Public Contract Code §5103.

8. Addenda or Bulletins. The District reserves the right to issue addenda or bulletins prior to the opening of the bids subject to the limitations of Public Contract Code §4104.5. Any addenda or bulletins issued prior to bid time shall be considered a part of the Contract Documents.
9. Bonds. The successful bidder shall be required to submit payment and performance bonds as specified in and using the bond forms included with the Contract Documents. All required bonds shall be based on the maximum total contract price as awarded, including additive alternates, if applicable.
10. Rejection of Bids and Award of Contract. The District reserves the right to waive any irregularities in the bid and reserves the right to reject any and all bids. The Contract will be awarded, if at all, within sixty (60) calendar days after the opening of bids to the lowest responsible and responsive bidder, subject to Governing Board approval. The time for awarding the Contract may be extended by the District with the consent of the lowest responsible, responsive bidder.
11. Execution of Contract. The successful bidder shall, within ten (10) calendar days of the Notice of Award of the Contract, sign and deliver to the District the executed contract along with the bonds and certificates of insurance required by the Contract Documents. In the event the successful bidder fails or refuses to execute the Contract or fails to provide the bonds and certificates as required, the District may declare the bidder's bid deposit or bond forfeited as liquidated damages, and may award the work to the next lowest responsible, responsive bidder, or may reject all bids and, in its sole discretion, call for new bids. In all cases, the District reserves the right, without any liability, to cancel the award of Contract at any time prior to the full execution of the Contract.
12. Drawings and Specifications. All drawings, specifications and other documents used or prepared during the project shall be the exclusive property of the District.
13. Evidence of Responsibility. Upon the request of the District, a bidder shall submit promptly to the District satisfactory evidence showing the bidder's financial resources, the bidder's experience in the type of work being required by the District, the bidder's availability to perform the Contract and any other required evidence of the bidder's qualifications and responsibility to perform the Contract. The District may consider such evidence before making its decision to award the Contract. Failure to submit requested evidence may result in rejection of the bid.
14. Taxes. Applicable taxes shall be included in the bid prices.
15. Bid Exceptions. Bid exceptions are not allowed. If the Bidder has a comment regarding the bid documents or the scope of work, the Bidder shall submit those comments to the

District for evaluation at least seven working days prior to the opening of the bids. No oral or telephonic modification of any bid submitted will be considered and a sealed written modification may be considered only if received prior to the opening of bids. E-mailed or faxed bids or modifications will not be accepted.

16. Discounts. Any discounts which the bidder desires to provide the District must be stated clearly on the bid form itself so that the District can calculate the net cost of the bid proposal. Offers of discounts or additional services not delineated on the bid form will not be considered by the District in the determination of the lowest responsible responsive bidder.
17. Quantities. The quantities shown on the plans and specifications are approximate. The District reserves the right to increase or decrease quantities as desired.
18. Prices. Bidders must quote prices F.O.B. Humboldt County Office of Education Franklin Site unless otherwise noted. Prices should be stated in the units specified and bidders should quote each item separately.
19. Samples. On request, samples of the products being bid shall be furnished to the District.
20. Special Brand Names/Substitutions. In describing any item, the use of a manufacturer or special brand does not restrict bidding to that manufacturer or special brand, but is intended only to indicate quality and type of item desired, except as provided in §3400 of the Public Contract Code. Substitute products will be considered either prior to or after the award of the Contract in accordance with §3400 and as set forth in either the Supplemental Conditions or the Scope of Work. All data substantiating the proposed substitute as an "equal" item shall be submitted with the written request for substitution. Substitutions for products qualifying for rebates must meet the same qualifications. The District and its representatives reserve the right to make all final decisions on product and vendor selection.
21. Container Costs and Delivery. All costs for containers shall be borne by the bidder. All products shall conform to the provisions set forth in the federal, county, state, and city laws for their production, handling, processing and labeling. Packages shall be so constructed to ensure safe transportation to the point of delivery.
22. Bid Negotiations. A bid response to any specific item of the bid using terms such as "negotiable," "will negotiate," or similar phrases, will be considered non-responsive.
23. Prevailing Law. In the event of any conflict or ambiguity between these instructions and state or federal law or regulations, the latter shall prevail. All equipment to be supplied or services to be performed under the bid proposal shall conform to all applicable requirements of local, state and federal law, including, but not limited to, Labor Code §§1771, 1778 and 1779.

24. Allowances. An “allowance” means an amount included in the bid proposal for work that may or may not be included in the Project, depending on conditions that will become known only after the Project is underway.
25. Subcontractors. Pursuant to the Subletting and Subcontracting Fair Practices Act, Public Contract Code §§4100-4114, every bidder shall, on the enclosed Subcontractor List Form, set forth:
- a. The name and location of the place of business of each Subcontractor who will perform work or labor or render service to the bidder in or about the work or fabricate and install work in an amount in excess of one-half (1/2) of the one percent (1%) of the bidder's total bid.
 - b. If the bidder fails to specify a Subcontractor for any portion of the work to be performed under the Contract in excess of one-half (1/2) of one percent (1%) of the bidder's total bid, bidder agrees that bidder is fully qualified to and shall perform that portion of the work. The successful bidder shall not, without the written consent of the District or compliance with Public Contract Code §§4100 - 4114, either:
 - 1) Substitute any person as Subcontractor in place of the Subcontractor designated in the original bid;
 - 2) Permit any subcontract to be voluntarily assigned or transferred or allow the work to be performed by anyone other than the original Subcontractor listed in the bid; or
 - 3) Sublet or subcontract any portion of the work in excess of one-half (1/2) of one percent (1%) of the total bid as to which the bidder's original bid did not designate a Subcontractor.
26. Examination of Contract Documents and Work Site. Before submitting a bid proposal, all bidders shall carefully examine the Contract Documents, including the plans and specifications, shall visit the site of the proposed work, and shall fully inform themselves of all conditions in and about the work site, as well as applicable federal, state, and local laws and regulations that may affect the work. No bidder shall visit the site without prior authorization of the District. Bidders shall contact the District Superintendent or designee for coordination of site visits.
27. Form and Approval of Contract. The Contract Documents must be approved by the Governing Board of the District and its legal counsel. The bidder selected by the District shall execute the contract provided by the District.
28. Licenses and Permits. Each bidder, and its Subcontractors, if any, shall at all times possess all appropriate and required licenses or other permits to perform the work as

identified in the Contract Documents. Upon request, each bidder shall furnish the District with evidence demonstrating possession of the required licenses or permits.

29. Denial of Right to Bid. Contractors or Subcontractors who have violated state law governing public works shall be denied the right to bid on this public works contract pursuant to Labor Code §1777.7.
30. Bidders Interested in More Than One Bid. No person, firm, or corporation shall make, or file, or be interested in more than one bid. However, a person, firm, or corporation that has submitted a sub-proposal to a bidder, or that has quoted prices of materials to a bidder, is not thereby disqualified from submitting a sub-proposal or quoting prices to other bidders or from submitting a prime proposal.
31. Contractor's State License Board. Contractors and Subcontractors are required by law to be licensed and regulated by the California Contractors' License Board.
32. Fingerprinting. By law it is the District's responsibility to determine whether a contractor must provide fingerprint certification. Pursuant to Education Code §45125.2, the District considers the totality of the circumstances in order to determine if fingerprinting of employees of a contractor working on a school site is required. Factors to be considered include the length of time the contractor's employees are on school grounds, whether students are in proximity to the location where the contractor's employees are working, and whether the contractor's employees are working alone or with others.
33. Disabled Veterans Participation Goals. In accordance with Education Code §17076.11, this District has a participation goal for disabled veteran business enterprises ("DVBE") of at least 3 percent per year of the overall dollar amount of funds allocated to the District by the State Allocation Board pursuant to the Leroy F. Greene School Facilities Act of 1998 for construction or modernization and expended each year by the District. Prior to, and as a condition precedent for final payment under the Contract for the project, the Contractor shall provide appropriate documentation to the District identifying the amount paid to DVBE in conjunction with the contract, so that the District can assess its success at meeting this goal. The Office of Small Business and DVBE Certification (OSDC), (916) 375-4940, www.pd.dgs.ca.gov/smbus/default.htm, is an information resource to assist bidders in locating Disabled Veteran Business Enterprises. (Please note: while the OSDC may be used as a resource, the DVBE Program administered by OSDC applies to state contracts, not local agency (school district) contracts.)
34. Labor Compliance Program. The project is subject to compliance monitoring and enforcement by the California Department of Industrial Relations. In accordance with SB 854, all bidders, contractors, and subcontractors working at the sites shall be duly registered with the Department of Industrial Relations at time of bid opening and at all relevant times. Proof of registration shall be provided as to all such contractors prior to the commencement of any work.

35. Additive and Deductive Items: Method of Determining Lowest Bid. Pursuant to Public Contract Code §20103.8, if the bid solicitation includes additive and/or deductive items, the checked [X] method shall be used to determine the lowest bid:

 X (a) The lowest bid shall be the lowest bid price on the base contract without consideration of the prices on the additive or deductive items.

 (b) The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items that were specifically identified in the bid solicitation or Bid Proposal Form as being used for the purpose of determining the lowest bid price.

 (c) The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items taken in order from a specifically identified list of those items that, when in the solicitation, and added to, or subtracted from, the base contract, are less than, or equal to, a funding amount publicly disclosed by the District before the first bid is opened.

 (d) The lowest bid shall be determined in a manner that prevents any information that would identify any of the bidders or the proposed Subcontractors or suppliers from being revealed to the public entity before the ranking of all bidders from lowest to highest has been determined.

If no method is checked, sub-paragraph (a) shall be used to determine the lowest bid.

Notwithstanding the method used by the District to determine the lowest responsible bidder, the District retains the right to add to or deduct from the Contract any of the items included in the bid solicitation.

37. Bid Protest. Any bid protest must be in writing and received by the District Office before 5:00 p.m. no later than three (3) working days following bid opening and shall comply with the following requirements:

- a. The bid protest must contain a complete statement of the basis for the protest and all supporting documentation.
- b. The party filing the protest must have actually submitted a bid for the Project. A Subcontractor of a bidder submitting a bid for the Project may not submit a bid protest. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest.
- c. The protest must refer to the specific portion or portions of the Contract Documents upon which the protest is based.

- d. The protest must include the name, address and telephone number of the person representing the protesting bidder.
- e. The bidder filing the protest must concurrently transmit a copy of the bid protest and all supporting documentation to all other bidders with a direct financial interest which may be affected by the outcome of the protest, including all other bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.
- f. The bidder whose bid has been protested may submit a written response to the bid protest. Such response shall be submitted to the District before 5 p.m. no later than two (2) working days after the deadline for submission of the bid protest or receipt of the bid protest, whichever is sooner, and shall include all supporting documentation. Such response shall also be transmitted concurrently to the protesting bidder and to all other bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.
- g. The procedure and time limits set forth in this section are mandatory and are the bidder's sole and exclusive remedy in the event of bid protest. The bidder's 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.
- h. If the District determines that a protest is frivolous, the protesting bidder may be determined to be non-responsible and that bidder may be determined to be ineligible for future contract awards by the District.
- i. A "working day" for purposes of this section means a weekday during which the District's office is open and conducting business, regardless of whether or not school is in session.

BID PROPOSAL FORM

Governing Board
Humboldt County Office of Education

Dear Members of the Governing Board:

The undersigned, doing business under the name of _____, having carefully examined the location of the proposed work, the local conditions of the place where the work is to be done, the Notice Inviting Bids, the General Conditions, the Instructions to Bidders, the Plans and Specifications, and all other Contract Documents for the proposed Humboldt County Office of Education **Administration Building Furnace Project** ("Project"), and having accurately completed the Bidder's Questionnaire, proposes to perform all work and activities in accordance with the Contract Documents, including all of its component parts, and to furnish all required labor, materials, equipment, transportation and services required for the construction of the Project in strict conformity with the Contract Documents, including the Plans and Specifications, as follows:

BID:

<i>Energy Efficiency Measure(s)</i>	<i>Description</i>	<i>For Scoping See:</i>	<i>Total Installed Cost</i>
Furnace Upgrade	Install five (5) new 97% AFUE condensing furnaces, demolish and replace attic walkways, platforms, and draft stops.	Project Manual and Signed Drawings	\$
Furnace Controls	Install five (5) new programmable thermostats	Project Manual and Signed Drawings	\$

For the sum of: _____dollars(\$ _____).

The undersigned has checked carefully all the above figures and understands that the District is not responsible for any errors or omissions on the part of the undersigned in making this bid.

Enclosed find certified or cashier's check no. _____ of the _____ Bank for _____ Dollars (\$ _____) or Bidder's Bond of the _____ surety company in an amount of not less than ten percent (10%) of the entire bid. The undersigned further agrees, on the acceptance of this proposal, to execute the Contract and provide the required bonds and insurance and that in case of default in executing these documents within the time fixed by the Contract Documents, the proceeds of the check or bond accompanying this bid shall be forfeited and shall become the property of the District.

Contractor agrees to commence the work within the time specified in the Notice to Proceed. It is understood that this bid is based upon completing the work within the number of calendar days specified in the Contract Documents.

ADDENDA:

Receipt of the following addenda is hereby acknowledged:

Addendum # _____	Dated: _____	Addendum # _____	Dated: _____
Addendum # _____	Dated: _____	Addendum # _____	Dated: _____
Addendum # _____	Dated: _____	Addendum # _____	Dated: _____

Respectfully submitted,

Company: _____

Address: _____

By: _____
(Please Print or Type)

Signature: _____

Title: _____

Date: _____

Telephone: _____

Contractor's License No: _____ Expiration Date _____

- Required Attachments:
- 1) Subcontractor List Form
 - 2) Workers' Compensation Certificate
 - 3) Non-Collusion Affidavit
 - 4) Bid Bond (or Cashier's or Certified Check)
 - 5) Bidder's Questionnaire

1) SUBCONTRACTOR LIST FORM

Each bidder shall list below the name and location of place of business for each Subcontractor who will perform a portion of the Contract work in an amount in excess of 1/2 of 1 percent of the total contract price. The nature of the work to be subcontracted shall also be described.

[illegible]

2) WORKERS' COMPENSATION CERTIFICATE

Labor Code §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 in one or more insurers duly authorized to write compensation insurance in this State.
- (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 §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 and will require all Subcontractors to do the same.

Contractor

By: _____

In accordance with Article 5 (commencing at §1860), Chapter 1, Part 7, Division 2 of the Labor Code, the above certificate must be signed and filed with the awarding body prior to performing any work under this Contract.

3) NONCOLLUSION AFFIDAVIT

To be executed by the bidder and submitted with the bid.

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

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

Date: _____

Signature

4) BID BOND

We, the Contractor, _____ as principal ("Principal"), and _____, as surety ("Surety"), are firmly bound unto the Humboldt County Office of Education ("District") in the penal sum of ten percent (10%) of the total amount of the bid of the Principal submitted to the District for the work described below for the payment of which sum in lawful money of the United States, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by this agreement.

Whereas, the Principal has submitted the accompanying bid ("Bid") dated _____, for the following project ("Project"): Proposition 39 Administration Building Furnace Project

Now, therefore, if the Principal does not withdraw its Bid within the period specified, and if the Principal is awarded the Contract and within the period specified fails to enter into a written contract with District, in accordance with the Bid as accepted, or fails to provide the proof of required insurance, the performance bond and/or the payment bond by an admitted surety within the time required, or in the event of unauthorized withdrawal of the Bid, if the Principal pays the District the difference between the amount specified in the Bid and the amount for which District may otherwise procure the required work and/or supplies, if the latter amount is in excess of the former, together with all related costs incurred by District, then the above obligation shall be void and of no effect. Otherwise, the Principal and Surety shall pay to the District the penal sum described above as liquidated damages.

Surety, for value received, hereby agrees that no change, extension of time, alteration or addition to the term 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.

In witness whereof the above-bound parties have executed this instrument under their several seals this _____ day of _____, 2017, the name and corporate seal of each corporate Party being hereunder affixed and these presents duly signed by its undersigned representative, pursuant to the authority of its governing body.

(Corporate Seal)

Principal/Contractor

By _____

Title: _____

(Corporate Seal)

Surety

Attach Attorney-In-Fact Certificate

By _____

Title _____

To be signed by Principal and Surety and Acknowledgment and Notary Seal to be attached.

5) BIDDER'S QUESTIONNAIRE

for

Proposition 39 Administration Building Furnace Project

TO THE BIDDER:

In making its award, the Governing Board will take into consideration the Bidder's experience, financial responsibility and capability. The following questionnaire is a part of the bid. Any bid received without this completed questionnaire may be rejected as nonresponsive. The Board will use, but will not be limited to, the information provided herein for evaluating the qualifications and responsibility of the bidder and the bidder's organization to carry out satisfactorily the terms of the Contract Document. The questionnaire must be filled out accurately and completely and submitted with the bid. Any errors, omissions or misrepresentation of information may be considered as a basis for the rejection of the bid and may be grounds for the termination of any contract executed as a result of the bid.

A. Description of Bidder's Organization

1. Firm Name _____

2. Address _____

3. Telephone Number _____

4. Type of Organization

a. Corporation? Yes ____ No ____

If yes, list the officers and positions, and the State in which incorporated.

If the Bidder corporation is a subsidiary, give name and address of parent corporation.

b. Partnership? Yes ____ No ____

If yes, list partner names and addresses

General Partners:

Limited Partners:

c. Individual Proprietorship? Yes ____ No ____

If yes, list name and address of proprietor:

B. Nature of Operations

1. How long have you been engaged in the contracting business under your present business name? _____

2. How many years of experience does your business have in construction work similar to that called for under this bid? _____

3. Have you now contracts, or have you ever contracted, to provide construction for any school district, community college district or county office of education in the State of California? Yes ____ No ____

a. If "yes," on a separate attached sheet, provide the following information for all construction projects you have had with school districts, community college districts and county offices of education during the last four (4) years:

1. Year contract awarded
2. Type of work
3. Contract completion time called for/actual completion time
4. Contract price
5. For whom performed, including person to call for a reference and telephone number
6. Location of work
7. Number of stop notices filed
8. For each contract, list any lawsuits filed relating to that contract in which you were a defendant or plaintiff
9. Amount of liquidated damages assessed.

b. On a separate attached sheet, provide the following information for all construction contracts of a similar nature as called for in this bid that you have

had with entities other than school districts, community college districts and county offices of education during the last four (4) years:

1. Year contract awarded
2. Type of work
3. Contract completion time called for/actual completion time
4. Contract price
5. For whom performed, including person to call for reference and phone number
6. Location of work
7. Number of stop notices filed
8. For each contract list any lawsuits filed relating to that contract in which you were a defendant or plaintiff
9. Amount of liquidated damages assessed.

- c. For each construction contract that you have failed to complete within the contract time in the last four years please state the reasons for the untimely performance.

C. Financial and Credit Data

1. If your bid is considered for award, and if requested by the District, will you supply the following data? Yes ____ No ____
 - a. Names and addresses of any banks where you regularly do business.
 - b. The names and addresses of any banks, finance companies, dealers, suppliers, or others where you have notes or loans.
 - c. Give credit references, including at least three trade or industry suppliers with whom you regularly deal.
2. Will you submit on request a balance sheet for the past three (3) years?
Yes ____ No ____
3. Where have you engaged in the construction business, or any other type of business, in the last five years?

<u>Name of Business</u>	<u>Location</u>	<u>Type of Business</u>	<u>Years in Business</u>
-------------------------	-----------------	-------------------------	--------------------------

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

If any of the business endeavors referred to above are no longer operating, or you are no longer associated with them, please give brief details:

4. The following surety companies may be contacted as references as to the financial responsibility and general reliability of the bidder:

Surety Name

Contact Person

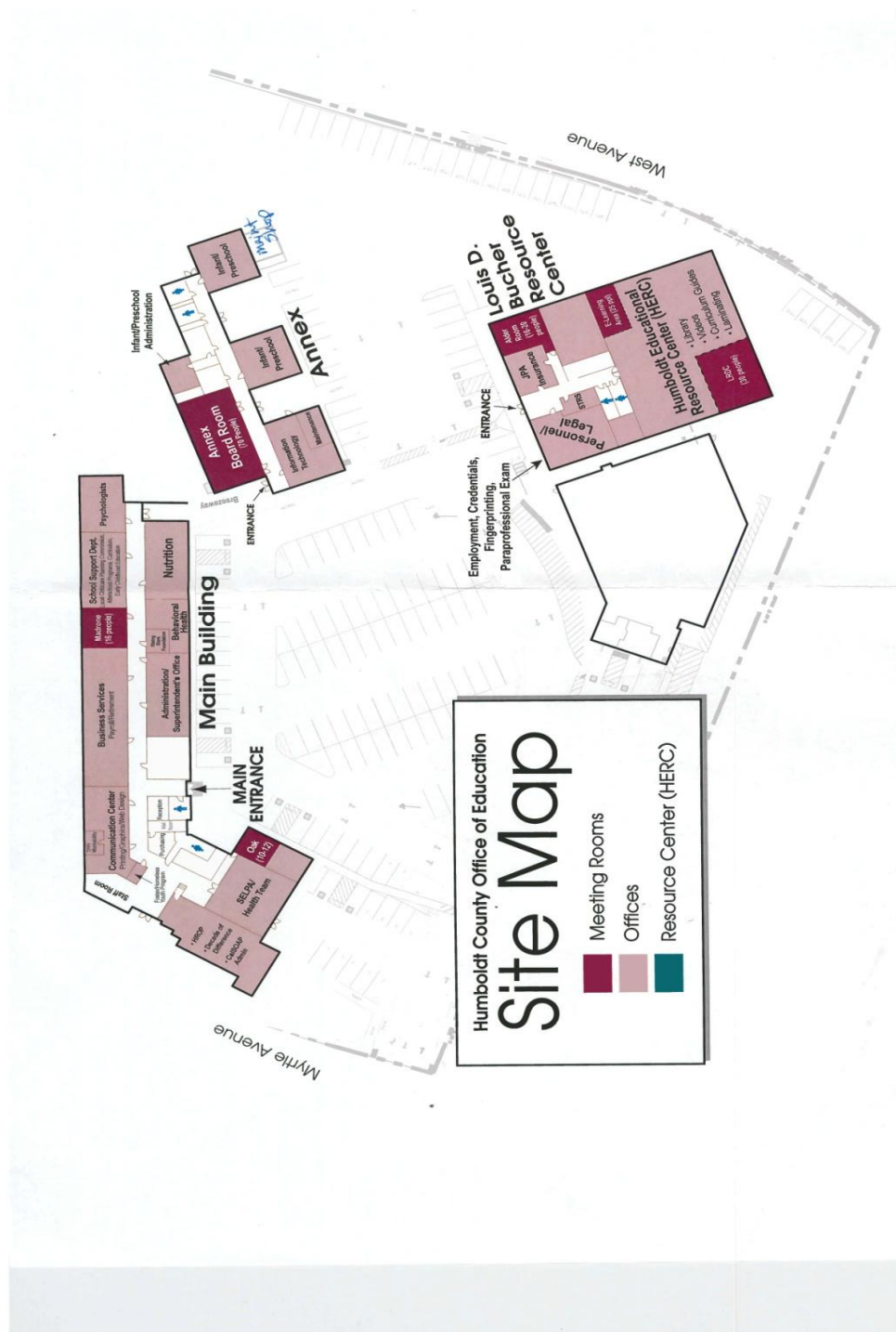
Phone Number

I certify under penalty of perjury that the foregoing is true and correct. Executed at _____, California, on _____, 2017.

Signature of Bidder

Name (*print*)

Appendix 1 – Humboldt County Office of Education Franklin Site Map



CONTRACT

Humboldt County Office of Education - Administration Building Furnace Project

This Contract ("Contract") is made by and between the Humboldt County Office of Education ("District"), and _____ ("Contractor").

District and Contractor hereby agree as follows:

1. Description of Work

The Contractor agrees to furnish all labor, materials, equipment, tools, supervision, appurtenances, and services, including transportation and utilities, required to perform and satisfactorily complete all work required for the following project ("Project") in full conformance with the Contract Documents: Proposition 39 Administration Building Furnace Project.

2. Contract Documents

The Contract Documents consist of the executed Contract and all Addenda, all approved change orders, the completed Bid Form, the required Bonds and the Insurance forms, the Notice Inviting Bids, the Instructions to Bidders, the Notice of Award, the Notice to Proceed, the General Conditions and any supplemental conditions, the Technical Specifications, the Drawings, the completed Bidder's Questionnaire, and Disabled Veteran Business Enterprises Requirements (if applicable), and all addenda to the Invitation for Bids.

3. Compensation

As full compensation for the Contractor's complete and satisfactory performance of the work and activities described in the Contract Documents, the District agrees to pay Contractor, and Contractor agrees to accept the sum of _____ (\$ _____), which shall be paid to the Contractor according to the Contract Documents.

4. Prevailing Wages

This Project is subject to prevailing wage requirements and Contractor and its Subcontractors are required to pay all workers employed for the performance of this Contract no less than the applicable prevailing wage rate for each such worker. Contractor acknowledges that the project is subject to compliance monitoring and enforcement by the California Department of Industrial Relations in accordance with SB 854.

5. Time for Completion

The starting date of the Contract shall be the day listed by the District in the Notice to Proceed and the Contractor shall fully complete all the work before the expiration of 60 calendar days from the starting date. Time is of the essence in the performance of this Contract.

6. Liquidated Damages

Liquidated damages for the Contractor's failure to complete the Contract within the time fixed for completion are established in the amount of \$200 per calendar day.

IN WITNESS WHEREOF, the parties agree to the terms of this Contract on the day and year written below.

District

Contractor

Resolution No. _____

Contractor License No.
and Expiration Date

Date

By: _____
Individual Signature

Title

Date

For: _____
Corporation or Partnership

If Corporation, Seal Below.

GENERAL CONDITIONS

1. DEFINITIONS

Addendum: A written change or revision to the Contract Documents issued to the prospective bidders prior to the time of receiving bids.

Alternate: The sum to be added to or deducted from the base Bid if the change in scope of work as described in Alternates is accepted by the District.

Approved: Approved by the District or the District's authorized representative unless otherwise indicated in the Contract Documents.

Architect: The person or firm holding a valid license to practice architecture or engineering which has been designated (if any designated) to provide architectural or engineering design services on this Project. When Architect is referred to within the Contract Documents and no architect or engineer has in fact been designated, then the matter shall be referred to the District Superintendent or designee.

As Directed: As directed by the District or its Project Manager, unless otherwise indicated in the Contract Documents.

As Selected: As selected by the District or its Project Manager, unless otherwise indicated in the Contract Documents.

Bid: The properly completed and signed proposal to perform the construction work for the Project as described in the Contract Documents.

Construction Manager: The individual or entity named as such by the District. If no Construction Manager is designated for the Project, all references to the Construction Manager in these Contract Documents shall mean the District and/or its designee.

Contract: The legally binding agreement between the District and the Contractor wherein the Contractor agrees to furnish the labor, materials, equipment, and appurtenances required to perform the work described in the Contract Documents and the District agrees to pay the Contractor for such work.

Contract Documents: The Contract Documents are described in the Contract for this Project.

Contractor: The person or entity holding a valid license in the State of California required for performing this Project and who has contracted with the District to perform the construction work described in the Contract Documents. The term Contractor shall be construed to mean all of the officers, employees, Subcontractors, suppliers, or other persons engaged by the Contractor for the work of this Project.

District and/or Owner: The District, its Governing Board, authorized officers and employees, and authorized representatives.

DSA: The State of California Division of the State Architect which has the authority to review, approve and inspect the design, alteration and construction of school buildings.

Final Completion: Final Completion is achieved when the Contractor has fully completed all Contract Document requirements, including, but not limited to, all final punch list items, to the District's satisfaction.

Inspector: The person engaged by the District to conduct the inspections required by the Education Code and Title 24.

Furnish: Purchase and deliver to the site of installation.

Governing Board: The Governing Board of the District.

Indicated or As Shown: Shown on drawings and/or as specified.

Install: Fix in place, for materials; and fix in place and connect, for equipment.

Modification: An authorized change to the Contract Documents which may or may not include a change in contract price and/or time.

Project: The total construction work and activities described in these Contract Documents.

Project Manager: Redwood Coast Energy Authority (RCEA) serves as the Proposition 39 Project Manager for this Project. The Project Manager is responsible for the administration of the project. The Architect has prepared the plans and technical specifications.

Secure: Obtain.

Subcontractor: A person, firm, or corporation, duly licensed by the State of California, who has a contract with the Contractor to furnish labor, materials and equipment, and/or to install materials and equipment for work in this Contract.

2. PROJECT MANAGER

The Project Manager is responsible for the overall design of the Project. The technical Specifications and other information necessary to define the work covered by these Contract Documents have been prepared by the Project Manager. The Project Manager shall visit, inspect and observe the construction to determine general compliance with the Contract Documents, and interpret the drawings and Specifications consistent with their intent. The Project Manager shall evaluate the samples and other submittals required in the technical Specifications, and maintain an up-to-date log of all such items processed. The Project Manager will consult with the District, Contractor, and any state, county or city agency having jurisdiction over the work whenever necessary to further the best interests of the Project.

3. CONTRACT DOCUMENTS

a. Contents and Precedence

The Contract Documents consist of the executed Contract and all Addenda, all approved change orders, the completed Bid Form, the required Bonds and the Insurance forms, the Notice Inviting Bids, the Instructions to Bidders, the Notice of Award, the Notice to Proceed, the General Conditions, any supplemental Conditions, the Technical Specifications, the Drawings and the completed Bidder's Questionnaire. The Contract Documents are complementary and anything required by one shall be as binding as if required by all. In case of conflicts within the Contract Documents, the order of precedence of interpretation shall be as listed above, with the executed Contract and any change order thereto having priority, and subsequent Addenda having priority over prior Addenda only to the extent modified by the subsequent Addenda. In case of conflict within the drawings, larger scale drawings shall govern smaller scale drawings, and written dimensions shall govern over scaled dimensions.

b. Ambiguities, Errors, and Inconsistencies

If, in the opinion of the Contractor, the construction details indicated on the drawings or otherwise specified are in conflict with accepted industry standards for quality construction and therefore might interfere with its full guarantee of the work involved, the Contractor shall promptly bring this information to the attention of the Architect for appropriate action before submittal of the bid. Contractor's failure to request clarification or interpretation of an apparent ambiguity, error or inconsistency waives that Contractor's right to thereafter claim any entitlement to additional compensation based upon an ambiguity, inconsistency, or error, which should have been discovered by a reasonably prudent Contractor, subject to the limitations of Public Contract Code §1104. During the Project, should any discrepancy appear or any misunderstanding arise as to the import of anything contained in the Contract Documents, the matter shall be promptly referred to the Architect, who will issue instructions or corrections.

c. Lines and Planes

All lines and planes appearing on Contract drawings to be horizontal or vertical and not explicitly indicated otherwise shall be constructed true and plumb. All lines and planes appearing on Contract drawings to intersect at right angles and not explicitly indicated otherwise shall be constructed at true right angles. Where details are indicated covering specific conditions, such details also apply to all similar conditions not specifically indicated.

d. Standards

The specification standards of the various sections of the Specifications shall be the procedural, performance, and material standards of the applicable association publications identified and shall be the required level of installation, materials, workmanship, and performance for the applicable work. Except where a specific date of issue is mentioned hereinafter, references to specification standards shall mean the edition, including amendments and supplements, in effect on the date of the Notice Inviting Bids. Where no standard is identified and a manufacturer is specified, the manufacturer's

specifications are the standards. All standards shall be subordinate to the requirements of the applicable codes and regulations.

e. Reference to the Singular

Wherever in the Specifications an article, device or piece of equipment is referred to in the singular number, such reference shall include as many such items as are shown on drawings or required to complete the installation.

4. INTENT OF DRAWINGS AND SPECIFICATIONS

a. Drawings and Specifications are to be read as an integrated document. The Contractor shall promptly report to the Project Manager any ambiguities, discrepancies, or errors which come to the Contractor's attention.

b. Figured dimensions shall be followed in preference to scaled dimensions, and the Contractor shall make all additional measurements necessary for the work and shall be responsible for their accuracy. Before ordering any material or doing any work, the Contractor shall verify all measurements at the Project site and shall be responsible for the correctness of same.

c. It is the intent of the drawings and Specifications to show and describe complete installations. Items shown but not specified, or specified but not shown, shall be included unless specifically omitted.

1) The Specifications shall be deemed to include and require everything necessary and reasonably incidental to the completion of all work described and indicated on the drawings, whether particularly mentioned or shown, or not.

5. TRADE DIVISIONS

Segregation of the Specifications into the designated trade divisions is only for the purpose of facilitating descriptions and shall not be considered as limiting the work of any subcontract or trade. Subject to other necessary provisions set forth in the Specifications, the terms and conditions of such limitations or inclusions shall lie solely between the Contractor and its Subcontractors. "Scope" as indicated in each section of the Specifications shall serve only as a general guide to what is included in that section. Neither the stated description nor the division of the plans and Specifications to various sections, which is done solely for convenience, shall be deemed to limit the work required, divide or indicate it by labor jurisdiction or trade practice, or set up any bidding barriers to the various sub-contractors or suppliers.

a. The Contractor shall be responsible for the proper execution of all work required by the Contract Documents and for allocating such portions as the Contractor sees fit to the various Subcontractors, subject to applicable law. The Contractor is cautioned that the various individual sections may not contain all work that the Contractor may wish to allocate to a particular Subcontractor or everything bearing on the work of a particular trade, some of which may appear in other portions of the plans or Specifications.

b. If the Contractor elects to enter into any subcontract for any section of the work the Contractor assumes all responsibility for ascertaining that the Subcontractor for the work is competent, licensed, solvent, thoroughly acquainted with all conditions and legal requirements of the work, has included all materials and appurtenances in connection therewith in the subcontract, and has performed its work in strict compliance with the Contract Documents.

c. It shall be the responsibility of the Contractor to notify each prospective Subcontractor at the time of request for bids of all portions of the Contract Documents, including the General Conditions, Supplementary Conditions and any parts of sections of Specifications or plans that the Contractor intends to include as part of the subcontract.

6. MASTER MANDATORY PROVISIONS

a. Any material, item, or piece of equipment mentioned, listed or indicated without definition of quality, shall be consistent with the quality of adjacent or related materials, items, or pieces of equipment on the Project.

b. Any method of installation, finish, or workmanship of an operation called for, without definition of standard of workmanship, shall be followed or performed and finished in accordance with best practices and consistent with adjacent or related installations on the Project.

c. Any necessary material, item, piece of equipment or operation not called for but reasonably implied as necessary for proper completion of the work shall be furnished, installed or performed and finished; and shall be consistent with adjacent or related materials, items, or pieces of equipment on the Project, and in accordance with best practices.

d. Names or numbered products are to be used according to the manufacturers' directions or recommendations unless otherwise specified.

7. CONTRACTOR

a. The Contractor shall perform all the work and activities required by the Contract Documents and furnish all labor, materials, equipment, tools and appurtenances necessary to perform the work and complete it to the District's satisfaction within the time specified. The Contractor shall at all times perform the work of this Contract in a competent and workmanlike manner and, if not specifically stated, accomplish the work according to the best standards of construction practice. The Contractor in no way is relieved of any responsibility by the activities of the Project Manager, engineer, inspector or DSA in the performance of such duties.

b. The Contractor shall employ a full-time competent superintendent and necessary assistants who shall have complete authority to act for the Contractor on all matters pertaining to the work. The superintendent shall be satisfactory to the District and, if not satisfactory, shall be replaced by the Contractor with one that is acceptable. Also, the superintendent shall not be changed without the written consent of the District unless the superintendent ceases to be employed by the Contractor.

c. Contractor shall make the layout of lines and elevations and shall be responsible for the accuracy of both the Contractor's and the Subcontractors' work resulting therefrom. All dimensions

affecting proper fabrication and installation of all Contract work must be verified by the Contractor prior to fabrication and installation by taking field measurements of the true conditions. The Contractor shall take, and assist Subcontractors in taking, all field dimensions required in performance of the work, and shall verify all dimensions and conditions on the site. If there are any discrepancies between dimensions in drawings and existing conditions which will affect the work, the Contractor shall promptly bring such discrepancies to the attention of the Architect for adjustment before proceeding with the work. Contractor shall be responsible for the proper fitting of all work and for the coordination of all trades, Subcontractors and persons engaged upon this Contract.

d. Contractor shall do all cutting, fitting, or patching of Contractor's work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors as shown, or reasonably implied by, the drawings and Specifications for the completed work. Any cost incurred by the District due to defective or ill-timed work shall be borne by the Contractor.

8. RESPONSIBILITY OF CONTRACTOR

a. Contractor shall be held strictly responsible for the proper performance of all work covered by the Contract Documents, including all work performed by Subcontractors. All work performed under this Contract shall comply in every respect to the rules and regulations of all agencies having jurisdiction over the Project or any part thereof.

b. Contractor shall submit Verified Reports as defined in §§4-336 and 4-343 (c), Group 1, Chapter 4, Part I, Title 24, California Code of Regulations ("CCR"). The duties of the Contractor are as defined in §4-343, Group 1, Chapter 4, Part I, Title 24, of the CCR. Contractor shall keep and make available a copy of Title 24 of the CCR at the job site at all times.

c. Where, because of short supply, any item of fabricated materials and/or equipment, indicated on drawings or specified is unobtainable and it becomes necessary, with the consent of the Project Manager, to substitute equivalent items differing in details or design, the Contractor shall promptly submit complete drawings and details indicating the necessary modifications of the work. This provision shall be governed by the terms of the General Conditions regarding Submittals: Shop Drawings, Cuts and Samples.

d. With respect to work performed at and near a school site, Contractor shall at all times take all appropriate measures to ensure the security and safety of students and staff, including, but not limited to, ensuring that all of Contractor's employees, Subcontractors, and suppliers entering school property strictly adhere to all applicable District policies and procedures, e.g., sign-in requirements, visitor badges, and access limitations.

9. SUBCONTRACTORS

a. Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor and the District. The District shall be deemed to be the third party beneficiary of the contract between the Contractor and each Subcontractor. If the Contractor does not specify a Subcontractor for any portion of the work to be performed under this Contract, as required by law, Contractor shall perform that portion of the work with its own forces. The Contractor shall not

substitute any other person or firm as a Subcontractor for those listed in the bid submitted by the Contractor, without the written approval of the District and in conformance with the requirements of the Public Contract Code. The District reserves the right of approval of all Subcontractors proposed for use on this Project, and to this end, may require financial, performance, and such additional information as is needed to secure this approval. If a Subcontractor is not approved, the Contractor shall promptly submit another firm of the same trade for approval.

b. The Contractor shall insert appropriate provisions in all subcontracts pertaining to work on this Project requiring the Subcontractors to be bound by all applicable terms of the Contract Documents. The Contractor shall be as fully responsible for the acts and omissions of the Subcontractors, and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by the Contractor.

10. PERFORMANCE AND PAYMENT BONDS

a. As directed in the Notice of Award, the Contractor shall file with the District the following bonds, using the bond forms provided with these Contract Documents:

1) A corporate surety bond, in a sum not less than 100 percent of the amount of the Contract, to guarantee the faithful performance of the Contract.

2) A corporate surety bond, in a sum not less than 100 percent of the amount of the Contract, to guarantee the payment of wages for services engaged and of bills contracted for materials, supplies, and equipment used in the performance of the Contract.

b. Corporate sureties on these bonds and on bonds accompanying bids must be admitted sureties as defined by law, legally authorized to engage in the business of furnishing surety bonds in the State of California. All sureties and bond forms must be satisfactory to the District. Failure to submit the required bonds within the time specified by the Notice of Award, using the forms provided by the District, may result in cancellation of the award of Contract and forfeiture of the Bid Bond.

c. The amount of the Contract, as used to determine the amounts of the bonds, shall be the total amount fixed in the Contractor's proposal for the performance of the required work.

d. During the period covered by the Contract, if any of the sureties upon the bonds shall become insolvent or unable, in the opinion of the District, to pay promptly the amount of such bonds to the extent to which surety might be liable, the Contractor, within thirty (30) days after notice given by the District to the Contractor, shall provide supplemental bonds or otherwise substitute another and sufficient surety approved by the District in place of the surety becoming insolvent or unable to pay. If the Contractor fails within such thirty (30) day period to substitute another and sufficient surety, the Contractor shall, if the District so elects, be deemed to be in default in the performance of its obligations hereunder and upon the bid bond, and the District, in addition to any and all other remedies, may terminate the Contract or bring any proper suit or other proceedings against the Contractor and the sureties or any of them, or may deduct from any monies then due or which thereafter may become due to the Contractor under the Contract, the amount for which the surety, insolvent or unable to pay, shall have been liable on the bonds, and the monies so deducted shall be held by the District as collateral security for the performance of the conditions of the bonds.

11. INSURANCE

a. Contractor shall obtain insurance from a company or companies acceptable to District. All required insurance must be written by an admitted company licensed to do business in the State of California at the time the policy is issued. All required insurance shall be equal to or exceed an A VIII rating as listed in Best's Insurance Guide's latest edition. On a case-by-case basis, the District may accept insurance written by a company listed on the State of California Department of Insurance List of Eligible Surplus Lines ("LESLI List") with a rating of A VIII or above as listed in Best's Insurance Guides' latest edition. Required documentation of such insurance shall be furnished to the District within the time stated in the Notice of Award. Contractor shall not commence work nor shall it allow its employees or Subcontractors or anyone to commence work until all insurance required hereunder has been submitted and approved by the District and a notice to proceed has been issued.

b. Contractor shall take out and maintain at all times during the life of this Contract, up to the date of acceptance of the work by the District, the following policies of insurance:

1) General Liability Insurance: Personal injury and replacement value property damage insurance for all activities of the Contractor and its Subcontractors arising out of or in connection with this Contract, written on a comprehensive general liability form including contractor's protected coverage, blanket contractual, completed operations, vehicle coverage and employer's non-ownership liability coverage, in an amount no less than:

a. \$1,000,000.00 annual combined single limit.

2) Builders Risk Insurance:

☐ Contractor is not required to procure and maintain builders' risk insurance (all-risk coverage).

☒ Contractor shall procure and maintain builders' risk insurance (all-risk coverage) on a one hundred percent completed value basis on the insurable portion of the project for the benefit of the District, and the Contractor and subcontractor as their interest may appear.

3) Automobile Liability Insurance: Covering bodily injury and property damage in an amount no less than \$1,000,000 combined single limit for each occurrence. Such insurance shall include coverage for owned, hired, and non-owned vehicles and be included on the umbrella/excess policy.

c. The certificate(s) for both the General Liability Policy(ies) and the Automobile Liability Policy specified above must state that the insurance is under an occurrence based, and not claims made, policy(ies) and shall be endorsed with the following specific language:

"The Humboldt County Office of Education (District) is named as additional insured for all liability arising out of the operations by or on behalf of the named insured, and this policy protects the additional insured, its officers, agents and employees against liability for bodily injuries, deaths or property damage or destruction arising in any respect directly or indirectly in the performance of the Contract."

d. The certificate(s) for the both the General Liability Policy and the Automobile Liability Policy, as well the Builders' Risk Policy if required above, shall be endorsed with the following specific language:

1) The inclusion of more than one insured shall not operate to impair the rights of one insured against another insured and the coverages afforded shall apply as though separate policies have been issued to each insured.

2) The insurance provided herein is primary and no insurance held or owned by the District shall be called upon to contribute to a loss.

3) Coverage provided by this policy shall not be reduced or canceled without thirty (30) days written notice given to the Owner by certified mail.

4) This policy does not exclude explosion, collapse, underground excavation hazard, or removal of lateral support.

5) The certificates must state that the insurance is under an occurrence based, and not a claims-made, or "modified occurrence," policy (policies).

e. Within ten (10) days following issuance of the Notice of Award of the Contract, the following documentation of insurance shall be submitted to District for approval prior to issuance of the Notice to Proceed: Certificates of insurance showing the limits of insurance provided, certified copies of all policies, and signed copies of the specified endorsements for each policy. At the time of making application for an extension of time, the Contractor shall submit evidence that the insurance policies will be in effect during the requested additional period of time.

f. If the Contractor fails to maintain such insurance, the District may take out such insurance to cover any damages of the above mentioned classes for which the District might be held liable on account of the Contractor's failure to pay such damages, and deduct and retain the amount of the premiums from any sums due the Contractor under the Contract.

g. Workers' Compensation Insurance:

1) Within ten (10) calendar days following issuance of the Notice of Award of the Contract, the Contractor shall furnish to the District satisfactory proof that the Contractor and all Subcontractors it intends to employ have procured, for the period covered by the Contract, full Workers' Compensation insurance and employer's liability with limits of at least \$1,000,000 with an insurance carrier satisfactory to the District for all persons whom the Contractor may employ in carrying out the work contemplated under this Contract in accordance with the Workers' Compensation Insurance and Safety Act, approved May 26, 1913, and all acts amendatory or supplemental thereto (the "Act"). Such insurance shall be maintained in full force and effect during the period covered by the Contract. In the event the Contractor is self-insured, Contractor shall furnish a Certificate of Permission to Self-Insure, signed by the Department of Industrial Relations Administration of Self-Insurance, Sacramento, California.

2) If the Contractor fails to maintain such insurance, the District may take out worker's compensation insurance to cover any compensation which the District might be liable to pay under the

provisions of the Act, by reason of any employee of the Contractor being injured or killed, and deduct and retain the amount of the premiums for such insurance from any sums due the Contractor under the Contract, or otherwise recover that amount from the Contractor or the Surety.

3) If an injury occurs to any employee of the Contractor for which the employee, or the employee's dependents in the event of the employee's death, is entitled to compensation under the provisions of the Act, or for which compensation is claimed from the District, the District may retain from the sums due the Contractor under this Contract an amount sufficient to cover such compensation, as fixed by the Act, until such compensation is paid, or until it is determined that no compensation is due, and if the District is compelled to pay such compensation, it will deduct and retain from such sums the amount so paid, or otherwise recover this sum from the Contractor or its Surety.

4) The policies represented by the certificates shall be endorsed with a Waiver of Subrogation and must contain the provision (and the certificates must so state) that the insurance cannot be canceled until thirty (30) days after written notice of intended cancellation has been given to the District by certified mail.

12. CODES AND REGULATIONS

a. The Contractor shall be knowledgeable regarding and shall comply with applicable portions of California Code of Regulations Title 24, the applicable Building Code, and all other codes, ordinances, regulations or orders of properly constituted authority having jurisdiction over the work of this Project. The Contractor shall examine the Contract Documents for compliance with these codes and regulations and shall promptly notify the Project Manager of any discrepancies.

b. All work and materials shall be in full accordance with the latest rules and regulations of the Safety Orders of the Division of Industrial Safety and the applicable State laws and/or regulations. Nothing in the Project plans or Specifications is to be construed to permit work not conforming to the applicable Codes. Buildings and/or all other construction covered by this Contract shall meet all the regulations for access by the physically handicapped as administered by the Division of the State Architect and as may be required by federal or state law.

c. If the work under this Contract is for the construction of a school building as defined by the Education Code, then the following provisions shall apply to the Contract:

1) All work shall be executed in accordance with the current requirements of the Education Code and California Code of Regulations: Title 24 and Title 19. No deviations from the DSA approved plans and Specifications will be permitted except upon a Change Order or Addenda, signed by the District and Architect and approved by the Division of the State Architect and the State Fire Marshal, if applicable.

13. PERMITS AND TAXES

a. The Contractor shall obtain and pay for all permits, fees and licenses that are required in order to perform the work under this Contract. The District shall pay connection charges and meter costs for new permanent utilities required by these Contract Documents. The Contractor shall notify the District sufficiently in advance to submit requests for service to the appropriate utility companies so as to insure connections or installation of utility services in accordance with the Project schedule.

b. The Contractor shall pay for all taxes on materials and equipment. The District is exempt from Federal Excise Tax. Contractor shall not pay Federal Excise Tax on any item in this Contract.

14. PATENTS AND ROYALTIES

All fees or claims for patents, royalties or licenses on materials, equipment or processes used in the performance of work on this Project shall be included in the amount of the Bid. The Contractor shall indemnify, defend, and hold harmless the District, its Governing Board, the Project Manager, and their officers and employees, from all claims or liability, including costs and expenses, which may arise from the use on this Project of any patented or copyrighted materials, equipment, or processes.

15. SAFETY AND FIRE PREVENTION

a. The Contractor, Subcontractors and all of their agents and employees shall fully comply with all of the provisions and requirements of CAL/OSHA, Title 8, California Code of Regulations and all other safety codes applicable to the Project. The Contractor shall take thorough precautions at all times for the protection of persons and property, and shall be liable for all damages to persons or property, either on or off the site, which occur as a result of Contractor's prosecution of the work. The Contractor shall obtain permits for, install and maintain in safe condition barricades, walkways, fences, railings, and whatever other safeguards that may be necessary to protect persons and property from damage as a result of the construction under this Contract.

b. Contractor is required to ensure Material Safety Data Sheets ("MSDS") are available in a readily accessible place at the work site for any material requiring a MSDS pursuant to the federal "Hazard Communication" standard or employee "right to know" laws. Contractor is also required to ensure proper labeling on materials brought on the job site such that any person working with the material or within the general area of the material is informed of the hazards of the material and follows proper handling and protection procedures. A copy of the MSDS shall also be promptly submitted directly to the District.

c. Contractor shall not endanger any work by cutting, excavating, or otherwise altering the work and shall not cut or alter the work of any other contractor except with the written consent of the Architect, nor overload any new or existing structures by the placing or storage of materials, equipment, or other items thereon, and, if necessary, shall provide calculations proving the safety in so doing.

d. If it is necessary to work at night, or where daylight is obscured, the Contractor shall provide and maintain lighting of an adequate level to properly prosecute the work, to permit the thorough inspection of same, and to ensure the safety to workers and others.

e. Contractor shall take extraordinary care to prevent fires and keep all flammable materials and oily rags in tightly closed metal containers. Contractor shall exercise particular care when welding or cutting, and with regard to the disposition of waste materials, the nature and quantity of which might create or increase a fire hazard.

16. HAZARDOUS MATERIALS

Unless otherwise specified, this Contract does not include the removal, handling, or disturbance of any hazardous substances or materials encountered in the new construction or on the Project grounds. If such substances or materials are encountered, work shall cease in that area and the District shall be promptly notified to take appropriate action for removal or otherwise abating the condition in accordance with current regulations applicable to the District.

a. General

1) No asbestos, asbestos-containing products or other hazardous materials shall be used in this construction or in any tools, devices, clothing or equipment used to further this construction.

2) Asbestos and/or asbestos containing products shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremo-lite or actinolite.

3) Any or all material containing greater than one tenth of one percent (>.1%) asbestos shall be defined as asbestos-containing material.

4) Any disputes involving the question of whether or not material contains asbestos shall be settled by electron microscopy; the cost of any such tests shall be paid by the Contractor.

5) All work or materials found to contain asbestos or work or material installed with asbestos containing equipment will be immediately rejected and this work shall be removed by the Contractor at no additional cost to the District.

b. Decontamination and Removal of hazardous material from prior work

1) Decontamination and removal of work found to contain asbestos or work installed with asbestos containing equipment shall be done only under the supervision of a qualified consultant, knowledgeable in the field of asbestos abatement and accredited by the Environmental Protection Agency ("EPA").

2) The asbestos removal contractor shall be an EPA-accredited contractor qualified in the removal of asbestos subject to the approval of the District.

3) The asbestos consultant shall be chosen and approved by the District which shall have sole discretion and final determination in this matter.

4) The work will not be accepted until asbestos contamination is reduced to levels deemed acceptable by the asbestos consultant.

c. Hold Harmless

1) Interface of work under this Contract with work containing asbestos shall be executed by the Contractor at Contractor's risk and at Contractor's discretion with full knowledge of the currently accepted standards, hazards, risks and liabilities associated with asbestos work and asbestos containing products. By execution of this Contract the Contractor acknowledges the above and agrees to hold harmless, as set forth in the indemnity provisions of this Contract, the Owner, its employees, agents and assigns for all asbestos liability which may be associated with this work and agrees to instruct Contractor's employees and agents with respect to the above-mentioned standards, hazards, risks and liabilities.

2) The Contractor shall, prior to commencement of this work, provide a duly signed and notarized affidavit that Contractor has instructed Contractor's employees and agents with respect to the above mentioned standards, hazards, risks and liabilities and the contents and requirements of this portion of the Contract Documents.

d. Certification

The Contractor agrees that materials containing asbestos or other hazardous materials as defined in Federal and State law shall not be used in construction.

17. TEMPORARY FACILITIES

a. The Contractor shall obtain permits for, install and maintain in safe condition all scaffolds, hoisting equipment, barricades, walkways, or other temporary structures that may be required to accomplish the work. Such structures shall be adequate for the intended use and capable of safely accepting all loads that may be imposed upon them. They shall be installed and maintained in accordance with all applicable codes and regulations.

b. The Contractor shall provide and maintain temporary heat from an approved source whenever in the course of the work it may become necessary for curing, drying or warming spaces as may be required for the proper installation of materials or finishes. The Contractor shall provide and maintain any and all facilities that may be required for dewatering in order that work may proceed on the Project. If it is necessary for dewatering to occur continually, the Contractor shall have on hand whatever spare parts or equipment that may be required to avoid interruption of service or work.

c. The Contractor shall promptly remove all such temporary facilities when they are no longer needed for the work or on completion of the Project. The Contractor shall repair any damage to premises or property which resulted from the construction, use, or removal of temporary facilities and shall restore the premises and property to their original condition.

d. See the Supplemental General Conditions and/or specifications for requirements concerning temporary sanitary facilities and utilities

18. SIGNS

No signs may be displayed on or about the District's property (except those which may be required by law) without the District's prior written approval of size, content and location. Any signs required by the District will be designated in the Supplemental General Conditions.

19. TIME

a. The Contractor shall commence the work on the date indicated in the Notice to Proceed. Time is of the essence regarding the Contract work, and the Contractor shall prosecute the work diligently and regularly at such a rate of progress as to ensure completion of this Project within, or sooner than, the time specified.

b. The Contractors and Subcontractors shall investigate and become aware of the amount of time required for the delivery of all equipment and materials required to perform the work under this Contract, and no extension of time shall be granted due to failure to order the equipment and materials sufficiently before their incorporation into the work so as to avoid delay to the Project.

c. The Contractor and Subcontractors shall provide and maintain enough manpower, materials and equipment to ensure a rate of construction progress that will complete the Project within or sooner than the time specified and according to the schedule of work. If, in the District's opinion, the Contractor and/or Subcontractors are not prosecuting the work at a sufficient rate of progress to meet the Project schedule, the District may direct the Contractor to provide additional manpower, materials or equipment, or to work additional hours, holidays or weekends without additional cost to the District until the work is progressing in a manner satisfactory to the District. Failure to prosecute the work in a timely manner according to the Project schedule is considered a breach of Contract and shall be cause for termination of the Contract.

20. CONSTRUCTION SCHEDULE

a. Within fifteen (15) calendar days after the award of the Contract, the Contractor shall prepare and submit to the Project Manager and District an as-planned construction schedule showing in detail how the Contractor plans to prosecute the work within the time set for Final Completion. The schedule shall include the work of all trades necessary for construction of the Project, and shall be sufficiently complete and comprehensive to enable progress to be monitored on a day-by-day basis. The information for each activity shall include at a minimum the activity description, duration, start date and completion date.

b. The Contractor shall take care in the preparation of the schedule to ensure that it represents an accurate and efficient plan for accomplishing the work. If the Project is more than one week behind schedule, it must be promptly revised showing how the Contractor plans to complete the work, but in no case shall it show a completion date later than that required by the Contract, unless a time extension has been granted. The current schedule shall be kept posted in the Contractor's project office on site.

c. The Contractor shall be responsible for the coordination of all work necessary and pertaining to the construction whether actually a part of this Contract or attendant thereto. The Contractor shall notify the District and various utility companies, as far as possible in advance of their required work, in order that work schedules may be developed for all concerned, which will permit the most effective and timely accomplishment of the entire Project.

21. DELAYS AND TIME EXTENSIONS

a. The Contractor may be granted a time extension if the Contractor encounters an unavoidable delay of the work due to causes completely beyond the Contractor's control and which the Contractor could not have avoided by the exercise of reasonable care, prudence, foresight and diligence. Causes for which a claim for extension of time may be made include: acts of the public enemy, acts of another contractor in the performance of another contract with the District, priority of a governmental agency for materials or equipment, fire, flood, violent wind storm, epidemic, quarantine restriction, strike, freight embargo, or weather of an unusually severe nature. The Contractor will not be granted time extensions for weather conditions which are normal for the location of the Project, according to the National Weather Service Records.

b. A request for extension of time and compensation related thereto shall be made in writing to the Project Manager and District within ten (10) calendar days of the date the delay is encountered, or shall be deemed waived. The request shall include a detailed description of the reasons for the delay and corrective measures by the Contractor. The request shall be accompanied by evidence that the insurance policies required by the Contract shall be in effect during the requested additional period of time. In order for the Project Manager to consider a request for time extension, the Contractor must prove that the reasons stated for the delay actually caused a delay in portions of the work which will result in completion beyond the date specified in the Contract. The Contractor may also be granted a time extension for a significant change in the scope of work which request for extension of time shall be included in a Contract modification proposal.

c. No damages or compensation or any kind shall be paid to a Contractor because of delays in the progress of work, whether such delays be avoidable or unavoidable, that are not the responsibility of District. District's liability to Contractor for delays for which District is responsible shall be limited to an extension of time unless such delays were unreasonable under the circumstances involved and were not within the contemplation of the parties when the Contract was awarded. The Contractor shall provide to the District the actual, substantiated costs to Contractor for which the Contractor may claim damages from District. Such costs, if any, shall be directly related to the Project, and shall not include costs that would be borne by the Contractor in the regular course of business, including, but not limited to, office overhead and ongoing insurance costs. Delay damages shall not include Contractor or Subcontractor markup for overhead and profit, but only actual, documented, and direct actual costs. The District shall not be liable for any damages which the Contractor could have avoided by any reasonable means including, but not limited to, the more judicious handling of forces or equipment.

d. The granting of an extension of time because of unavoidable delays shall in no way operate as a waiver on the part of the District of the right to collect liquidated damages for other delays or of any other rights to which the District is entitled.

22. LIQUIDATED DAMAGES

a. The parties understand and agree that the goodwill, educational process, and other business of District will be damaged if the Project is not completed within the time limits required. The parties have further agreed that the exact amount of damages for failure to complete the Work within the time specified is, in some cases, extremely difficult, impractical, or impossible to determine. As to those damages that are difficult, impractical, or impossible to determine, should the Contractor fail to achieve Final Completion of this Contract within the time fixed for Final Completion, together with extensions granted by the District for unavoidable delays, Contractor shall become liable to the District in the amount specified in the Contract per calendar day for each day the Contract remains incomplete beyond the time for Final Completion, as liquidated damages and not as a penalty. Contractor shall not be charged with liquidated damages when the delay in completion of the work beyond the time for Final Completion is due to acts of the District.

b. In addition to any liquidated damages which may be assessed, if Contractor fails to achieve Final Completion of this Contract within the time fixed for Final Completion, together with extensions granted by the District for unavoidable delays, and if as a result District finds it necessary to incur any costs and/or expenses, or if District receives any claims by other contractors, subcontractors, or third parties claiming time or other compensation by reason of Contractor's failure to complete work on time, Contractor shall pay all those costs and expenses incurred by District. These costs and expenses may include but are not limited to such items as rental payments, inspection fees, and additional architectural fees, whether related to the acquisition of facilities or caused by the delay in completion.

c. Any money due or to become due the Contractor may be retained to cover liquidated and other delay damages. Should such money not be sufficient to cover those damages, the District shall have the right to recover the balance from the Contractor or Contractor's sureties.

d. Should the District authorize suspension of the work for any cause, the time work is suspended will be added to the time for completion. Suspension of the work by the District shall not be a waiver of the right to claim liquidated or other delay damages as set forth in this section.

23. DISTRICT'S RIGHT TO STOP WORK; TERMINATION OR SUSPENSION OF THE CONTRACT

a. District's Right to Stop Work:

In addition to or as an alternative to any and all other remedies available to the District, if the Contractor fails to correct work which is not performed in accordance with the Contract Documents, or if the Contractor persistently fails to perform the work in accordance with the Contract Documents, the District may by written order direct the Contractor to stop the work, or any portion thereof, until the cause for such order has been eliminated to the satisfaction of the District. However, the right of the District to stop the work shall not give rise to a duty on the part of the District to exercise this right for the benefit of the Contractor or any other person or entity, and the failure of the District to do so shall

not be raised as a defense to the Contractor's failure to perform the work in accordance with the Contract Documents.

b. Termination for Cause:

1) If the Contractor refuses or fails to furnish sufficient materials, work force, equipment, and appurtenances to properly prosecute the work in a timely manner, or if Contractor refuses or fails to comply with any provisions of the Contract Documents, or if Contractor should file a bankruptcy petition or make a general assignment for the benefit of Contractor's creditors or if a receiver should be appointed on account of Contractor's insolvency, then the District may give the Contractor and Contractor's Surety written notice of intention to terminate the Contract. Unless within seven (7) calendar days after the serving of such notice upon the Contractor and Contractor's Surety such violation shall cease and arrangements for correction of such conditions shall be made satisfactory to the District, the Contract shall cease and terminate. In the event of such termination, the District shall immediately serve written notice thereof upon the Contractor and Contractor's Surety.

2) In the event of termination for cause, in addition to all remedies available to the District, the Contractor's Surety shall have the right to take over and perform the Contract; provided, however, that if the Surety does not commence performance within five (5) calendar days from the date of the issuance of such notice of termination, the District may take over the work and prosecute the same to completion by letting another Contract, or by any other method that the District deems advisable. The Contractor and Contractor's Surety shall be liable for any excess cost incurred by the District thereby, and in any such event the District may take possession of such materials, equipment, and other property belonging to the Contractor as may be on the site and use same in completing the work.

c. Termination or Suspension for Convenience:

The District reserves the right, in its sole discretion, to terminate or suspend all or part of the Contract for convenience following three (3) days written notice to the Contractor. In the event of termination or suspension for convenience, Contractor shall have no claims against the District, except:

1) The actual cost of labor, materials and services provided pursuant to the Contract, and which have not yet been paid for, as documented by timesheets, invoices, receipts and the like; and

2) Five percent (5%) of the total cost of the work performed as of the date of notice of termination or suspension or five percent (5%) of the value of the work yet to be completed, whichever is less. The parties agree that this amount shall constitute full and fair compensation for all Contractor's lost profits and other damages resulting from the termination or suspension for convenience.

24. ASSIGNMENT OF CONTRACT

The Contractor may not assign or delegate all or any portion of this Contract without the written consent of the District and no such consent shall be given which would relieve the Contractor or its Surety of their responsibilities under the Contract. The Contractor may assign, without liability to the

District, monies due the Contractor under the Contract to banks, trust companies or other financial institutions provided written notice thereof is promptly delivered to the District. Assignment of monies earned by the Contractor shall be subject to the same retention as other payments made to Contractor, and shall also be subject to setoffs and back charges as provided by this Contract.

25. COORDINATION WITH OTHER CONTRACTS

a. The District reserves the right to do other work or award other contracts in connection with this Project. By entering into this Contract, Contractor acknowledges that there may be other contractors on or adjacent to the Project site whose work must be coordinated with that of its own. Contractor expressly warrants and agrees that it will cooperate with other contractors and will do nothing to delay, hinder, or interfere with the work of other contractors, or that of the District, its Project Manager and Construction Manager. Contractor also expressly agrees that in the event its work is hindered, delayed, interfered with, or otherwise affected by a separate contractor, its sole remedy will be a direct action against the separate contractor. To the extent allowed by law, the Contractor expressly waives any remedy against the District, its Project Manager and Construction Manager on account of delay, hindrance, interference or other such events caused by a separate contractor.

b. If any part of Contractor's work depends upon the work of a separate contractor, Contractor shall inspect such other work and promptly report in writing to the District and Project Manager any defects in such other work that render it unsuitable to receive the work of Contractor. Failure of the Contractor to so inspect and report shall constitute an acceptance of the other contractor's work, except as to defects which the Contractor could not have detected through the reasonable inspection of the other contractor's work prior to the execution of Contractor's work.

c. If Contractor is aware of a current or potential conflict between Contractor's work and the work of another contractor on the site, and is unable to informally resolve the conflict directly with the other contractor, Contractor shall promptly provide written notice to the District, with a copy to the Project Manager and the other contractor, specifying the nature of the conflict, the date upon which the conflict arose, and the steps taken to attempt to resolve the conflict. The District may issue written instructions to address the conflict.

d. If, through Contractor's negligence, any other contractor or subcontractor shall suffer loss or damage to the work, Contractor shall make a reasonable effort to settle with such other contractor and subcontractor by agreement or arbitration. If such other contractor or subcontractor shall assert any claim against the District or Project Manager, on account of any damage alleged to have been so sustained, the District or Architect shall notify the Contractor, who shall defend such proceedings at Contractor's own expense and save harmless and indemnify the District and the Project Manager from any such claim.

26. SUBMITTALS: SHOP DRAWINGS, CUTS AND SAMPLES

a. Five (5) copies of shop drawings, brochures and cuts and samples in quantities specified by the Project Manager shall be submitted to the Project Manager for all items for which they are required by

the plans and Specifications. Prior to transmittal, the Contractor shall examine all submittals for accuracy and completeness in order to verify their suitability for the work and compliance with the Contract Documents and shall sign and date each submittal. Submittals shall be made sufficiently before the items are required for the work so as to cause no delay and shall be in accordance with the Project construction schedule.

b. In addition to information furnished as common practice, submittals shall contain the Project name and location, Contractor's name and address, Subcontractor's or supplier's name and address, date of submittal and any revisions, and reference to appropriate specification section, and/or drawing and detail numbers. The Contractor and/or the Subcontractors shall verify in the field all dimensions and relationships to adjacent work necessary to ensure the proper fit of the items submitted. If necessary, the Contractor shall make any corrections required and resubmit with all due haste in the same number as initially required.

c. Review of submittals, shop drawings, cuts or samples by the District or Project Manager shall not relieve the Contractor from complying with the requirements of the Contract Documents.

d. Any materials or equipment installed without approval shall be at the Contractor's own risk, and Contractor may be required to remove any such materials or equipment and install the specified items at Contractor's own cost, including repairs to adjacent work.

27. PAYMENTS

a. Cost Breakdown:

Prior to submitting Contractor's first request for payment, the Contractor shall prepare and submit to the Project Manager and District a cost breakdown (schedule of values) showing the major work items for each trade or operation required in construction of the Project. The work items shall be sufficiently detailed to enable the Project Manager to accurately evaluate the completion percentages requested by the Contractor. The cost for each work item shall include overhead and profit. The total of all work item costs shall equal the amount of the Contract.

b. Scope of Payment:

Payment to the Contractor at the unit price or other price fixed in the Contract for performing the work required under any item or at the lump sum price fixed in the Contract for performing all the work required under the Contract shall be full compensation for furnishing all labor, materials, equipment and tools necessary to the work, and for performing and completing, in accordance with the Specifications, all work required under the item or under the Contract, and for all expense incurred by the Contractor for any purpose in connection with the performance and completion of the work.

c. Progress Payments:

The Contractor will, on or about the last day of each month, make an estimate of the value of the work completed by Contractor in the performance of the Contract. These estimates shall be subject to the review and approval of the Project Manager. The first such estimate will be of the value of the

work completed after the Contractor commenced the performance of the Contract, and every subsequent estimate, except the final estimate, will be of the value of the work completed since the immediately preceding estimate. Such estimates will be based on labor, materials and equipment incorporated into the work, and items of materials and equipment delivered to the Project. The Contractor shall be responsible for the security and protection of such materials and equipment delivered to the Project and not incorporated in the work. Within thirty (30) calendar days after the approval of each estimate for progress payment, the District will pay to the Contractor an amount equal to ninety (90) percent of the approved estimate, unless a different retention percentage is stated in the Notice Inviting Bids, in which case that percentage applies. Payments may at any time be withheld if in the judgment of the District the work is not proceeding in accordance with the Contract Documents, the Contractor is not complying with the requirements of the Contract, stop notices have been timely filed, the estimate contains an error, or the District has incurred costs or requests reasonable financial assurances regarding defective work by the Contractor.

d. Final Payment:

Within thirty (30) days after all required work is fully completed in accordance with the Contract Documents, the Contractor shall submit a final invoice for the total value of the work completed in accordance with the Contract, which shall be subject to review and approval by the District. As required by law, District shall pay Contractor the unpaid balance of the Contract price of the work, or the whole Contract price of the work if no progress payment has been made, determined in accordance with the terms of the Contract, less such sums as may be lawfully retained under any provision of the Contract, including, but not limited to, amounts retained as liquidated damages, for stop notices, for third-party claims for which the Contractor is required to indemnify the District, for defective work and costs incurred by the District in connection therewith, or for other such claims and damages attributable to the Contractor ("Final Payment"). Prior progress estimates and payments are subject to correction in the Final Payment. Tender of the Final Payment shall constitute denial by the District of any unresolved claim. Contractor's acceptance of the Final Payment shall operate as a full and final release to the District and its agents from any and all unasserted claims Contractor has, or may have, related to this Contract.

e. Payments Do Not Imply Acceptance of Work:

The granting of any progress payment or payments by the District or the receipt thereof by the Contractor shall not constitute acceptance of the work or of any portion thereof, and shall in no way lessen the liability of the Contractor to replace unsatisfactory work or material, whether or not the unsatisfactory character of such work or material was apparent or detected at the time such payment was made.

f. Retention of Sums Charged Against Contractor:

It is mutually understood and agreed that when under any provision of this Contract the District shall charge any sums of money against the Contractor, the amount of such charge shall be deducted and retained by the District from the amount of the next succeeding progress estimate, or from any other monies due or that may become due the Contractor on account of the Contract. If on completion or termination of the Contract such monies due the Contractor are found insufficient to cover the

District's charges against the Contractor, the District shall have the right to recover the balance from the Contractor or the Contractor's Sureties.

g. Release:

The Contractor and each assignee under an assignment in effect at the time of Final Payment shall, if required by the District, execute and deliver at the time of Final Payment and as a condition precedent to Final Payment, a release in form and substance satisfactory to and containing such exemptions as may be found appropriate by the District, discharging the District, its officers, agents and employees of and from liabilities, obligations and claims arising under this Contract.

h. Payment to Subcontractors and Suppliers:

The Contractor shall pay each Subcontractor and supplier promptly on receipt of each progress payment from the District for the materials, labor and equipment delivered to the site or incorporated in the work by each Subcontractor during the period for which the progress payment is made, less any retention as provided above.

i. Stop Notice Costs:

The District reserves the right to charge the Contractor or Surety, or to withhold from release of retention, all costs incurred by the District, including attorney's fees, for processing and defending stop notice claims.

28. MODIFICATIONS OF CONTRACT

a. Changes In The Work:

1) The District, before the date of acceptance of the work, may, without notice to the Sureties, order changes in the work ("Modifications"), may order extra materials and extra work in connection with the performance of the Contract, and the Contractor shall promptly comply with such orders. All Modifications must be approved by DSA and the State Fire Marshall, if applicable, as required by law.

2) If changes ordered in design, workmanship or materials are of such a nature as to increase or decrease the cost of any part of the work, the price fixed in the Contract shall be increased or decreased by such amount as represents the reasonable and proper allowance for the increase or decrease in the cost of the work in accordance with the provisions of this Article, and any other applicable terms of the Contract, including, but not limited to, the Contractor's schedule of values and the price for allowances, if any. Except as provided by law, the total cost of all Modifications shall not exceed ten (10) percent of the original Contract price.

3) In the case of a disputed work item, the District may direct the Contractor to perform the disputed work at no additional cost to the District on the grounds that the work is adequately indicated in the Contract Documents, and therefore already included in the Contract price. If the Contractor maintains that the disputed work represents a modification to the Contract, Contractor may submit a claim in accordance with Article 50, Resolution of Construction Claims. Notwithstanding any dispute

regarding the requirements of the Contract Documents, Contractor shall promptly and fully comply with the District's directive. Contractor's failure to do so shall be deemed a material breach of this Contract, and in addition to all other remedies, District may, at its sole discretion, hire another contractor and/or use its own forces to complete the disputed work at Contractor's sole expense, and may deduct the cost of such work from the Contract price.

b. Cost Breakdown:

When the Modification is proposed, the Contractor shall furnish a complete breakdown of actual costs of both credits and extras, itemizing materials, labor, taxes, overhead and profit. Subcontract work shall be so indicated. All costs must be fully documented. The following limitations shall apply:

1) Limitations Where Contract Price Changes are Involved:

(a) Overhead and Profit for the Contractor. The Contractor's overhead and profit on the cost of subcontracts shall be a sum not exceeding ten percent (10%) of such costs. The Contractor's overhead and profit on the costs of work performed by the Contractor shall be a sum not exceeding fifteen percent (15%) of such costs. Overhead and profit shall not be applied to the cost of taxes and insurance by Contractor or Subcontractors or to credits. No processing or similar fees may be charged by the Contractor in connection with the Modification. "Overhead and profit" shall include all plant, equipment rental and repair, project management, field coordination, job site project supervision and indirect labor and materials.

(b) Bond Premiums. The actual rate of bond premiums as paid on the total cost (including taxes) will be allowed, but with no markup for profit and overhead.

(c) Taxes. State and city sales taxes should be indicated. Federal excise tax shall not be included. (District will issue an exemption on request.)

2) Change Order Certification:

All change orders and requests for proposed change orders shall be deemed to include the following certification by the Contractor:

"The undersigned Contractor approves the foregoing as to the changes in work, if any, and as to the Contract price specified for each item and as to the extension of time allowed, if any, for completion of the Project as stated herein, and agrees to furnish all labor, materials, and service and to perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of claims which have no basis in fact or which Contractor knows are false are made at the sole risk of the Contractor and may be a violation of the False Claims Act, as set forth in Government Code §§12650 *et seq.* It is understood that the changes to the Contract Documents set forth herein shall only be effective upon approval by the Governing Board of the District.

"It is expressly understood that the value of the extra work or changes expressly includes any and all of the Contractor's costs and expenses, both direct and indirect, resulting from additional time required

on the Project or resulting from delay to the Project. Any costs, expenses, damages, or time extensions not included herein are deemed waived."

c. Unit Prices, Schedule of Values, or Allowances:

Where Unit Prices, a Schedule of Values, and/or Allowances are required by the Contract Documents, that pricing shall govern in computing any additions to or deductions from the Contract price on account of any added or omitted work. Unit Prices listed in the original bid include all costs and no addition of any description will be allowed.

d. Time and Materials:

If it is impractical, because of the nature of the work, or for any other reason, to fix an increase in price in advance, the Change Order may fix a maximum price which shall not under any circumstances be exceeded, and subject to such limitation, such alteration, modification or extra shall be paid for at the actual necessary cost as determined by the sum of the following items (1) to (5) inclusive:

1) Labor, including premium on compensation insurance and charge for Social Security taxes, and other taxes pertaining to labor.

2) Material, including sales taxes and other taxes pertaining to materials.

3) Plant and equipment rental, to be agreed upon in writing before the work is begun. No charge for the cost of repairs to plant or equipment will be allowed.

4) Overhead and profit computed at fifteen percent (15%) of the total of Items (1) to (3) inclusive.

5) The proportionate cost of premiums on bonds computed at one and one-half percent (1-1/2%) of the total of items (1) to (4) inclusive.

If the Time and Materials work is done by a Subcontractor, the amount shall be determined as set forth above under items (1) to (5) inclusive. The Contractor's overhead and profit on the costs of subcontracts (exclusive of taxes and insurance) shall not exceed ten percent (10%) of such costs.

The District reserves the right to furnish such materials as it may deem expedient, and no allowance will be made for profit thereon. The above-described methods of determining the payment for work and materials shall not apply to the performance of any work or the furnishing of any material which, in the judgment of the District, may properly be classified under items for which prices are established in the Contract.

e. Oral Modifications:

No oral statements of any person shall in any manner or degree modify or otherwise affect the terms of the Contract.

29. INDEMNITY

Contractor shall defend with counsel acceptable to the District, indemnify and hold harmless to the full extent permitted by law, the District and its Board of Trustees, officers, agents, Project Manager, construction manager, employees and volunteers from and against any and all liability, loss, damage, claims, expenses, fines, judgments and costs (including, without limitation, attorney's fees and costs and fees of litigation) (collectively, "Liability") of every nature arising out of or in connection with Contractor's performance of the Project or its failure to comply with any of its obligations contained in these Contract Documents, except such Liability caused by the active negligence, sole negligence or willful misconduct of the District. Such indemnification shall extend to all claims, demands, or liabilities occurring after completion of the project as well as during the progress of the work. Pursuant to Public Contract Code §9201, District shall timely notify Contractor of receipt of any third-party claim relating to this Project.

30. WARRANTY OF TITLE

Contractor warrants that title to all work, materials or equipment included in a request for payment shall pass and transfer to the District whether or not they are installed or incorporated in the Project, free from any claims, liens or encumbrances, when such payment is made to the Contractor. Contractor further warrants that no such work, materials or equipment have been purchased for work under the Contract subject to an agreement by which an interest therein or an encumbrance thereon is retained by the seller or supplier.

31. USE OF COMPLETED PARTS OF THE WORK BEFORE ACCEPTANCE

Whenever the work or any part thereof is in a condition suitable for use, and the best interest of the District requires such use, as determined by the District, the District may take possession of, connect to, open for public use, or use the work or a part thereof. When so used, maintenance and repairs due to ordinary wear and tear or vandalism will be made at District's expense. The use by the District of the work or part thereof as contemplated in this section shall in no case be construed as constituting acceptance of the work or any part thereof, including, but not limited to, the right to assess liquidated damages. Such use shall neither relieve the Contractor of any of Contractor's responsibilities under the Contract nor act as a waiver by the District of any of the conditions thereof. Contractor shall continue to maintain all insurance, including Builder's Risk insurance, on the entire Project, and diligently pursue full completion of the work.

32. GUARANTEE AND WARRANTY

- a. By signing this Contract, Contractor agrees to the following guarantee and warranty:

Guarantee & Warranty

Contractor hereby guarantees and warrants its work on the Project for a period of two (2) years from the date of the filing of the Notice of Completion as follows.

Contractor shall promptly repair or replace to the satisfaction of the District any or all work that appears defective in workmanship, equipment and/or materials for whatever reason, ordinary wear and tear and unusual abuse or neglect excepted, together with any other work which may be damaged or displaced in so doing.

Contractor agrees to promptly correct and remedy any failure by the Contractor to conform its work, activities and services to the requirements of the Contract Documents.

In the event of the Contractor's failure to comply with the above-mentioned obligations within the ten (10) calendar days of notice, or sooner if required by an emergency, Contractor hereby authorizes the District to have the defects or deficiencies repaired, remedied, corrected and made good at Contractor's expense, and Contractor shall pay the costs and charges therefore upon demand. The Surety agrees to be responsible for these costs and charges as well.

33. PROTECTION OF WORK AND PROPERTY

a. The Contractor shall be responsible for each operation and all work on the Project, both permanent and temporary. The Contractor shall protect the work and materials from damage due to negligence, the action of the elements, the carelessness of third parties, vandalism, or any other cause whatsoever, until the final completion and acceptance of the Project. Should improper work by the Contractor be covered by another contractor and damage or defects result, the whole work affected shall be made good by the Contractor to the satisfaction of the Project Manager and District without expense to the District. The Contractor shall take reasonable care to avoid damage to existing facilities or utilities, whether on the Project or adjacent to it, and Contractor shall be liable for any damage thereto or interruption of service due to Contractor's operations. If the Contractor encounters any facilities or utilities not shown on the drawings or not reasonably inferable therefrom, Contractor shall promptly notify the Project Manager about them, and shall do no further work which may cause damage to same. If it is determined that some action needs to be taken regarding facilities not shown, the Contractor will be given directives on what action to take, and any additional cost to the Contractor incurred thereby will be handled by Change Order.

b. The property limits of the area of the Project are indicated on the drawings. Except for work specifically shown or noted, Contractor shall confine Contractor's operations within the indicated property limits. The Contractor shall provide, install, and maintain all shoring, bracing and underpinning necessary to support adjacent property, streets, buildings and structures, that may be affected by building operations for this work; shall serve or cause to be served all legal notices to adjoining property owners that may be necessary for their protection; and shall protect from damage all adjacent buildings, fences, landscaping, and repair or replace any such property damaged in the course of work under the Contract.

34. USE OF ROADWAYS AND WALKWAYS

The Contractor shall not unnecessarily interfere with use of any roadway, walkway or other facility for vehicular or pedestrian traffic by any party entitled to use it. Wherever such interference becomes necessary for the proper and convenient performance of the work and no satisfactory detour route exists, the Contractor shall, before beginning the interference, provide a satisfactory detour, temporary bridge, or other proper facility for traffic to pass around or over the interference and shall maintain it in satisfactory condition as long as the interference continues, all without extra payment unless otherwise expressly stipulated in the Contract Documents.

35. MATERIALS

a. Unless explicitly stated otherwise, all specified equipment and material comprising the work of this Contract, as being provided or furnished or installed, shall imply the inclusion of all components, hardware and accessories, required for complete installation and satisfactory operation as intended by the manufacturer. Wherever the method of installation of any material is not explicitly specified, the installation shall be as recommended by manufacturer.

b. Wherever in the Contract Documents it is provided that the Contractor shall furnish materials or equipment for which no detailed specifications are set forth, such materials or equipment shall be new and of the best grade for the purpose for which they will be used when incorporated in the work. Materials specified by reference to a number or symbol of a specific standard, such as A.S.T.M., Federal Specification, State Standard, Trade Association, or similar standards, shall comply with requirements in the latest revision thereof and any amendment or supplement in effect on the date of the notice inviting bids.

c. None of the materials to be provided furnished or installed on this project shall contain asbestos or any other "hazardous substance" as that term is defined by federal or state law.

36. SUBSTITUTIONS

a. Wherever in the drawings or Specifications a material or product is called for by trade or brand names or manufacturer and model number, alternative items of equal quality and purpose may be proposed for use by the Contractor. The burden of proof of equality is on the Contractor, and Contractor shall furnish all information and supplies necessary for the Project Manager to make a thorough evaluation of the proposed substitution. The Project Manager's decision about the equality of the proposed substitution is final, and if the proposed substitution is not approved, the Contractor shall install the item called for. Proposed substitutions and any changes in adjacent work caused by them shall be made by the Contractor at no additional cost to the District.

b. Proposed substitutions shall be submitted sufficiently before actual need to allow time for thorough evaluation. Substitutions shall not be proposed for the reason that submittals were not made early enough to avoid delay. Project Manager's review of substitutions shall not relieve the Contractor from complying with the requirements of the drawings and Specifications.

c. In the event Contractor makes substitutions in materials, equipment, or designs, with or without the District's approval, other than those authorized herein, the Contractor shall then assume full responsibility for the effects of such substitutions on the entire Project, including the design, and shall reimburse the District for any charges resulting from such substitutions, including any charges for modifications in the work of other trades, and including any charges for additional design and review, plus reasonable and customary mark-ups.

37. TESTING

a. Materials, equipment, or other work requiring tests may be specified in the Contract Documents, and they shall be adequately identified and delivered to the site in ample time before intended use to allow for testing. If such materials, equipment or other work should be covered without required testing and approval, they shall be uncovered at the Contractor's expense, including any repairs or replacement resulting therefrom. The Contractor shall notify the District and Project Manager when and where such materials, equipment or other work are ready for testing, and Contractor shall bear the cost of making them available for testing. The Contractor shall notify the District and Project Manager sufficiently before the need for testing so as to cause no delay in the work and, in any case, at least forty-eight (48) hours prior to the need for testing.

b. The cost of initial tests called for will be paid by the District and will be performed by independent testing consultants retained by the District. All other tests and inspections specified or otherwise required to substantiate compliance with specified requirements for quality of material or performance of operation shall be paid for by the Contractor. If retesting or additional testing is necessary because of substandard initial test results, the costs thereof shall be paid by the Contractor, including any repairs or replacement resulting therefrom.

38. INSPECTION

a. All materials, equipment and workmanship used in the work of the Project shall be subject to inspection or testing at all times and locations during construction and/or manufacture. The District's and Project Manager's authorized representatives and representatives of other agencies having authority over the work shall have access to the work for the above purposes at all reasonable times and locations. Any material or work found to be unsatisfactory or not according to the Contract Documents shall be replaced with the correct material or work and the defective items promptly removed, all at the Contractor's expense, when directed to do so by any of the above-named persons having authority over the work. The cost of review time and analysis by the Project Manager or other District consultants necessitated by incomplete or defective work by the Contractor shall be charged to the Contractor.

b. Inspection and testing by the District or its representatives shall not relieve the Contractor from complying with the requirements of the Contract Documents. The Contractor is responsible for its own quality control.

c. Whenever required by the District or Architect, the Contractor shall furnish all tools, labor and materials necessary to make an examination of work in place by uncovering the same. Should such work be found unsatisfactory, the cost of examination and reconstruction shall be paid by the

Contractor. Should such work be found satisfactory, the cost of examination and reconstruction of the work shall be paid by Change Order unless the Contractor improperly covered the work before it could be inspected or tested. If the Contractor considers it necessary or desirable to work on Saturday, Sunday or a holiday, Contractor shall seek written approval from the District at least forty-eight (48) hours before the commencement of such work.

39. CLEANUP

a. The Contractor shall maintain the premises and area of the work in a neat and clean condition. No burning of rubbish on site shall be allowed. The Contractor shall control dust on the site by sprinkling at whatever intervals are necessary to keep it laid down and shall take measures to prevent dust and debris from being accidentally transported outside the area of the work.

b. Final cleaning, such as sweeping, dusting, vacuuming, dry and wet mopping, polishing, sealing, waxing and other finish operations normally required on newly installed work shall be taken to indicate the finished conditions of the various new and existing surfaces at the time of acceptance. Prior to the time of acceptance, all marks, stains, fingerprints, dust, dirt, splattered paint and blemishes resulting from the various operations shall be removed throughout the Project. Stair treads and risers shall be wet-mopped. Glass shall be left clean and polished both inside and outside. Plumbing fixtures and light fixtures shall be washed clean. Hardware and other unpainted metals shall be cleaned and all building papers and other temporary protections shall be removed throughout the building, or portion of the building where Contractor was involved, all to the satisfaction of the Architect and District. The exterior of the buildings, playfields, exterior improvements, and planting spaces and other work areas shall be similarly clean and in good order.

40. CONSTRUCTION WASTE MANAGEMENT REQUIREMENTS

a. Scope

1) This Article includes requirements for the diversion by the Contractor of construction and demolition debris from landfills. The Contractor shall develop and implement a Waste Management Plan as specified herein. The Contractor shall take a pro-active, responsible role in the management of construction and demolition waste and require all subcontractors, vendors, and suppliers to participate in the effort.

2) The District has established that this Project shall generate the least amount of waste practicable and that processes shall be utilized that ensure the generation of as little waste as possible due to over-packaging, error, poor planning, breakage, mishandling, contamination or other factors.

3) As much of the waste materials as economically feasible shall be reused, salvaged or recycled. Waste disposal in landfills shall be minimized.

4) The Contractor is encouraged to use waste hauling companies that separate recyclable materials. The Contractor shall work with its waste haulers in providing other recycling methods as appropriate.

5) The Contractor is responsible for implementation of any special programs involving rebates or similar incentives related to the recycling of waste. Revenues or other savings obtained for salvage or recycling accrue to the Contractor.

b. References

1) "Builders' Guide to Reuse and Recycling, A Directory for Construction and Demolition Materials."

2) "Construction Site Recycling, a Guide for Building Contractors ". For a copy of the guide call 1-888-442-2666 or go to www.recycleworks.org.

3) "Where to Recycle Construction and Demolition Debris." For a copy of the guide call 1-888-442-2666 or go to www.recycleworks.org.

c. Definitions

1) General: Construction and demolition waste includes products of demolition or removal, excess or unusable construction materials, packaging materials for construction products, and other materials generated during the construction process but not incorporated into the work.

2) Divert" means to use material for any lawful purpose other than disposal in a landfill or transfer facility for disposal

3) "Recycling Service" means an off-site service that provides processing of material and diversion from a landfill.

4) "Hauler" means the entity that transports construction and demolition debris to either a landfill or a recycling service.

d. Compliance with regulatory requirements:

1) The Contractor shall perform all handling, storage, transportation and disposal of construction debris in compliance with all applicable Federal, State, regional, and local statutes, laws, regulations, rules, ordinance, codes and standards.

2) Nothing stated on the drawings, in this Article 40 or in any other provision of the Contract Documents shall be construed as allowing work that is not in strict compliance with all applicable Federal, State, regional, and local statutes, laws, regulations, rules, ordinances, codes and standards.

e. Performance Requirement

1) The Contractor shall divert a minimum of 50 percent (50%) of the total Project construction and demolition waste from landfills.

f. Quality Control

1) General:

i) The Contractor shall not permit materials designated for diversion to become contaminated or to contaminate the site or surrounding areas.

2) Training and Coordination:

i) The Contractor shall designate an on-site party [or parties] who will be responsible for instructing workers and subcontractors, and overseeing and documenting the results of the Waste Management Plan for the Project.

ii) The Contractor shall furnish copies of the Waste Management Plan to all on-site supervisors, each subcontractor, and the District's representative.

iii) The Contractor shall include construction waste management as an item on the agenda of all progress meetings.

3) The Waste Management Plan:

i) The Contractor shall prepare a Waste Management Plan for diverting the specified percentage of construction debris from landfills, including written and graphic information indicating how the waste will be diverted.

ii) Include in the plan both on-site recycling of construction debris and off-site diversion from landfills.

iii) Identify the means and methods for collecting and separating each type of debris deemed reusable or recyclable.

iv) List the off-site recycling service and hauler of each designated debris item who has agreed to accept and divert that item from the landfill in the proposed quantities anticipated. List the service and hauler company name, address, telephone number, and persons contacted.

v) List the name of individuals on the Contractor's staff responsible for waste prevention and management.

vi) List the actions that will be taken to reduce solid waste generation, including coordination with subcontractors to ensure awareness and participation.

vii) Describe the specific approaches to be used in recycling/reuse of the various materials generated, including the areas on site and equipment to be used for processing, sorting, and temporary storage of wastes.

viii) Characterize the waste to be generated, including estimated types and quantities. Name the landfills and/or incinerator to be used.

ix) List the specific waste materials that will be salvaged for resale, salvaged and reused on the Project, salvaged and stored for reuse on a future project, or recycled. Recycling facilities that will be used shall be identified by name, location, and phone number.

x) Identify the materials that cannot be recycled or reused with an explanation or justification, to be approved by the Architect.

The Contractor shall submit the Plan to the Architect within 10 calendar days after receipt of the Notice to Proceed, or prior to any waste removal, whichever occurs first. The Contractor shall promptly revise and resubmit the Plan as required by the Architect. Review of the Contractor's Waste Management Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations or meeting Project diversion requirements.

g. Plan Implementation

1) The Contractor shall implement the approved Waste Management Plan.

2) The Contractor shall maintain a log of each load and of each category of waste that is diverted from the landfill. The Contractor shall separately log the debris sent to a Class III landfill and materials sent to recycling facilities.

3) The Contractor shall include in the log the type of load, load weight, name of the hauling service, recycling service or landfill, and the date accepted by the recycling service or by the landfill.

4) The Contractor shall retain and make available all weight tickets and copies of receipts and invoices relating to the implementation of the Plan.

5) The District reserves the right to audit the log at any time.

h. Material Handling

1) Designate a specific area or areas on site to facilitate the separation of materials for potential reuse, salvage, recycling, and return. Clearly mark bins for each category of waste.

2) Keep waste bins and pile areas neat and clean. Do not contaminate non-recyclable waste with materials designated for reuse or recycling.

i. Contractor's Responsibilities

1) Provide on-site instruction of the appropriate separation, handling, recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the Project.

2) Separate, store, protect, and handle at the site identified recyclable and salvageable waste products in a manner that maximizes recyclability and salvagability of identified

materials. Provide the necessary containers, bins and storage areas to facilitate effective waste management. Provide barriers and enclosures around recyclable material storage areas which are non hazardous and recyclable or reusable and which shall be located away from construction traffic. Provide adequate space for pick-up and delivery. Use cleaning materials that are non hazardous and biodegradable.

41. INSTRUCTIONS AND MANUALS

Three copies of the maintenance instructions, application/installation instructions and service manuals called for in the Specifications shall be provided by the Contractor. These shall be complete as to drawings, details, parts lists, performance data and other information that may be required for the District to easily maintain and service the materials and equipment installed under this Contract. All manufacturers' application/installation instructions shall be given to the Project Manager at least ten (10) days prior to first material application or installation of the item. The maintenance instructions and manuals, along with any specified guarantees, shall be delivered to the Project Manager for review prior to submitting to District, and the Contractor or appropriate Subcontractors shall instruct District's personnel in the operation and maintenance of the equipment prior to final acceptance of the Project.

42. AS-BUILT DRAWINGS

The Contractor and all Subcontractors shall maintain on the work site a separate complete set of contract drawings which will be used solely for the purpose of recording changes made in any portion of the work during the course of construction, regardless of the reason for the change. As changes occur, there will be included or marked on this record set on a daily basis if necessary to keep them up to date at all times. Actual locations to scale shall be identified on the drawings for all runs of mechanical and electrical work, including all site utilities installed underground, in walls, floors, and furred spaces, or otherwise concealed. Deviations from the drawings shall be shown in detail. All main runs, whether piping, conduit, duct work, drain lines, etc., shall be located in addition by dimension and elevation. Progress payments may be delayed or withheld until such time as the record set is brought up to date to the satisfaction of the Project Manager. The Contractor shall verify that all changes in the work are included in the "AS-BUILT" drawings and deliver the complete set thereof to the Project Manager for review and approval within thirty (30) calendar days after District's notice of completion. District's acceptance and approval of the "AS-BUILT" drawings are a necessary condition precedent to the release of the final retention.

43. SUBSTITUTION OF SECURITIES

a. Pursuant to Public Contract Code §22300, Contractor may request in writing that it be allowed at its own expense to substitute securities for moneys withheld by District to ensure performance under this Contract. Only securities listed in Government Code §16430 and bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by Contractor and District shall qualify under this Article. Securities equivalent to the amount withheld shall be deposited with the District or with a state or federally chartered bank in California as the escrow agent. Upon satisfactory completion of the Contract and on

written authorization by the District, the securities shall be returned to Contractor. Contractor shall be the beneficial owner of the securities and shall receive any interest thereon. The Contractor may alternatively request District to make payment of retentions earned directly to the escrow agent at the expense of the Contractor.

b. At the expense of the Contractor, the Contractor may direct the investment of the payments into securities and the Contractor shall receive the interest earned on the investments upon the same terms provided for above for securities deposited by Contractor. Upon satisfactory completion of the Contract, Contractor shall receive from the escrow agent all securities, interest, and payments received by the escrow agent from the District. The Contractor shall pay to each Subcontractor, not later than 20 days of receipt of payment, the respective amount of interest earned, net of costs attributed to retention withheld from each Subcontractor, on the amount of retention.

c. Any escrow agreement entered into pursuant to this Article shall comply with Public Contract Code §22300 and shall be subject to approval by District's counsel.

44. NO DISCRIMINATION

It is the policy of the District that, in connection with all work performed under this public works contract, there shall be no discrimination against any prospective or active employee or any other person engaged in the work because of actual or perceived race, color, ancestry, national origin, ethnic group identification, religion, sex, gender, sexual orientation, age, physical or mental disability, or marital status. The Contractor agrees to comply with applicable Federal and California laws including, but not limited to, the California Fair Employment Practice Act, beginning with Government Code §12900, Government Code §11135, and Labor Code §§ 1735, 1777.5, 1777.6 and 3077.5. In addition, the Contractor agrees to require like compliance by all Subcontractors and suppliers.

45. LABOR STANDARDS

a. Work Hours:

In accordance with Labor Code §1810, eight (8) hours of labor shall constitute a legal day's work under this Contract. Contractor and any Subcontractor shall pay workers overtime pay as required by Labor Code §1815. The Contractor shall pay each worker, laborer, mechanic or persons performing work under this Contract at a rate not less than the prevailing wage for each craft or classification covering the work actually performed.

b. Penalty:

Contractor shall forfeit to District as a penalty the sum of twenty-five dollars (\$25.00) for each worker employed in the execution of this Contract by Contractor or any Subcontractor for each calendar day during which the worker is required or permitted to work more than eight (8) hours in any one (1) calendar day or more than forty (40) hours per calendar week in violation of Article 3, Division 2, Part 7, Chapter 1 of the California Labor Code.

c. Employment of Apprentices:

Contractor shall comply with Labor Code §§1773.3, 1777.5 and 1777.6, and 3077 *et. seq.*, each of which is incorporated by reference into this Contract. These sections require that contractors and subcontractors employ apprentices in apprenticeable occupations in a ratio of not less than one (1) hour of apprentice work for every five (5) hours of labor performed by a journeyman, unless an exception is granted and that Contractors and Subcontractors shall not discriminate against otherwise qualified employees as apprentices on any public works solely on the ground of actual or perceived race, religion, color, national origin, ethnic group identification, sex, gender, sexual orientation, age, or physical or mental disability. Only apprentices who are in training under written apprenticeship occupations shall be employed. The responsibility for compliance with these provisions for all apprenticeable occupations rests with Contractor.

d. The Contractor shall be knowledgeable of and comply with Labor Code §§1727, 1773.5, 1775, 1777, 1777.5, 1810, 1813, 1860, including all amendments thereto; each of these sections is incorporated by reference into this Contract.

46. GENERAL RATE OF PER DIEM WAGES

a. On File:

As required by Labor Code §1773.2, the District has available copies of the general prevailing rate of per diem wages for workers employed on public work as determined by the Director of the Department of Industrial Relations, which shall be available to any interested party on request. Contractor shall post a copy of the document at each job site.

b. Prevailing Wage Rate:

The Contractor and each Subcontractor shall pay each worker performing work under this Contract at a rate not less than the prevailing wage as defined in Labor Code §1771 and 1774 and §16000(a) of Title 8, California Code of Regulations.

c. Penalty:

In accordance with §1775 of the Labor Code, the Contractor shall forfeit to the District as penalty, the sum of fifty dollars (\$50) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rates, as determined by the Director of the California Department of Industrial Relations, for any work done under this Contract by Contractor or by any Subcontractor. Contractor shall also pay each worker the difference between the stipulated prevailing wages rates and the amount actually paid to such worker.

47. RECORD KEEPING

a. The Contractor agrees to comply with the provisions of §§1776 and 1812 of the Labor Code. The Contractor and each Subcontractor shall keep or cause to be kept an accurate record showing the

names, addresses, social security numbers, work classifications, straight time and overtime hours worked each day and week of all workers employed by Contractor in connection with the execution of this Contract or any subcontract thereunder and showing the actual per diem wages paid to each of such workers. These records shall be certified and shall be open at all reasonable hours to the inspection of the District awarding the Contract, its officers and agents, and to the Chief of the Division of Labor Statistics and Law Enforcement of the State Department of Industrial Law Enforcement of the State Department of Industrial Relations, and his or her other deputies and agents.

b. In addition, copies of the above records shall be available as follows:

1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request;

2) A certified copy of all payroll records shall be made available for inspection or furnished upon request to the District, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations;

3) A certified copy of all payroll records shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the District, the Division of Apprenticeship Standards, or the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been previously provided, the requesting party shall, prior to being provided the records, reimburse the costs of the Contractor, Subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the Contractor.

c. The Contractor shall file a certified copy of the records with the entity requesting the records within ten days after receipt of a written request. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the District, shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the Contractor awarded the Contract or performing the Contract shall not be marked or obliterated.

d. The Contractor shall inform the Owner of the location of the records, including the street address, city and county, and shall, within five working days, provide a notice of a change of location and address.

e. In the event of noncompliance with the requirements of this section, the Contractor shall have ten days in which to comply subsequent to receipt of written notice specifying in what respects the Contractor must comply with this section. Should noncompliance still be evident after the ten day period, the Contractor shall, as a penalty to the District, forfeit twenty-five dollars (\$25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.

f. Responsibility for compliance with this provision shall be with the Contractor.

48. PROJECT COMPLETION

a. When all of the work to be performed under this Contract has been fully completed, the Contractor shall notify the Project Manager and District, in writing, setting a date for inspection. The Contractor and Subcontractor representatives shall attend the inspection. As a result of this inspection, the Project Manager will prepare a list of items ("punch list") that are incomplete or not installed according to the Contract Documents. Failure to include items on this list does not relieve the Contractor from fulfilling all requirements of the Contract Documents.

b. The Project Manager will promptly deliver the punch list to the Contractor and it will include a period of time by which the Contractor shall complete all items listed thereon. On completion of all items on the punch list, verified by a final inspection, and all other Contract requirements, so that Final Completion has been achieved to the District's satisfaction, the District will file a Notice of Completion with the County Recorder. Payment of retention from the Contract, less any sums withheld pursuant to the terms of this Contract or applicable law, shall not be made sooner than thirty-five (35) calendar days after the date of filing of Notice of Completion.

c. District reserves the right to occupy buildings and/or portions of the site at any time before Completion, and occupancy shall not constitute final acceptance of any part of the Work covered by the Contract Documents, nor shall such occupancy extend the date specified for completion of the Work. Beneficial occupancy of building(s) does not commence any warranty period or entitle Contractor to any additional compensation due to such occupancy, or affect in any way or amount Contractor's obligation to pay liquidated damages for failure to complete the Project on time.

49. TRENCHING OR OTHER EXCAVATIONS

a. Excavations or Trenches Deeper than Four Feet:

If the Project involves digging trenches or other excavations that extend deeper than four feet, the following provisions shall be a part of this Contract:

1) The Contractor shall promptly, and before the following conditions are disturbed, provide written notice to the District if the Contractor finds any of the following conditions:

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

(b) Subsurface or latent physical conditions at the site which are different from those indicated or expected.

(c) Unknown physical conditions at the site of any unusual nature or which are materially different from those ordinarily encountered and generally recognized as inherent in work which the Contractor generally performs.

2) In the event that the Contractor notifies the District that Contractor has found any of the conditions specified in subparagraphs (a), (b) or (c), above, the District shall promptly investigate the condition(s). If the District finds that the conditions are materially different or that a hazardous waste is present at the site which will affect the Contractor's cost of, or the time required for, performance of the Contract, the District shall issue a change order in accordance with the procedures set forth in this Contract.

3) In the event that a dispute arises between the District and the Contractor regarding any of the matters specified in Paragraph (2), above, the Contractor shall proceed with all work to be performed under the Contract and the Contractor shall not be excused from completing the Project as provided in the Contract. In performing the work pursuant to this Paragraph, the Contractor retains all rights provided by Article 50 which pertains to the resolution of disputes between the contracting parties.

b. Regional Notification Center:

The Contractor, except in an emergency, shall contact the appropriate regional notification center at least two (2) days prior to commencing any excavation if the excavation will be conducted in an area that is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the District, and obtain an inquiry identification number from that notification center. No excavation shall be commenced and/or carried out by the Contractor unless an inquiry identification number has been assigned to the Contractor or any Subcontractor and the Contractor has given the District the identification number. Any damages or delays arising from Contractor's failure to make appropriate notification shall be at the sole risk and expense of the Contractor and shall not be considered for an extension of the Contract time.

c. Existing Utility Lines:

1) Pursuant to Government Code §4215, the District assumes the responsibility for removal, relocation, and protection of main or trunk utility lines and facilities located on the construction site at the time of commencement of construction under this Contract with respect to any such utility facilities that are not identified in the plans and Specifications. Contractor shall not be assessed liquidated damages for delay in completion of the Project caused by the failure of the District or the owner of a utility to provide for removal or relocation of such utility facilities.

2) Locations of existing utilities provided by the District shall not be considered exact, but approximate within reasonable margin and shall not relieve Contractor of responsibilities to exercise reasonable care nor costs of repair due to Contractor's failure to do so. The District shall compensate Contractor for the costs of locating and repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the plans and Specifications with reasonable accuracy.

3) No provision herein shall be construed to preclude assessment against Contractor for any other delays in completion of the Project. Nothing in this section shall be deemed to require the District to indicate the presence of existing service laterals, appurtenances, or other utility lines, with the exception of main or trunklines, whenever the presence of such utilities on the site of the construction Project can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the site of the construction.

4) If Contractor, while performing work under this Contract, discovers utility facilities not identified by the District in the Project plans and Specifications, Contractor shall immediately notify the District and the utility in writing. The cost of repair for damage to above-mentioned visible facilities without prior written notification to the District shall be borne by the Contractor.

d. Prompt Notification:

Contractor understands, acknowledges and agrees that the purpose for prompt notification to the District pursuant to these provisions is to allow the District to investigate the condition(s) so that the District shall have the opportunity to decide how the District desires to proceed as a result of the conditions. Accordingly, failure of Contractor to promptly notify the District in writing, pursuant to these provisions, shall constitute Contractor's waiver of any claim for damages incurred as a result of the conditions.

e. Trenches Five Feet and Deeper:

Pursuant to Labor Code §6705, if the Contract price exceeds \$25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, promptly submit to the District and/or a registered civil or structural engineer employed by the District or Project Manager, a detailed plan showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

50. RESOLUTION OF CONSTRUCTION CLAIMS

a. Public work claims of \$375,000 or less between the Contractor and the District are subject to the provisions of Article 1.5 (commencing with §20104) of Chapter 1 of Part 2 of the Public Contract Code ("Article 1.5 claim"). For purposes of Article 1.5, "public work" has the same meaning as set forth in §§3100 and 3106 of the Civil Code; "claims" means a separate demand by Contractor for a time extension or payment of money or damages arising from work done by or on behalf of Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to or the amount of the payment which is disputed by the District.

b. All claims shall be submitted on or before the date of the Final Payment and shall include all documents necessary to substantiate the claim. District shall respond in writing within 45 days of receipt of claim if the claim is less than or equal to \$50,000 ("\$50,000 claim") or within 60 days if the claim is over \$50,000 but less than or equal to \$375,000 ("50,000 - \$375,000 claim"). In either case, District may request in writing within 30 days of receipt of claim any additional documentation supporting the claim or relating to any defenses to the claim which the District may have against the Contractor. Any additional information shall be requested and provided upon mutual agreement of the District and the Contractor. District's written response to the claim shall be submitted to Contractor within 15 days after receipt of the further documentation for \$50,000 claims or within 30 days after receipt of the further documentation for \$50,000 - \$375,000 claims or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

c. Within 15 days of receipt of the District's response, if Contractor disputes the District's written response, or within 15 days of the District's failure to respond within the time prescribed, the Contractor shall provide written notification to District demanding an informal conference to meet and confer ("conference") to be scheduled by District within 30 days. Following the conference, if any claim or portion remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with §900) and Chapter 2 (commencing with §910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the period of time within which a claim must be filed is tolled from the time the claimant submits a written claim pursuant to this section until the time that claim is denied as a result of the conference process, including any period of time utilized by the meet and confer process.

d. Pursuant to Public Contract Code §20104.2(f), this section does not apply to tort claims and does not change the period for filing claims or actions specified by Chapter 1 (commencing with §900) and Chapter 2 (commencing with §910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

e. If a civil action is filed, within 60 days, but no earlier than 30 days, following the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide that both parties select a disinterested third person mediator within 15 days, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days of the commencement of the mediation unless time is extended upon a good cause showing to the court or by stipulation of the parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

f. If the matter remains in dispute, the case shall be submitted to judicial arbitration as set forth in Public Contract Code §§20104.4 (b)(1) through (b)(3).

g. For any claim in excess of \$375,000, the Contractor and the District shall follow the same process as for an Article 1.5 claim. The District will forward a response within 60 days of submittal of any such claim. Judicial arbitration is not required for claims in excess of \$375,000.

h. In addition, for all unresolved claims that the Contractor wishes to pursue, the Contractor shall file a timely claim pursuant to the Government Claims Act and shall otherwise comply with the procedures set forth in that Act prior to commencing any litigation against the District. The accrual date for any such claim is the date the dispute or controversy first arose regarding the issues raised in the claim.

i. "The date of Final Payment," as used in this Article 50, means the date the public entity is required to release retention proceeds in accordance with Public Contract Code §7107 regardless of whether any payment is made to the Contractor at that time.

j. The claims required by this Article are jurisdictional and conditions precedent to the commencement of any further legal proceedings. Strict compliance with all filing deadlines is mandatory.

51. DISABLED VETERANS PARTICIPATION GOALS *(Applies to K-12 districts only.)*

In accordance with Education Code §17076.11, this District has a participation goal for disabled veteran business enterprises ("DVBE") of at least 3 percent (3%) per year of the overall dollar amount of funds allocated to the District by the State Allocation Board pursuant to the Leroy F. Greene School Facilities Act of 1998 for construction or modernization and expended each year by the District. Prior to, and as a condition precedent for final payment under any contract for such project, the Contractor shall provide appropriate documentation to the District identifying the amount paid to DBVE in conjunction with the Contract, so that the District can assess its success at meeting this goal.

52. RETENTION OF DVBE RECORDS *(Applies to K-12 districts only.)*

The Contractor agrees that, for all contracts subject to DVBE participation goals, the State and the District have the right to review, obtain and copy all records pertaining to performance of the contract in accordance with DVBE requirements. The Contractor agrees to provide the State or the District with any relevant information requested and shall permit the State or District access to its premises upon reasonable notice for purposes of interviewing employees and inspecting records. The Contractor agrees to maintain such records for a period of three years after final payment under the Contract.

53. FINGERPRINTING

(Applies to K-12 districts only.)

District Determination of Fingerprinting Requirement Application

The District has considered the totality of the circumstances concerning the Project and has determined that the Contractor and Contractor's employees (which includes Subcontractor employees):

_____ are subject to the requirements of Education Code §45125.2 and Paragraph (a) below, is applicable.

___X___ are not subject to the requirements of Education Code §45125.2, and Paragraph (b) below, is applicable.

a. Contracts for Construction, Reconstruction, Rehabilitation or Repair of a School Facility Involving More than Limited Contact with Students (§45125.2)

By execution of the Contract, the Contractor acknowledges that Contractor is entering into a contract for the construction, reconstruction, rehabilitation, or repair of a school facility where the Contractor and/or Contractor's employees will have more than limited contact with students and the services to be provided do not constitute an emergency or exceptional situation. In accordance with Education Code §45125.2 the Contractor shall, at Contractor's own expense, (1) install a physical barrier to limit contact with students by Contractor and/or Contractor's employees, and/or (2) provide for the continuous supervision and monitoring of the Contractor and/or Contractor's employees by an

employee of the Contractor who has received fingerprint clearance from the California Department of Justice, and/or (3) provide for the surveillance of the Contractor and Contractor's employees by a District employee.

b. Contracts for Construction, Reconstruction, Rehabilitation or Repair of a School Facility Involving Only Limited Contact With Students (§45125.2)

By execution of the Contract, the Contractor acknowledges that Contractor is entering into a contract for the construction, reconstruction, rehabilitation or repair of a school facility involving only limited contact with students. Accordingly, the parties agree that the following conditions apply to any work performed by the Contractor and Contractor's employees on a school site: (1) Contractor and Contractor's employees shall check in with the school office each day immediately upon arriving at the school site; (2) Contractor and Contractor's employees shall inform school office staff of their proposed activities and location at the school site; (3) Once at such location, Contractor and Contractor's employees shall not change locations without contacting the school office; (4) Contractor and Contractor's employees shall not use student restroom facilities; and (5) If Contractor and/or Contractor's employees find themselves alone with a student, Contractor and Contractor's employees shall immediately contact the school office and request that a member of the school staff be assigned to the work location.

54. LABOR COMPLIANCE PROGRAM

The project is subject to compliance monitoring and enforcement by the California Department of Industrial Relations. In accordance with SB 854, all bidders, contractors and subcontractors working at the site shall be duly registered with the Department of Industrial Relations at time of bid opening and at all relevant times. Proof of registration shall be provided as to all such contractors prior to the commencement of any work. Contractor shall coordinate with the Architect to ensure that DIR is advised of the award of the construction contract in a timely manner by filing form PWC-100 with DIR within five days of award of the contract.

55. Blank.

56. DRUG-FREE WORKPLACE CERTIFICATION

Contractor certifies all of the following:

Contractor is aware of the provisions and requirements of California Government Code §§ 8350 et seq., the Drug Free Workplace Act of 1990.

Contractor is authorized to certify, and does certify, that a drug free workplace will be provided by doing all of the following:

Publishing a statement notifying all employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in Contractor's workplace and specifying actions which will be taken against employees for a violation of the prohibition;

Establishing a drug-free awareness program to inform employees about all of the following:

- (i) The dangers of drug abuse in the workplace;

- (ii) Contractor's policy of maintaining a drug-free workplace;
- (iii) The availability of drug counseling, rehabilitation and employee-assistance programs; and
- (iv) The penalties that may be imposed upon employees for drug abuse violations;

Requiring that each employee engaged in the performance of Work on the Project be given a copy of the statement required by subdivision (a), above, and that as a condition of employment by Contractor in connection with the Work on the Project, the employee agrees to abide by the terms of the statement.

Contractor understands that if the District determines that Contractor has either: (a) made a false certification herein, or (b) violated this certification by failing to carry out and to implement the requirements of Government Code §§ 8350 et seq., the Contract is subject to termination, suspension of payments, or both. Contractor further understands that, should Contractor violate the terms of the Drug-Free Workplace Act of 1990, Contractor may be subject to debarment in accordance with the provisions of Government Code §§ 8350, et seq.

57. PROVISIONS REQUIRED BY LAW DEEMED INSERTED

Every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted, and this Contract shall be read and enforced as though it were included, and if through mistake or otherwise any provision is not inserted or is not correctly inserted, upon application of either party the Contract shall be amended to make the insertion or correction. All references to statutes and regulations shall include all amendments, replacements, and enactments on the subject which are in effect as of the date of this Contract.

58. GENERAL PROVISIONS

a. Assignment and Successors:

Neither party may transfer or assign its rights or obligations under the Contract Documents, in part or in whole, without the other party's prior written consent. The Contract Documents are binding on the heirs, successors, and permitted assigns of the parties hereto.

b. Third Party Beneficiaries:

There are no intended third party beneficiaries to the Contract.

c. Choice of Law and Venue

The Contract Documents shall be governed by California law, and venue shall be in the Superior Court of the county in which the project is located, and no other place.

d. Severability

If any provision of the Contract Documents is determined to be illegal, invalid, or unenforceable, in part or in whole, the remaining provisions, or portions of the Contract Documents shall remain in full force and effect.

e. Entire Agreement

The Contract Documents constitute the final, complete, and exclusive statement of the terms of the agreement between the parties regarding the subject matter of the Contract Documents and supersedes all prior written or oral understandings or agreements of the parties.

f. Waiver

No waiver of a breach, failure of any condition, or any right or remedy contained in or granted by the provisions of the Contract Documents shall be effective unless it is in writing and signed by the party waiving the breach, failure, right, or remedy. No waiver of any breach, failure, right, or remedy shall be deemed a waiver of any other breach, failure, right, or remedy, whether or not similar, nor shall any waiver constitute a continuing waiver unless the writing so specifies.

g. Headings

The headings in the Contract Documents are included for convenience only and shall neither affect the construction or interpretation of any provision in the Contract Documents nor affect any of the rights or obligations of the parties to the Contract.

--END--

NOTICE OF AWARD

To:

Project Description: Proposition 39 Administration Building Furnace Project

The District has considered the bid submitted by you for the above described work in response to its Notice Inviting Bids for the Project.

You are hereby notified that your bid has been accepted in the amount of:

_____(\$ _____).

You are required to execute the Contract and furnish the required Performance Bond and Payment Bond using the bond forms provided in the Contract Documents and the required certificates of insurance within ten (10) calendar days from the date of issuance of this Notice.

If you fail to execute the Contract and to furnish the bonds and insurance within ten (10) calendar days from the date of issuance of this Notice, the District will be entitled to consider all your rights arising out of its acceptance of your bid as abandoned and your Bid Bond forfeited. The District will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the District.

Dated this xth day of xxxxx, 2017.

By _____
Authorized District Signature

Receipt of this above Notice of Award is hereby acknowledged by:

_____, this is the _____

day of _____, 20__.

By _____
Title _____

NOTICE TO PROCEED

To:

Date:

PROJECT: Proposition 39 Administration Building Furnace Project

You are hereby notified to commence work in accordance with the Contract dated _____, 20__, on or before _____, 20__, and you shall complete the work _____ consecutive calendar days thereafter.

By: _____
Authorized District Signature

PERFORMANCE BOND

WHEREAS, the Governing Board of the Humboldt County Office of Education (“District”), at its meeting on _____, 20____, has awarded to _____ (“Principal”), the Contract for performance of the following project (“Project”):

Proposition 39 Administration Building Furnace Project

WHEREAS, the Principal is required under the terms of the Contract to furnish a bond to the District as obligee ensuring its full and faithful performance of the Contract Documents, which are fully incorporated herein by this reference,

NOW, THEREFORE, we, the Principal and _____, as Surety, hereby guarantee the Principal’s full, faithful and complete performance of the Contract Document requirements in the penal sum of _____ dollars (\$_____) for the payment of which sum will and truly be made, we bind ourselves, our heirs, executors, administrators and successors, jointly, severally, and firmly by this agreement to perform or have performed all of the work and activities required to complete the Project pursuant to the Contract Documents and to pay to the District all damages the District incurs as a result of the Principal’s failure to fully perform in accordance with the Contract Documents.

The condition of the obligation is such that if the Principal, its heirs, executors, administrators, successors or assigns shall in all things abide by, and well and truly keep and perform the covenants, conditions and agreements in the Contract Documents and any amendment thereof made as therein provided, on its or their parts to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall insure and indemnify and save harmless the District, its officers and agents, as therein stipulated, then this obligation shall become null and void. Otherwise, it shall be and remain in full force and effect.

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

Principal and Surety further agree to pay all costs incurred by the District in connection with enforcement of this bond, including, but not limited to the District’s reasonable attorney’s fees and costs incurred, with or without suit, in addition to any other sum required by this bond. Surety further agrees that death, dissolution, or bankruptcy of the Principal shall not relieve the Surety of its obligations hereunder.

In witness whereof, this instrument has been duly executed by the Principal and Surety this _____ day of _____, 20__.

*To be signed by
Principal and Surety
and acknowledgment
and notarial seal to
be attached.*

PRINCIPAL

By: _____

TITLE _____

SURETY

By: _____

TITLE _____

The above bond is accepted and approved this _____ day of _____, 20__.

By: _____
Authorized District Signature

PAYMENT BOND

WHEREAS, _____ the Humboldt County Office of Education ("District") and the Contractor, _____ Inc ("Principal") have entered into a contract ("Contract") for the furnishing of all materials, labor, services, equipment, tools, supervision and transportation necessary, convenient and proper for the Proposition 39 Administration Building Furnace Project ("Project") which Contract dated _____, 2____, and all of the Contract Documents made part thereof are fully incorporated herein by this reference; and

WHEREAS, Contractor/Principal is required by Division 4, Part 6, Title 3, Chapter 5 (commencing at Section 9550) of the California Civil Code to furnish a bond in connection with the contract;

NOW, THEREFORE, we, the Contractor/Principal and _____ as Surety, are held firmly bound unto Owner in the penal sum of \$_____ Dollars (\$_____), lawful money of the United States of America for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Contractor/Principal, his/her or its heirs, executors, administrators, successors, or assigns, or a subcontractor, shall fail to pay any person or persons named in Civil Code Section 9100 or fail to pay for any materials 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 due under the Unemployment Insurance Code with respect to work or labor thereon of any kind, or shall fail to deduct, withhold, and pay over to the Employment Development Department any amounts required to be deducted, withheld, and paid over by Section 13020 of the Unemployment Insurance Code with respect to work and labor thereon of any kind, then said Surety will pay for the same, in or to an amount not exceeding the amount set forth above, and in case suit is brought upon this bond Surety will also pay such reasonable attorney's fees as shall be fixed by the court, awarded and taxed as provided in Division 4, Part 6, Title 3, Chapter 5 (commencing at Section 9550) of the California Civil Code.

This bond shall inure to the benefit of any of the persons named in Section 9100 of the California Civil Code so as to give a right of action to such person or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the obligation of the bond by any change, extension of time for performance, addition, alteration, or modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement described above or pertaining or relating to the furnishing of labor, materials, or equipment therefor, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or work of improvement described above, nor by any rescission or attempted rescission of the contract, agreement, or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond, and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such

bond has been given, by reason of any breach of contract between the Owner and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Section 8400 and 8402 of the California Civil Code and has not been paid the full amount of his/her or its claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration, or modification.

In witness whereof, this instrument has been duly executed by the Principal and Surety this _____ day of _____, 20__.

*To be signed by
Principal and Surety
and acknowledgment
and notarial seal to
be attached.*

PRINCIPAL

By:

Title

SURETY

By:

Title

The above bond is accepted and approved this _____ day of _____, 20__.

By: _____
Authorized District Signature

CONTRACT APPENDIX A

PROPOSITION 39 REQUIREMENTS

Contractor acknowledges that all Work must qualify as an eligible project under Proposition 39 and shall comply with all Proposition 39 Guidelines; and that the Scope of Work may be amended to reflect changes in funding allocation and District's energy expenditure plan, upon mutual agreement of the Parties and a written amendment to this Contract related to any changes in scope, payment and duration. Prior to commencement of any Work, District shall review and approve the Project.

Contractor agrees to maintain and make available Project records for inspection by the District and other agencies, as requested by the District. Contractor shall provide or assist the District in providing all required annual and final reports for each Proposition 39 funded project and shall provide data for reports to Citizens Oversight Board.

Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work, including but not limited to data and reports to the California Energy Commission required under Proposition 39.

CONTRACT APPENDIX B

Projected energy savings and cost estimates, per Pub. Res. Code 26206.

<i>Energy Efficiency Measure(s)</i>	<i>Description</i>	<i>For Scoping See:</i>	<i>Projected Annual Energy Savings</i>	<i>Projected Annual Fiscal Savings</i>
HVAC Upgrade	Install five new 97% AFUE condensing furnaces	Appendix 2	1,729 therms	\$1,899.40

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition and removal of selected portions of building or structure.
 - 2. Demolition and removal of selected site elements.
 - 3. Salvage of existing items to be reused or recycled.
- B. **Industry Bulletin regarding compliance with federal regulations and certification requirements for new lead paint standards is attached.**
- C. National Emission Standards for Hazardous Air Pollutants (NESHAPs) Notification and Fee:
 - 1. **General Contractor shall file notification of demolition or renovation ten days prior to beginning any construction activities. Contact information as follows:**
Website: www.ncuagmd.org
Contact: Eric Bruckner (707)-443-3093.
Abatement Consultant: Terry Baker, Baker Environmental (530-842-7987).
 - 2. **All filing fees shall be paid by Contractor.**
 - 3. **Sample NESHAP Notification form and instructions are attached.**
- D. Related Sections include the following:
 - 1. Division 01 Section "Summary" for use of premises and Owner-occupancy requirements.
 - 2. Division 01 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for selective demolition operations.
 - 3. Division 01 Section "Cutting and Patching" for cutting and patching procedures.
 - 4. Division 01 Section "Construction Waste Management and Disposal" for disposal of demolished materials.
 - 5. Division 02 Section "Structure Demolition" for demolition of entire buildings, structures, and site improvements.
 - 6. Division 31 Section "Site Clearing" for site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.
 - 1. Coordinate with Owner's historical adviser, who will establish special procedures for removal and salvage.

1.5 SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 2. Coordination for shutoff, capping, and continuation of utility services.
 - 3. Locations of proposed dust- and noise-control temporary partitions and means of egress.
 - 4. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
 - 5. Means of protection for items to remain and items in path of waste removal from building.

1.6 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6, NFPA 241, and NESHAP (National Emission Standards for Hazardous Air Pollutants).
- C. Pre-demolition Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."
- D. Pre-demolition Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.

3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.7 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
 1. Comply with requirements specified in Division 01 Section "Summary."
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 1. Before selective demolition, Owner will remove the following items:
 - a. **This will be covered in an addendum.**
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. **Hazardous Materials: Hazardous materials are present in construction to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.**
 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 1. Maintain fire-protection facilities in service during selective demolition operations.

1.8 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
 - 1. Comply with requirements for existing services/systems interruptions specified in Division 01 Section "Summary."
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
 - a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Comply with requirements for access and protection specified in Division 01 Section "Temporary Facilities and Controls."

- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 01 Section "Temporary Facilities and Controls."
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Coordinate with Abatement Contractor for locations of new penetrations and openings.
 2. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 3. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 4. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 5. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 6. Maintain adequate ventilation when using cutting torches.
 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 10. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

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

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Cut concrete to a depth of at least 3/4 inch at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.
- B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.
- C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.
- E. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.
1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.
- F. Roofing: Remove no more existing roofing than can be covered in one day by new roofing and so that building interior remains watertight and weathertight. Refer to Division 07 for new roofing requirements.
1. Remove existing roof membrane, flashings, copings, and roof accessories.
 2. Remove existing roofing system down to substrate.
- G. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 4. Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.8 SELECTIVE DEMOLITION SCHEDULE

- A. Refer to demolition plans for complete scope of work. Delete this Article if Drawings show all selective demolition notes and lists.

END OF SECTION 024119

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Industry Bulletin

CONTRACTORS STATE LICENSE BOARD

9821 Business Park Drive, Sacramento, California 95827
Mailing Address: P.O. Box 26000, Sacramento, CA 95826

Check The License First!

800-321-CSLB

www.cslb.ca.gov

www.CheckTheLicenseFirst.com



DATE: February 23, 2010

BULLETIN #10-04

Heavy Fines on the Horizon for Violators of New Lead Paint Standards

Federal certification requirements to take effect

SACRAMENTO – The Contractors State License Board (CSLB) is reminding licensees that beginning April 22, 2010, contractors could face fines of up to \$37,500 for not complying with federal regulations aimed at protecting them and consumers from exposure to dust from lead-based paints.

The new U.S. Environmental Protection Agency (U.S. EPA) requirements apply to those working on remodeling projects in homes, childcare facilities, and schools built before 1978, all of which are presumed to have lead-based paint. Although the lead-based paint may have been covered by non-toxic paints in subsequent years, remodeling or demolition will disturb the lead paint underneath, potentially harming workers and consumers. For example, amount of lead dust that can cover a three-by-five-inch card can poison a 1,500-square-foot house or apartment, and cause it to fail a lead safety inspection.

Contractors conducting renovation activities in pre-1978 buildings must receive training from a U.S. EPA-accredited training provider. Contractors or their employees with lead safety certification from the California Department of Public Health (DPH) may take a four-hour U.S. EPA-accredited course to achieve federal compliance. At least one person in a firm must be trained and certified in renovation. That firm must then apply to U.S. EPA for firm certification.

The requirements apply to all contractors who disturb lead-based paint in a six-square-foot area or greater indoors, and a 20-square-foot 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.

Renovator firm certification costs \$300 and lasts for five years. Certification forms are available at www.epa.gov/lead, or call 1-800-424-LEAD (5323). Listings of accredited training providers are also available on this Web site. The cost for the training course varies by provider.

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ASBESTOS DEMOLITION AND RENOVATION NOTIFICATION FORM GENERAL
INFORMATION

The Asbestos NESHAP, 40 CFR Part 61, Subpart M, requires written notification of demolition or renovation operations under Section 61.145. This form may be used to fulfill this requirement. Only complete notification forms are acceptable. Incomplete notification may result in enforcement action.

This notification should be typewritten and postmarked or delivered no later than ten days prior to the beginning of the asbestos removal activity (dates specified in Section VIII) or demolition (dates specified in Section IX). Please submit the form, along with the appropriate fee, to:

NORTH COAST UNIFIED AQMD
2300 MYRTLE AVENUE
EUREKA, CA 95501

INSTRUCTIONS

- I. Type of Notification: Enter "O" if the notification is a first time or original notification, "R" if the notification is a revision of a prior notification, or "C" if the activity has been cancelled.
- II. Facility Information: Enter the names, addresses, contact persons and telephone numbers of the following:
 - Owner: Legal owner of the site at which asbestos is being removed or demolition planned
 - Asbestos Removal Contractor: Certified asbestos contractor hired to remove asbestos (include DOSH registration #)
 - Other Demolition or Renovation Operator: Demolition contractor, general contractor, or other person who leases, operates, controls, or supervises the site (fire dept if training burn).
- III. Type of Operation: Enter "D" for facility demolition, "R" for facility renovation, "O" for ordered demolition, or "E" for emergency renovation. Fire training burns are considered facility demolitions ("D").
- IV. Is Asbestos Present?: Answer "yes" or "no" regardless of the amount of asbestos present.
- V. Facility Description: Provide detailed information on the areas being renovated or demolished. If applicable, provide the floor numbers and room numbers where renovations are to be conducted.
 - Site Location: Provide information needed to locate site in event that the address alone is inadequate.
 - Building Size: Provide in square meters or square feet.
 - No. of Floors: Enter the number of floors including basement or ground floors.
 - Age in Years: Enter approximate age of the facility.
 - Present Use / Prior Use: Describe the primary use of the facility or enter the following codes: H - hospital; S - school; P - public building; O - office; I - industrial; U - university or college; B - ship; C - commercial; or R - residential.
- VI. Asbestos Detection Procedure: Describe methods and procedures used to determine whether asbestos is present at the site, including a description of the analytical methods employed. **Building inspections must be performed by an AHERA-accredited Building Inspector** (40 CFR 763, Subpart E, App. C). Include copy of current accreditation. If an inspection report has been prepared by a consultant for the facility please include a copy with the notification.
- VII. Approximate Amount of Asbestos, Including: (1) Regulated asbestos containing material (RACM) to be removed (including nonfriable ACM to be sanded, ground, or abraded); (2) Category I ACM not removed; and (3) Category II ACM not removed. For both removals and demolition, enter the amount of RACM to be removed by entering a number in the appropriate box and an "X" for the unit. For demolition only, enter the amount of Category I and II nonfriable asbestos not to be removed in the appropriate boxes. Category I nonfriable material includes packing, gasket, resilient floor covering, and asphalt roofing materials containing more than one percent asbestos. Category II nonfriable material includes any material, excluding Category I products, containing more than one percent asbestos, that when dry, cannot be crumbled, pulverized, or reduced to powder. Facilities to be used for fire training purposes must have all materials containing more than one percent asbestos removed.
- VIII. Scheduled Dates of Asbestos Removal: Enter scheduled dates (month/day/year) for asbestos removal work. Asbestos removal work includes any activity, including site preparation, which may break up, dislodge, or disturb asbestos material. **These dates must be accurate.** Asbestos removal work occurring prior to the start date or after the end date is a violation and could result in substantial enforcement action. If these dates change, notify the District immediately, by submitting a revision request form.
- IX. Scheduled Dates of Demo/Renovation: Enter scheduled dates (month/day/year) for beginning and ending of the planned demolition or renovation. For fire training burns this is the time period when the actual fire training burn will take place. **These dates must be accurate.** Demolition or renovation activity occurring prior to the start date or after the end date is a violation and could result in substantial enforcement action. If these dates change, notify the District immediately, by submitting a revision request form.
- X. Description of Planned Demolition or Renovation Work, and Method(s) to be Used: Include here a description of the overall work being done and the techniques being used. A work plan can be attached to address this item.

- XI. Description of Engineering Controls and Work Practices to be Used to Control Emissions of Asbestos at the Demolition or Renovation Site: Describe the work practices and engineering controls selected to ensure compliance with the requirements of the regulation, including removal and waste handling emission control procedures. A work plan can be attached to address this item.
- XII. Waste Transporter(s): Enter the name, addresses, contact persons and telephone numbers of the persons or companies responsible for transporting ACM from the removal site to the waste disposal site. If the removal contractor or owner is the waste transporter, state "same as owner" or "same as removal contractor".
- XIII. Waste Disposal Site: Identify the waste disposal site, including the complete name, location, and telephone number of the facility. If ACM is to be disposed of at more than one site, provide complete information on an additional sheet submitted with the form.
- XIV. If Demolition Ordered by a Government Agency: Provide the name of the responsible official, title and agency, authority under which the order was issued, the dates of the order and the dates of the ordered demolition. Include a copy of the order with the notification.
- XV. Emergency Renovation Information: Provide the date and time of the emergency, a description of the event and a description of unsafe conditions, equipment damage or financial burden resulting from the event. The information should be detailed enough to evaluate whether a renovation falls within the emergency exception.
- XVI. Description of Procedures to be Followed in the Event that Unexpected Asbestos is Found or Previously Nonfriable Asbestos Material Becomes Crumbled, Pulverized, or Reduced to Powder: Provide adequate information to demonstrate that appropriate actions have been considered and can be implemented to control asbestos emissions adequately, including at a minimum, conformance with applicable work practice standards. Typically these will include a work stoppage, wetting of material, and notification to the District.
- XVII. Certification of Presence of Trained Supervisor: Certify that a person trained in asbestos removal procedures and the provisions of this regulation will be on-site and supervise the demolition or renovation. **When handling RACM, the supervisor must be a current AHERA-accredited contractor/supervisor, and the workers must be AHERA-accredited workers** (40 CFR 763 Subpart E App. C). The supervisor is responsible for the activity on-site. Evidence that the training has been completed by the supervisor must be available for inspection during normal business hours.
- XVIII. Verification: Please certify the accuracy and completeness of the information provided by signing and dating the notification form.

FEES AND OTHER REQUIREMENTS

Demolition - OR - Renovation Notifications\$200
 Asbestos Abatement (with Demolition Projects).....\$200 (Regulation IV, Rule 401, §1.1.2)

- ☐ All fees must accompany the notification form.
- ☐ Notification forms must be mailed or hand delivered to the District office; faxes are acceptable, if followed by the original within three (3) days.
- ☐ Notifications must be received or post-marked at least 10 business days prior to the start of demolition or renovation.
- ☐ Incomplete forms will be returned for correction. The 10 day clock does not start until a correctly completed notification is received by the District office.
- ☐ If a person cancels a notification, they may request a fee refund provided:
 1. the fee has been paid,
 2. the District has not performed an inspection,
 3. the request is in writing,
 4. and the request is made within ten days following cancellation.
- ☐ When a Fire Department receives a fee or donation from the property owner of a structure that is to be used for fire training purposes, the notification/inspection fee noted above shall be paid. Coordinated Burn Authorization Permits are required for Fire Department training burns; however they are exempt from the permit fees (Regulation II, Rule 201, 6.2).
- ☒ **Rule 401**
§1.1.2 Where a demolition project includes the removal of Regulated Asbestos Containing Material from a facility prior to the wrecking of the structure, the removal is treated as a separate renovation project for the purposes of fees, although they may be included in a single notification. This requires a **second \$200.00 fee.**
- ☐ Any demolition or renovation project that requires physical barriers for the purpose of controlling asbestos emissions (containment) shall install transparent viewing ports which allow observation, to the extent possible, of all stripping and removal of regulated asbestos containing material from outside the containment area.

Questions on completing the asbestos demolition / notification form, or on the NESHAP regulations covering asbestos, can be directed to District staff at (707) 443-3093.

NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT

NOTIFICATION OF DEMOLITION OR RENOVATION SUBJECT TO NESHA's (40 CFR PART 61.145)

IMPORTANT: Notifications must be signed in ink. All numbered items must be addressed, regardless of applicability – e.g., enter N/A where numbered items don't apply to your project. Only originals accepted.

Operator Project #	Postmark	Date Received	Notification #																														
I. TYPE OF NOTIFICATION Choose One: <input type="radio"/> Original <input type="radio"/> Revised <input type="radio"/> Canceled																																	
II. FACILITY INFORMATION (Identify owner, removal contractor and any other contractors)																																	
OWNER NAME:																																	
Address:																																	
City:	State:	Zip																															
Contact:	Tel:																																
ASBESTOS REMOVAL CONTRACTOR:			DOSH Reg #																														
Address:																																	
City:	State:	Zip:																															
Contact:	Tel:																																
OTHER DEMOLITION OR RENOVATION OPERATOR:																																	
Address:																																	
City:	State:	Zip:																															
Contact:	Tel:																																
III. TYPE OF OPERATION Choose One: <input type="radio"/> Demolition <input type="radio"/> Ordered Demolition <input type="radio"/> Renovation <input type="radio"/> Emergency Renovation																																	
IV. IS ASBESTOS PRESENT Choose One: <input type="radio"/> Yes <input type="radio"/> No																																	
V. FACILITY DESCRIPTION (Include building name, number and floor or room numbers)																																	
Bldg. Name:																																	
Address:																																	
City:	State:	Zip:	County:																														
Site Location:																																	
Building Size:	# of Floors:	Age in Years:																															
Present Use:		Prior Use:																															
VI. PROCEDURE USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL (reference the attached copy of the asbestos survey)																																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">VII. APPROXIMATE AMOUNT OF ASBESTOS, INCLUDING:</th> <th style="width: 10%;">RACM To Be Removed</th> <th colspan="2" style="width: 30%;">Nonfriable Asbestos Material To Be Removed</th> <th colspan="2" style="width: 25%;">Indicate Unit of Measurement Below</th> </tr> <tr> <td>1. Regulated ACM to be Removed</td> <td></td> <td>Category I</td> <td>Category II</td> <td colspan="2">Unit</td> </tr> </thead> <tbody> <tr> <td>2. Category 1 ACM to be Removed</td> <td></td> <td></td> <td></td> <td>Ln Ft:</td> <td>Ln m:</td> </tr> <tr> <td>3. Category II ACM to be Removed</td> <td></td> <td></td> <td></td> <td>Sq Ft:</td> <td>Sq m:</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Cu Ft:</td> <td>Cu m:</td> </tr> </tbody> </table>				VII. APPROXIMATE AMOUNT OF ASBESTOS, INCLUDING:	RACM To Be Removed	Nonfriable Asbestos Material To Be Removed		Indicate Unit of Measurement Below		1. Regulated ACM to be Removed		Category I	Category II	Unit		2. Category 1 ACM to be Removed				Ln Ft:	Ln m:	3. Category II ACM to be Removed				Sq Ft:	Sq m:					Cu Ft:	Cu m:
VII. APPROXIMATE AMOUNT OF ASBESTOS, INCLUDING:	RACM To Be Removed	Nonfriable Asbestos Material To Be Removed		Indicate Unit of Measurement Below																													
1. Regulated ACM to be Removed		Category I	Category II	Unit																													
2. Category 1 ACM to be Removed				Ln Ft:	Ln m:																												
3. Category II ACM to be Removed				Sq Ft:	Sq m:																												
				Cu Ft:	Cu m:																												
VIII. SCHEDULED DATES ASBESTOS REMOVAL (MM/DD/YY) Start: Complete:																																	
IX. SCHEDULED DATES DEMO/RENOVATION (MM/DD/YY) Start: Complete:																																	
X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:																																	

NOTIFICATION OF DEMOLITION OR RENOVATION (continued)

XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION OR RENOVATION SITE <i>(attach work plan, if appropriate):</i>		
XII. WASTE TRANSPORTER #1		
Name:		
Address:		
City:	State:	Zip:
Contact Person:	Tel:	
WASTE TRANSPORTER #2		
Name:		
Address:		
City:	State:	Zip:
Contact Person:	Tel:	
XIII. WASTE DISPOSAL SITE		
Name:		
Address:		
City:	State:	Zip:
Tel:		
XIV. IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY PLEASE IDENTIFY THE AGENCY BELOW <i>(attach copy of demolition order):</i>		
Name:	Title	
Authority		
Date of Order (MM/DD/YY):	Date Ordered to Begin (MM/DD/YY):	
XV. FOR EMERGENCY RENOVATIONS		
Date and Hour of Emergency (MM/DD/YY):		
Description of the Sudden, Unexpected Event:		
Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden:		
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND, OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES FRIABLE:		
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUBPART M) WILL BE ON-SITE DURING ALL ASBESTOS ABATEMENT, AND EVIDENCE THAT THE REQUIRED CERTIFICATION ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION BY REGULATING AUTHORITIES DURING NORMAL BUSINESS HOURS.		
_____ (Signature of Owner/Operator)		_____ (Date)
XVIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT.		
_____ (Signature of Owner/Operator)		_____ (Date)

Any owner or operator of a demolition or renovation project which is subject to 40 CFR-61, Subpart M (NESHAPS) for asbestos and is required to submit a written notification of the demolition/renovation to the District shall submit with the notification form the following fee:

DEMOLITIONS – OR – RENOVATION PROJECTS\$200
ASBESTOS ABATEMENT with Demolition (Regulation IV, Rule 401, §1.1.2)\$200

If a Fire Department receives a fee or donation from the property owner of a structure that is to be used for fire training purposes, the demolition/renovation fees noted above shall apply. Otherwise, Fire Department training burns shall be exempted from fees as noted above.

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Work included in this Section:
 - 1. Provide rough carpentry items including but not necessarily limited to wood blocking, grounds, backing, stripping, nailers, structural framing, sheathing, rough hardware, and decay prevention.
- B. Related Work Specified Elsewhere:
 - 1. Division 3, Section "Cast in Place Concrete"
 - 2. Division 7, Section "Joint Sealants"
 - 3. Division 7, Section "Fiber Cement Siding & Composite Trim"
 - 4. Division 7, Section "Sheet Metal Flashing & Trim"
 - 5. Division 9, Exterior Finish Sections

1.3 INCORPORATED DOCUMENTS

- A. In addition to the Codes and Standards indicated in Division 1, the published Specifications, standards, tests, or recommended methods of the industry apply to the work of this Section where cited by abbreviations noted below:
 - 1. American Lumber Standards Committee (ALSC)
 - 2. American Plywood Association (APA)
 - 3. Pacific Lumber Inspection Bureau (PLIB)
 - 4. Redwood Inspection Service (RIS)
 - 5. United States Product Standard (PS)
 - 6. West Coast Lumber Inspection Bureau (WCLIB)

1.4 QUALITY ASSURANCE

- A. Treated Lumber: Pressure treatment shall not adversely affect application, permanence or appearance of finish paint systems. Provide each piece of treated lumber with the stamp of an approved independent agency operating under the observation of the ALSC.
- B. All pieces of lumber shall bear grade-trademark of appropriate grading agency and each sheet of plywood shall bear grade and trademark of APA.
- C. Reference Standard (unless otherwise noted), the following standards shall govern the work:
 - 1. All lumber: CBC 2016 Section 2303.1, DOC 20.

2. Plywood: CBC 2016 Section 2303.1.4, PS 1-95.
 3. "Timber Construction Standards" (AITC), latest edition.
 4. California Building Code, Chapter 23, latest locally adopted edition.
 5. "WCLIB" Westcoast Lumber Inspection Bureau.
- D. Testing and Inspection: At the direction of the Architect the owner's testing laboratory will test and report on the moisture content of all members at the time of delivery, and at close in. The laboratory will report to the contractor and the Architect, their findings immediately.

1.5 SUBMITTALS

- A. Submittals shall be in accordance with the Submittals Section 013300, and shall include manufacturer's literature describing products and samples only when requested by the Architect.
- B. Nails and Staples: Submit ICC reports and samples for all pneumatically driven-fasteners.
- C. Submit product catalogues and ICC reports for pre-manufactured and pre-engineered hangers, clips, ties, brackets, etc., to be used for connecting wood frame construction. Submit complete, accurate equivalence data when submitting equivalent products to those specified on the Drawings.
- D. Substitutions for products specified require conformance to substitution requirements in Division 1.
- E. Review of materials and hardware for substitution to products specified is at the additional expense to the Contractor.

1.6 JOB CONDITIONS

- A. Coordinate details with other work supporting, adjoining, or fastened to rough carpentry work.
- B. Environmental Requirements: All wood including forms, casual lumber, shavings and sawdust shall be removed from the site area and shall not be burned, buried or left on the site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Wood and wood products graded per "Standard Grading Rules No. 17", Latest Edition WCILB. All materials shall be new when incorporated into the Work. Grading for various members are indicated on the Drawings. All lumber and plywood as delivered to jobsite shall bear the stamp with a grade mark of the grading agency and appropriate grade stamp.
 1. All wood members in contact with concrete shall be No. 1 Douglas Fir; pressure treated with an approved preservative under the Treating and Quality Control requirements in CBC Section 2303.1.8.

2. Lumber shall be air or kiln dry to a maximum 19% moisture content when delivered to job site, furnished S4S, nominal sizes, noted and conforming to governing rules and standards unless otherwise noted. Lumber to be protected after delivery so as not to allow moisture content to increase.
 3. Stud Framing: 2" to 4" thick, 2" to 6" wide, Douglas Fir No. 1 grade or better.
 4. Structural Joists, Rafters, and other framing not listed above: 2" to 4" thick, 6" and wider, Douglas Fir No. 1 grade, 1500/Fb, or better. Headers: Douglas Fir, No 2 and better.
 5. Ceiling Joists (Load Bearing): Douglas Fir, No.1.
 6. Beams and Stringers: 5" and thicker, Douglas Fir, No. 1 Grade, 1300/Fb, or better.
 7. Posts and Timbers: 5" and larger, Douglas Fir, No. 1 Grade, 1200/Fb, or better.
 8. Plywood for Structural Application: APA Structural 1, C-D INT, 32/16, Exterior Grade Glue, PS 1-95.
 9. Sill Plates: Pressure Treated Douglas Fir.
- B. Hangar Wire: Galvanized steel wire conforming to (FS) QQ-W-46 If (1), Finish 5, Class 1, soft temper minimum 9 gauge, single strand.
- C. Rough hardware as required and suited for the work and acceptable to the Architect including, but not necessarily limited to the following more major items:
1. Nails: Common wire, flat head, diamond point, smooth bright (FS) FF-N-105.
 2. Bolts, Nuts, Lag Screws and Washers: Steel, ASTM A307.
 3. Power Driven Fasteners: Steel, same as noted on Drawings or others as approved.
 4. Inserts, for Items Secured to Concrete: Zinc treated steel threaded for machine bolts, sizes as noted and required.
 5. Exposed Exterior Nails or Screws: Aluminum or Stainless Steel only.
 6. Plywood Joint Clips: "H" shaped extruded aluminum alloy 1 3/16" long x 3/4" wide, thickness as required.
 7. Wood-to-Wood or Wood-to-Concrete Connectors: Connector assemblies shall be standard units as manufactured by Simpson Strong-Tie or equivalent, and shall be the specific model numbers listed on the Drawings. They shall be made of galvanized steel, die stamped, punched and / or welded in accordance with the manufacturer's standards. All such assemblies shall be delivered to the job site with manufacturer's identification. Any substitutes shall meet or exceed structural capabilities listed in the Simpson Strong Tie published literature, as certified by ICBO reports. Connectors shall not be bent or field modified unless specifically allowed by product literature.
- D. Pressure Treatment: Water borne salt preservative, non-corrosive, paintable, odorless; same as "Osmose K-33" (Chromated Copper Arsenate, Type B); or corresponding approved equivalent. Equivalents as listed in (FS) TT-W-571 are approved if substitution conforms to retentions of equal toxicity. All treated wood shall bear AWPB stamp.
- E. Adhesives: Pressure sensitive; same as 3M Co.'s "Contact Bond" or approved equivalent.

2.2 STRUCTURAL WOOD PANELS

- A. Plywood: All structural plywood shall be grade marked for conformance with CBC 2007 Section 2303.1.4, "Product Standard PS 1-95", and shall be fabricated with exterior glue. Grades shall be as required on the Drawings.

- B. Oriented Strand Board (OSB): APA grade stamped and manufactured with exterior glue may be substituted for plywood when grade stamps and thickness are equivalent in strength, stiffness, and quality to the plywood specified.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine areas to receive rough carpentry and verify that building components, surfaces, spacing, direction and details of supports are correct to accommodate installation of blocking, grounds, stripping, backing, framing, sheathing, etc. Do not begin work before unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Carpentry work shall be performed in accordance with the best standards of practice relating to the trade and under the constant supervision of a competent foreman who shall carefully plan and layout the work to carry out the intent of the Drawings and properly accommodate the work of other trades. All framing fastenings shall comply with the applicable Sections of all codes under which this work is performed.
- B. Sill Plates: Plates shall be accurately aligned, set in grout where indicated on the Drawings and secured with anchor bolts in accordance with structural details.
 - 1. Add sealant under exterior sill plate: 1/2" bead all purpose urethane sealant.
 - 2. 1/4" x 2" x 2" square washers shall be placed between plate and nut, securely tighten and again retightened immediately prior to becoming inaccessible.
- C. Framing: Framing members shall be accurately cut and fit into required locations, true to lines and levels as indicated and required and permanently secured in position with fastenings and /or fittings as detailed, or required by code provision.
 - 1. Except as otherwise noted, studs and furring strips shall be spaced at 16" on center.
 - 2. Stud partitions, walls or other framing containing plumbing, heating, conduit, etc., shall be framed to provide proper clearance for these items.
 - 3. Pipes exceeding 1/3 of plate width shall not be placed in partitions used as bearing or shear walls except in accordance with structural details.
 - 4. Stud walls shall present a plane surface with a tolerance not exceeding 1/8" in 10 feet, vertically and / or horizontally.
- D. Sheathing: Sheathing shall be applied with all joints cut over bearings with joints spaced and positioned as noted on Structural Drawings. Place plywood with face of grain perpendicular to framing unless shown otherwise.
- E. Cutting and Framing: Concealment and accommodations for mechanical and electrical work shall be provided under this Section.
- F. Boltings: Holes for bolts shall be drilled true to line and layout, 1/16" maximum larger than bolt hole diameter, provide washers with all nuts. Bolts shall be turned up tight at time of installation and again immediately prior to becoming inaccessible.

- G. Screws: Lag screws and wood screws shall be turned into place, fitted with washers. Bore hole same diameter as unthreaded shank of screw to a depth just short of root of the head. Driving of screws by hammering shall not be permitted.
- H. Nailing Blocks: Form to shape and dimensions noted and required and secure in place in firm manner.
- I. Blocking, Bridging, Ledgers, and Grounds: Stud walls shall be blocked with 2" material same width as studs spaced as shown and noted on Drawings. Joists shall be blocked with 2" materials of size shown and at spacing noted. Fire blocking shall be placed at each story height or 10 feet maximum on center.
- J. Cutting Joists: Cutting, notching and boring shall be limited to those areas specifically detailed in Drawings and approved by the Architect.
- K. Backing: Provide at all fixtures, accessories, etc., applied to walls, ceilings, and floors adequate for imposed loads. Material size shall be as required.
- L. Firestopping: Firestopping shall be provided to cut off all concealed draft openings (both vertical and horizontal) and shall form an effective barrier between wall cavities and roof space. It shall be used in specific locations, as follows:
 - 1. In exterior or interior stud walls, at ceilings and floor levels.
 - 2. In all stud walls and partitions, including furred spaces, so placed that the maximum dimension of any concealed space is not over 10 feet and at ceiling levels.
 - 3. Any other locations such as holes for pipes, shafting behind furring strips, stair stringers and similar places which could afford a passage for flames.
- M. Pressure Treated Lumber or Plywood:
 - 1. Treated wood, where cut, dried or notched, shall be treated with a preservative listed in paragraph 2.1 A.1. of this Section.
- N. Plywood Structural Sheathing:
 - 1. Plywood nailing shall be as required on the Drawings. Do not overdrive. (Do not break skin of plywood face sheet). Overdriving will be cause for rejection.
 - 2. Form plywood may be re-used for concealed sheathing provided the lumber at the time of re-use is approved by the Architect, meets the framing grade requirements specified herein, is in good condition, and is thoroughly cleaned with all nails removed.
 - 3. Pneumatic nailing devices shall be adjustable so that nail heads do not penetrate skin of plywood. Contractor shall submit equipment and nails for review prior to use.
- O. Roof and Floor Sheathing: Except "Panelized Roof", lay with face grain perpendicular to roof rafters, roof trusses or floor joists. Stagger plywood sheets. Block all unsupported sheet edges with 2x material unless otherwise noted.
- P. Wall Sheathing: Lay with face grain either parallel or perpendicular to studs. Exposed bottom edges shall be sealed as recommended by manufacturer. Block all unsupported sheet edges with 2x materials unless otherwise noted.
- Q. Panelized Roofs: Where plywood is set at 8'-0 1/8" spacing, cut every fourth sheet short by 1/2" to realign structural framing that has been specified to be spaced at even units of 2, 4, or 8 feet.

3.3 NAILING

A. General:

1. Use only common wire nails of the dimension shown on the Nailing Schedule, except where otherwise specifically noted in the Drawings. When nailing guns are employed, magazine type nails shall be of equivalent gauge of the required common nail. All machine nailing shall be reviewed by the Architect and Project Inspector. Nailing shall be performed by experienced operators. Nail head shall not be sunk below the face of sheathing.
2. For conditions not covered in the Nailing Schedule, provide penetration into the piece receiving the point of not less than 1/2 the length of the nail or spike. 16d nails may be used to connect two pieces of 2" (nominal) thickness.
3. Do all nailing without splitting wood, preboring as required. Replace all split members.

3.4 CLEAN UP

- #### **A.**
- Clean up shall be performed in accordance with Division 1, Section 017700.

END OF SECTION 061000

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes the following sheet metal flashing and trim:
 - 1. Roof edge, eave, and rake strip protection.
 - 2. Reglets and counter flashing.
 - 3. Aluminum gutters
 - 4. Galvanized Steel Schedule 40 downspouts.
 - 5. Splash pans.
 - 6. Seismic flashings.
 - 7. Parapet caps and flashings.
- B. Related Sections:
 - 1. All Division 7 Roofing Sections.
 - 2. Division 7, Section "Joint Sealants"
 - 3. Division 8, Section "Standard Steel Doors and Frames"
 - 4. Division 9, Section "Painting"

1.3 REFERENCES

- A. ASTM A446 – Steel Sheet, Zinc Coated (Galvanized) by the Hot Dip Process, Structural (Physical) Quality.
- B. ASTM A527 – Steel Sheet, Zinc Coated (Galvanized) by the Hot Dip Process, Lock Forming Quality.
- C. ASTM C920 – Elastomeric Joint sealant.
- D. FS SS-C-00153a – Cement, Bituminous, Plastic – Type 1.
- E. ASTM B 209-04 - Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- F. Architectural Sheet Metal Manual – Sheet Metal and Air Conditioning Contractor's Association, Inc. (SMACNA), Fifth Edition.

1.4 SHOP DRAWINGS

- A. See Division 1, "Submittal Procedures"
- B. Shop Drawing: Indicate material profile, jointing pattern, jointing details, fastening methods, flashing terminations, and installation details.

1.5 QUALITY ASSURANCE

- A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual". Conform to dimensions and profiles shown unless more stringent requirements are indicated.

1.6 QUALIFICATIONS

- A. Fabricator and Installer: Company specializing in sheet metal flashing work with five years documented experience.

1.7 DELIVERY, STORAGE AND PROTECTION

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

1.8 COORDINATION

- A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leak-proof, secure, and non-corrosive installation.
- B. Coordinate work of Roofing Sections with installation of flashing and gutters.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. Galvanized Steel: ASTM A446; Grade A, G90 zinc coating, 24 gauge minimum core steel. (to be used at areas as shown on Drawings to cover existing fascia)
- B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
 - 1. Factory Prime Coating: Where painting after installation is indicated, pretreat with white or light-colored, factory-applied, baked-on epoxy primer coat; minimum dry film thickness of 0.2 mil.

- C. Finishes: Apply Kynar 500 polyvinylidene fluoride finish to all galvanized steel off site prior to installation.

2.2 ACCESSORY MATERIALS AND COMPONENTS

- A. Downspouts & Offset Brackets: Shall be Schedule 40 galvanized steel with each miter and junction welded. Grind all welds flush, smooth and free of burrs. All downspouts shall be hot dipped galvanized, post fabrication.
- B. Fasteners: Concealed hook strip and continuous cleat type; of same material as flashings, sized to suit application. Color as selected by Architect.
- C. Sealant: Two component polyurethane, conforming to requirements of ASTM C920, Type M, Grade, NS, Class 25, non-staining, non-bleeding, non-sagging. Vulkem 922 or equivalent. Color as selected by Architect.

2.3 FABRICATION

- A. Fabricate metal flashing, coping, scuppers, gutters as indicated on drawings, and in accordance with SMACNA Architectural Sheet Manual.
- B. Form sections square, true, and accurate to size, free from distortion and other defects detrimental to appearance or performance.
 - 1. Gutters shall be continuous aluminum.
- C. All seams are to be butt type with back-up sleeve sealed with sealant except at corners. Fabricate corners minimum 18 x 18 inches mitered, soldered, or welded, and sealed as one piece.
- D. Wipe and wash clean, all soldered joints to remove traces of flux immediately after soldering.
- E. Hem exposed edges of flashings on underside ½”.
- F. Fabricate flashings to allow the toe to extend minimum of 2 inches horizontally over roofing and return brake edge.
- G. Back paint flashing with bituminous paint where expected to be in contact with cementitious materials or dissimilar metals and bituminous roofing.
- H. Fabricate metal downspouts as detailed, using Schedule 40 galvanized steel with threaded fittings.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, to verify actual locations, dimensions and other conditions affecting performance of work.
 - 1. Verify that conditions are in accordance with shop drawings.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install flashings and trim in accordance with SMACNA Architectural Sheet Metal Manual and as indicated on drawings.
- B. Supply reglets to respective trade for installation. Coordinate their correct placement.
- C. Secure flashings in place using specified type fasteners. Use exposed fasteners in location approved by Architect only. When using exposed fasteners, they are to be of same finish as flashings.
- D. Apply sealant at junction of metal flashings and asphalt felt flashings.
- E. Lock seams and end joints. Fit flashings tight in place. Make corners square, surfaces true and straight in all planes, and all lines accurate to profiles.
- F. Counter flash all mechanical and electrical items projecting through membrane roofing.
- G. Install gutters and downspouts in accordance with SMACNA Architectural Sheet Metal Manual.

3.3 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touch up or similar minor repair procedures.

END OF SECTION 076200

SECTION 230050 – MECHANICAL GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 RESPONSIBILITY

- A. Use only qualified persons experienced in the particular work described herein. Use only new materials of the best quality. Install all work in a neat and orderly manner. Coordinate this work with other portions of the project to result in complete operable systems

1.2 CONTRACT CONDITIONS

- A. Work of this Division is bound by the General Conditions, Supplementary Conditions, and Division 1 in addition to this specification and accompanying drawings

1.3 RESPONSIBILITY

- A. The contractor shall be responsible for staffing this division of work with qualified persons experienced in the particular work described herein. All material shall be new and of the best quality. All work shall be installed in a manner so as to result in a completed section of work with a neat and orderly appearance.

1.4 COORDINATION

- A. The Contractor shall coordinate work in Division 15 with work specified in other Divisions of the project to result in complete systems. Expense of changes required because of lack of supervision shall be borne by the Contractor. Such changes shall be to the satisfaction of the Architect.

1.5 WORK INCLUDED

- A. This division covers the work necessary for complete mechanical systems. Furnish materials, labor, and equipment together with all incidental items not shown or specified, which are required by code and good practices, to provide complete working systems. This work includes, but is not necessarily limited to:
 - 1. Mechanical and Plumbing Systems. Reference individual sections for the detailed scope of work.

1.6 SITE VISIT

- A. Examine the site of proposed work and become familiar with job conditions affecting the work. No additional allowance will be granted due to failure to discover site conditions which affect the work.

1.7 CONTRACT DRAWINGS

- A. The plans and specifications are diagrammatic in nature and do not represent exact locations or distances except where specifically noted. Include all required offsets, bends, and other special fittings. Coordinate with the other building trades and make modifications required at no extra costs.
- B. The plans showing existing mechanical systems in areas to be remodeled show the systems as illustrated in the best available as-built documents and on limited field inspection of the site by the Engineer. Inspect and field-verify actual existing conditions. The plans reflect the desired new configurations. Include all required modifications to implement the new configuration at no extra cost.
- C. Location of equipment on Drawings is approximate. Plan exact location with respect to architectural drawings, measurements on the job, and work of other trades prior to work. If measurements differ slightly, modify work as required. If measurements differ substantially, notify General Contractor prior to fabrication and installation.

1.8 SUBSTITUTIONS AND SUBMITTALS

- A. Provide submittals of all equipment and materials described in the equipment schedules as shown on the drawings. Provide wiring and/or piping diagrams for all control systems. Submittal data must be sufficient to verify complete compliance with the plans and specifications. Provide complete data even if using materials specified. Submittals shall conform to the General Conditions and be submitted in one package to expedite the review process.
- B. Provide shop drawings for all fabricated equipment.
- C. Submit all proposed deviations from the plans and specifications in material type, size, configuration, quantity, or routing for Engineer's review.
- D. Manufacturers and catalog/model numbers listed indicate quality of equipment or materials. Manufacturers not listed require prior approval. Substitution requests must be made in writing to the Architect prior to the bid in accordance with the General Requirements. Provide sufficient information indicating compliance with these specifications.
- E. Submittal review is for the purpose of determining general conformance with the intent of the plans and specifications. The favorable review of part of or all of the submittal does not relieve the contractor of any responsibility for compliance with the contract documents.

1.9 AS-BUILT DRAWINGS

- A. Provide and keep up-to-date, a complete set of prints which shall be regularly corrected, and show every change from the original contract drawings. Include change orders. Deliver as-built set to the Engineer upon project completion and acceptance.

Include dimensions, exact locations, and invert elevations of all exterior underground piping.

1.10 SEISMIC CONSTRUCTION

- A. All devices and systems shall be anchored using seismic restraint systems and devices, sized to match component weights. Securely attach all equipment, ductwork, piping, etc. to the building as detailed in the related construction code, or as described in these plans and specifications. Allow for expansion and contractions.
- B. Where anchorage details are not shown on the drawings the field installation shall be subject to the approval of the mechanical engineer and the field engineer of the office of the state architect.

1.11 DEMOLITION AND REMOVAL

- A. Demolish and remove from site all portions of the mechanical systems not specifically required for the intended operation of the systems and equipment described herein.

1.12 TEMPORARY SERVICES

- A. Provide in accordance with the General Requirements as required for the completion of the work. If permanent system is used for heating, provide filters of same type as used in permanent system. Replace with new filters at time of Substantial Completion.

1.13 COMPLETION

- A. When installation is complete and cleaning and adjustments specified herein have been made, operate system to demonstrate to Architect that system is complete and operating in conformance with these specifications.
- B. Work hereunder will not be inspected for final acceptance until operating and maintenance data, test and balance report, and record drawings have been approved.

PART 2 PRODUCTS

1.14 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle materials and equipment in a manner to prevent damage and deterioration. Store in original container. Indoor units, if stored outside, must be covered.

1.15 MATERIALS

- A. All materials employed in permanent construction shall be new, full weight, in first class condition and suitable for space provided. All similar materials shall be of one manufacturer. No used materials other than equipment shown as "Existing Relocate" (ER) may be installed.
- B. Do not install materials received in a damaged condition or damaged at the job-site. Return all damaged components. Repair of minor and incidental damage, if first approved by the Engineer and manufacturer, is acceptable.
- C. If approved mechanical equipment of other manufacturer requires modifications or additions to any work as shown on drawings, the Mechanical Contractor shall arrange and pay for costs of such changes and any engineering required as part of this work.

PART 3 EXECUTION

1.16 CUTTING AND PATCHING

- A. Make cuts and patches required to install the work according to good construction practice. Modification of existing structural building components shall be made only with the Engineer's specific written approval.
- B. Do not cover concealed ductwork, or other systems installed under this Division until inspected and approved by the Engineer and all other required construction inspectors. If systems are covered before inspection and approval, Contractor will remove covering and replace after inspection at no extra cost.

1.17 ACCESS TO EQUIPMENT AND ACCESSORIES

- A. Install equipment with adequate access for service. Provide access doors where shown or required for access to valves, P-traps, cleanouts, dampers, motors, etc. Type, size, and location of access doors shall be coordinated with Architect prior to work.

1.18 CLEANING SYSTEMS

- A. After all equipment, fixtures, pipes, and duct systems are installed, system shall be thoroughly cleaned. Remove all stickers and tags from equipment or fixtures. Clean all piping system prior to installation of insulation or painting.
- B. Repair or replace any discoloration or damage to system, building finish, or furnishings resulting from Contractor's failure to properly clean the system.

1.19 TESTING

- A. When systems are complete, performance test all mechanical systems at one time to the Engineer's satisfaction. No system will be accepted until it proves satisfactory in every detail. Provide 72 hours' notice before testing.

1.20 TRAINING, OPERATION, AND MAINTENANCE

- A. Submit four bound sets of Operation and Maintenance manuals to the Owner. Submit a draft copy to the Engineer for approval prior to issuing the final copies. The O&M manuals shall include, at a minimum:
 - B. All available manufacturer's O&M literature, parts lists, etc.
 - C. Wiring diagrams
 - D. Controls diagrams of all pneumatic, electrical, and electronic control systems
 - E. Written sequence of operations of all controls
 - F. Any unusual or unique system O&M procedures not covered by manufacturer's literature.
 - G. Summary maintenance schedule showing maintenance intervals as recommended by the manufacturers (lubrication, filter changes, etc.).
 - H. The Contractor is obligated to meet the guarantee requirements of the General Conditions.
 - I. After all mechanical systems have been tested and accepted, provide at least 1 hour training to the Owner's mechanical crew. Cover operating and maintenance procedures for all plumbing systems and components installed.

END OF SECTION 230050

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SECTION 231123 - FACILITY NATURAL-GAS PIPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Pipes, tubes, and fittings.
 - 2. Piping specialties.
 - 3. Piping and tubing joining materials.
 - 4. Valves.
 - 5. Pressure regulators.

1.2 PERFORMANCE REQUIREMENTS

- A. Minimum Operating-Pressure Ratings:
 - 1. Piping and Valves: 100 psig minimum unless otherwise indicated.
 - 2. Service Regulators: 65 psig minimum unless otherwise indicated.
- B. Natural-Gas System Pressure within Buildings: 0.5 psig.

1.3 ACTION SUBMITTALS

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

PART 2 - PRODUCTS

2.1 PIPES, TUBES, AND FITTINGS

- A. Steel Pipe: ASTM A 53/A 53M, black steel, Schedule 40, Type E or S, Grade B.
 - 1. Malleable-Iron Threaded Fittings: ASME B16.3, Class 150, standard pattern.
 - 2. Wrought-Steel Welding Fittings: ASTM A 234/A 234M for butt welding and socket welding.
 - 3. Unions: ASME B16.39, Class 150, malleable iron with brass-to-iron seat, ground joint, and threaded ends.
 - 4. Protective Coating for Underground Piping: Factory-applied, three-layer coating of epoxy, adhesive, and PE.
 - a. Joint Cover Kits: Epoxy paint, adhesive, and heat-shrink PE sleeves.

2.2 PIPING SPECIALTIES

- A. Appliance Flexible Connectors:

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1. Indoor, Fixed-Appliance Flexible Connectors: Comply with ANSI Z21.24.
2. Indoor, Movable-Appliance Flexible Connectors: Comply with ANSI Z21.69.
3. Outdoor, Appliance Flexible Connectors: Comply with ANSI Z21.75.
4. Corrugated stainless-steel tubing with polymer coating.
5. Operating-Pressure Rating: 0.5 psig.
6. End Fittings: Zinc-coated steel.
7. Threaded Ends: Comply with ASME B1.20.1.
8. Maximum Length: 72 inches.

2.3 JOINING MATERIALS

- A. Joint Compound and Tape: Suitable for natural gas.

2.4 MANUAL GAS SHUTOFF VALVES

- A. General Requirements for Metallic Valves, NPS 2 and Smaller: Comply with ASME B16.33.
1. CWP Rating: 125 psig.
 2. Threaded Ends: Comply with ASME B1.20.1.
 3. Dryseal Threads on Flare Ends: Comply with ASME B1.20.3.
 4. Tamperproof Feature: Locking feature for valves indicated in "Underground Manual Gas Shutoff Valve Schedule" and "Aboveground Manual Gas Shutoff Valve Schedule" Articles.
 5. Listing: Listed and labeled by an NRTL acceptable to authorities having jurisdiction for valves 1 inch and smaller.
 6. Service Mark: Valves 1-1/4 inches to NPS 2 shall have initials "WOG" permanently marked on valve body.
- B. One-Piece, Bronze Ball Valve with Bronze Trim: MSS SP-110.
1. Body: Bronze, complying with ASTM B 584.
 2. Ball: Chrome-plated brass.
 3. Stem: Bronze; blowout proof.
 4. Seats: Reinforced TFE; blowout proof.
 5. Packing: Separate packnut with adjustable-stem packing threaded ends.
 6. Ends: Threaded, flared, or socket as indicated in "Underground Manual Gas Shutoff Valve Schedule" and "Aboveground Manual Gas Shutoff Valve Schedule" Articles.
 7. CWP Rating: 600 psig.
 8. Listing: Valves NPS 1 and smaller shall be listed and labeled by an NRTL acceptable to authorities having jurisdiction.
 9. Service: Suitable for natural-gas service with "WOG" indicated on valve body.
- C. Bronze Plug Valves: MSS SP-78.
1. Body: Bronze, complying with ASTM B 584.
 2. Plug: Bronze.

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3. Ends: Threaded, socket, as indicated in "Underground Manual Gas Shutoff Valve Schedule" and "Aboveground Manual Gas Shutoff Valve Schedule" Articles.
4. Operator: Square head or lug type with tamperproof feature where indicated.
5. Pressure Class: 125 psig.
6. Listing: Valves NPS 1 and smaller shall be listed and labeled by an NRTL acceptable to authorities having jurisdiction.
7. Service: Suitable for natural-gas service with "WOG" indicated on valve body.

D. Valve Boxes:

1. Cast-iron, two-section box.
2. Top section with cover with "GAS" lettering.
3. Bottom section with base to fit over valve and barrel a minimum of 5 inches in diameter.
4. Adjustable cast-iron extensions of length required for depth of bury.
5. Include tee-handle, steel operating wrench with socket end fitting valve nut or flat head, and with stem of length required to operate valve.

2.5 PRESSURE REGULATORS

A. General Requirements:

1. Single stage and suitable for natural gas.
2. Steel jacket and corrosion-resistant components.
3. Elevation compensator.
4. End Connections: Threaded for regulators NPS 2 and smaller.

B. Line Pressure Regulators: Comply with ANSI Z21.80.

1. Body and Diaphragm Case: Cast iron or die-cast aluminum.
2. Springs: Zinc-plated steel; interchangeable.
3. Diaphragm Plate: Zinc-plated steel.
4. Seat Disc: Nitrile rubber resistant to gas impurities, abrasion, and deformation at the valve port.
5. Orifice: Aluminum; interchangeable.
6. Seal Plug: Ultraviolet-stabilized, mineral-filled nylon.
7. Single-port, self-contained regulator with orifice no larger than required at maximum pressure inlet, and no pressure sensing piping external to the regulator.
8. Pressure regulator shall maintain discharge pressure setting downstream, and not exceed 150 percent of design discharge pressure at shutoff.
9. Overpressure Protection Device: Factory mounted on pressure regulator.
10. Atmospheric Vent: Factory- or field-installed, stainless-steel screen in opening if not connected to vent piping.

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PART 3 - EXECUTION

3.1 OUTDOOR PIPING INSTALLATION

- A. Comply with **NFPA 54** for installation and purging of natural-gas piping.
- B. Install underground, natural-gas piping buried at least 36 inches below finished grade. Comply with requirements in Section 312000 "Earth Moving" for excavating, trenching, and backfilling.
 - 1. If natural-gas piping is installed less than 36 inches below finished grade, install it in containment conduit.
- C. Install fittings for changes in direction and branch connections.

3.2 INDOOR PIPING INSTALLATION

- A. Comply with NFPA 54 for installation and purging of natural-gas piping.
- B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements are used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- C. Arrange for pipe spaces, chases, slots, sleeves, and openings in building structure during progress of construction, to allow for mechanical installations.
- D. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- E. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- F. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- G. Locate valves for easy access.
- H. Install natural-gas piping at uniform grade of 2 percent down toward drip and sediment traps.
- I. Install piping free of sags and bends.
- J. Install fittings for changes in direction and branch connections.
- K. Verify final equipment locations for roughing-in.
- L. Comply with requirements in Sections specifying gas-fired appliances and equipment for roughing-in requirements.

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- M. Drips and Sediment Traps: Install drips at points where condensate may collect, including service-meter outlets. Locate where accessible to permit cleaning and emptying. Do not install where condensate is subject to freezing.
 - 1. Construct drips and sediment traps using tee fitting with bottom outlet plugged or capped. Use nipple a minimum length of 3 pipe diameters, but not less than 3 inches long and same size as connected pipe. Install with space below bottom of drip to remove plug or cap.
- N. Extend relief vent connections for service regulators, line regulators, and overpressure protection devices to outdoors and terminate with weatherproof vent cap.
- O. Conceal pipe installations in walls, pipe spaces, utility spaces, above ceilings, below grade or floors, and in floor channels unless indicated to be exposed to view.
- P. Use eccentric reducer fittings to make reductions in pipe sizes. Install fittings with level side down.
- Q. Connect branch piping from top or side of horizontal piping.
- R. Install unions in pipes NPS 2 and smaller, adjacent to each valve, at final connection to each piece of equipment.
- S. Do not use natural-gas piping as grounding electrode.
- T. Install strainer on inlet of each line-pressure regulator and automatic or electrically operated valve.
- U. Install sleeves for piping penetrations of walls, ceilings, and floors.

3.3 VALVE INSTALLATION

- A. Install manual gas shutoff valve for each gas appliance ahead of corrugated stainless-steel tubing or copper connector.
- B. Install underground valves with valve boxes.
- C. Install regulators and overpressure protection devices with maintenance access space adequate for servicing and testing.

3.4 PIPING JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Threaded Joints:
 - 1. Thread pipe with tapered pipe threads complying with ASME B1.20.1.

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2. Cut threads full and clean using sharp dies.
 3. Ream threaded pipe ends to remove burrs and restore full inside diameter of pipe.
 4. Apply appropriate tape or thread compound to external pipe threads unless dryseal threading is specified.
 5. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- D. Braze Joints: Construct joints according to AWS's "Braze Handbook," "Pipe and Tube" Chapter.
- E. Flared Joints: Cut tubing with roll cutting tool. Flare tube end with tool to result in flare dimensions complying with SAE J513. Tighten finger tight, then use wrench. Do not overtighten.
- F. PE Piping Heat-Fusion Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join according to ASTM D 2657.
1. Plain-End Pipe and Fittings: Use butt fusion.
 2. Plain-End Pipe and Socket Fittings: Use socket fusion.

3.5 HANGER AND SUPPORT INSTALLATION

- A. Install seismic restraints on piping. Comply with requirements for seismic-restraint devices specified in Section 230548 "Vibration and Seismic Controls for HVAC."
- B. Comply with requirements for pipe hangers and supports specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment."
- C. Install hangers for horizontal steel piping with the following maximum spacing and minimum rod sizes:
1. NPS 1 and Smaller: Maximum span, 96 inches; minimum rod size, 3/8 inch.
 2. NPS 1-1/4: Maximum span, 108 inches; minimum rod size, 3/8 inch.
 3. NPS 1-1/2 and NPS 2: Maximum span, 108 inches; minimum rod size, 3/8 inch.
- D. Install hangers for horizontal, corrugated stainless-steel tubing with the following maximum spacing and minimum rod sizes:
1. NPS 3/8: Maximum span, 48 inches; minimum rod size, 3/8 inch.
 2. NPS 1/2: Maximum span, 72 inches; minimum rod size, 3/8 inch.
 3. NPS 3/4 and Larger: Maximum span, 96 inches; minimum rod size, 3/8 inch.

3.6 CONNECTIONS

- A. Connect to utility's gas main according to utility's procedures and requirements.

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- B. Install natural-gas piping electrically continuous, and bonded to gas appliance equipment grounding conductor of the circuit powering the appliance according to NFPA 70.
- C. Install piping adjacent to appliances to allow service and maintenance of appliances.
- D. Connect piping to appliances using manual gas shutoff valves and unions. Install valve within 72 inches of each gas-fired appliance and equipment. Install union between valve and appliances or equipment.
- E. Sediment Traps: Install tee fitting with capped nipple in bottom to form drip, as close as practical to inlet of each appliance.

3.7 LABELING AND IDENTIFYING

- A. Comply with requirements in Section 230553 "Identification for HVAC Piping and Equipment" for piping and valve identification.
- B. Install detectable warning tape directly above gas piping, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.8 FIELD QUALITY CONTROL

- A. Test, inspect, and purge natural gas according to NFPA 54 and authorities having jurisdiction.
- B. Natural-gas piping will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

3.9 OUTDOOR PIPING SCHEDULE

- A. Underground natural-gas piping shall be the following:
 - 1. PE pipe and fittings joined by heat fusion; service-line risers with tracer wire terminated in an accessible location.
- B. Aboveground natural-gas piping shall be the following:
 - 1. Steel pipe with malleable-iron fittings and threaded joints.

3.10 INDOOR PIPING SCHEDULE

- A. Aboveground, branch piping shall be the following:
 - 1. Corrugated stainless-steel tubing with mechanical fittings having socket or threaded ends to match adjacent piping.
 - 2. Steel pipe with malleable-iron fittings and threaded joints.

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B. Aboveground, distribution piping shall be on of the following:

1. Steel pipe with malleable-iron fittings and threaded joints.
2. Steel pipe with wrought-steel fittings and welded joints.

3.11 ABOVEGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE

A. Distribution piping valves for pipe sizes NPS 2 and smaller shall be one of the following:

1. One-piece, bronze ball valve with bronze trim.
2. Two-piece, **[full] [regular]**-port, bronze ball valves with bronze trim.
3. Bronze plug valve.

B. Valves in branch piping for single appliance shall be **[one of]** the following:

1. One-piece, bronze ball valve with bronze trim.
2. Two-piece, **[full] [regular]**-port, bronze ball valves with bronze trim.
3. Bronze plug valve.

END OF SECTION 231123

SECTION 233300 - AIR DUCT ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Backdraft and pressure relief dampers.
2. Manual volume dampers.
3. Control dampers.
4. Fire dampers.
5. Smoke dampers.
6. Flange connectors.
7. Turning vanes.
8. Duct-mounted access doors.
9. Flexible connectors.

B. Related Requirements:

1. Section 233723 "HVAC Gravity Ventilators" for roof-mounted ventilator caps.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For duct accessories. Include plans, elevations, sections, details and attachments to other work.

1. Detail duct accessories fabrication and installation in ducts and other construction. Include dimensions, weights, loads, and required clearances; and method of field assembly into duct systems and other construction. Include the following:
 - a. Special fittings.
 - b. Manual volume damper installations.
 - c. Control-damper installations.
 - d. Fire-damper and smoke-damper installations, including sleeves; and duct-mounted access doors.
 - e. Wiring Diagrams: For power, signal, and control wiring.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

PART 2 - PRODUCTS

2.1 ASSEMBLY DESCRIPTION

- A. Comply with NFPA 90A, "Installation of Air Conditioning and Ventilating Systems," and with NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems."
- B. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.

2.2 MATERIALS

- A. Galvanized Sheet Steel: Comply with ASTM A 653/A 653M.
 - 1. Galvanized Coating Designation: G60 (Z180).
 - 2. Exposed-Surface Finish: Mill phosphatized.
- B. Stainless-Steel Sheets: Comply with ASTM A 480/A 480M, Type 304, and having a No. 2 finish for concealed ducts and finish for exposed ducts.
- C. Reinforcement Shapes and Plates: Galvanized-steel reinforcement where installed on galvanized sheet metal ducts; compatible materials for aluminum and stainless-steel ducts.
- D. Tie Rods: Galvanized steel, 1/4-inch (6-mm) minimum diameter for lengths 36 inches (900 mm) or less; 3/8-inch (10-mm) minimum diameter for lengths longer than 36 inches (900 mm).

2.3 BACKDRAFT AND PRESSURE RELIEF DAMPERS

- A. Description: Gravity balanced.
- B. Maximum Air Velocity: 1000 fpm (5.1 m/s).
- C. Maximum System Pressure: 1-inch wg (0.25 kPa).
- D. Frame: Hat-shaped, 0.05-inch- (1.3-mm-) thick, galvanized sheet steel, with welded corners or mechanically attached.
- E. Blades: Multiple single-piece blades, center pivoted, maximum 6-inch (150-mm) width, with sealed edges.
- F. Blade Action: Parallel.

- G. Blade Seals: Neoprene, mechanically locked.
- H. Blade Axles:
 - 1. Material: Galvanized steel.
 - 2. Diameter: 0.20 inch.
- I. Tie Bars and Brackets: Galvanized steel.
- J. Return Spring: Adjustable tension.
- K. Bearings: Steel ball or synthetic pivot bushings.
- L. Accessories:
 - 1. Adjustment device to permit setting for varying differential static pressure.
 - 2. Counterweights and spring-assist kits for vertical airflow installations.
 - 3. Electric actuators.
 - 4. Chain pulls.
 - 5. Screen Mounting: Front mounted in sleeve.
 - a. Sleeve Thickness: 20 gage minimum.
 - b. Sleeve Length: 6 inches minimum.
 - 6. Screen Mounting: Rear mounted.
 - 7. Screen Material: Aluminum.
 - 8. Screen Type: Insect.
 - 9. 90-degree stops.

2.4 MANUAL VOLUME DAMPERS

- A. Standard, Steel, Manual Volume Dampers:
 - 1. Standard leakage rating, with linkage outside airstream.
 - 2. Suitable for horizontal or vertical applications.
 - 3. Frames:
 - a. Frame: Hat-shaped, 0.094-inch-thick, galvanized sheet steel.
 - b. Mitered and welded corners.
 - c. Flanges for attaching to walls and flangeless frames for installing in ducts.
 - 4. Blades:

- a. Multiple or single blade.
 - b. Parallel- or opposed-blade design.
 - c. Stiffen damper blades for stability.
 - d. Galvanized-steel, 0.064 inchm) thick.
- 5. Blade Axles: Galvanized steel.
- 6. Bearings:
 - a. Oil-impregnated bronze.
 - b. Dampers in ducts with pressure classes of 3-inch wg (750 Pa) or less shall have axles full length of damper blades and bearings at both ends of operating shaft.
- 7. Tie Bars and Brackets: Galvanized steel.
- B. Jackshaft:
 - 1. Size: 0.5-inch diameter.
 - 2. Material: Galvanized-steel pipe rotating within pipe-bearing assembly mounted on supports at each mullion and at each end of multiple-damper assemblies.
 - 3. Length and Number of Mountings: As required to connect linkage of each damper in multiple-damper assembly.
- C. Damper Hardware:
 - 1. Zinc-plated, die-cast core with dial and handle made of 3/32-inch-thick zinc-plated steel, and a 3/4-inch hexagon locking nut.
 - 2. Include center hole to suit damper operating-rod size.
 - 3. Include elevated platform for insulated duct mounting.

2.5 FLEXIBLE CONNECTORS

- A. Materials: Flame-retardant or noncombustible fabrics.
- B. Coatings and Adhesives: Comply with UL 181, Class 1.
- C. Metal-Edged Connectors: Factory fabricated with a fabric strip 3-1/2 inches wide attached to two strips of 2-3/4-inch-wide, 0.028-inch- thick, galvanized sheet steel or 0.032-inch-thick aluminum sheets. Provide metal compatible with connected ducts.
- D. Indoor System, Flexible Connector Fabric: Glass fabric double coated with neoprene.
 - 1. Minimum Weight: 26 oz./sq. yd..
 - 2. Tensile Strength: 480 lbf/inch in the warp and 360 lbf/inch in the filling.
 - 3. Service Temperature: Minus 40 to plus 200 deg F.

- E. Outdoor System, Flexible Connector Fabric: Glass fabric double coated with weatherproof, synthetic rubber resistant to UV rays and ozone.
 - 1. Minimum Weight: 24 oz./sq. yd.
 - 2. Tensile Strength: 530 lbf/inch in the warp and 440 lbf/inch in the filling.
 - 3. Service Temperature: Minus 50 to plus 250 deg F.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install duct accessories according to applicable details in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for metal ducts and in NAIMA AH116, "Fibrous Glass Duct Construction Standards," for fibrous-glass ducts.
- B. Install duct accessories of materials suited to duct materials; use galvanized-steel accessories in galvanized-steel and fibrous-glass ducts, stainless-steel accessories in stainless-steel ducts, and aluminum accessories in aluminum ducts.
- C. Install backdraft dampers at inlet of exhaust fans or exhaust ducts as close as possible to exhaust fan unless otherwise indicated.
- D. Install volume dampers at points on supply, return, and exhaust systems where branches extend from larger ducts. Where dampers are installed in ducts having duct liner, install dampers with hat channels of same depth as liner, and terminate liner with nosing at hat channel.
 - 1. Install steel volume dampers in steel ducts.
 - 2. Install aluminum volume dampers in aluminum ducts.
- E. Set dampers to fully open position before testing, adjusting, and balancing.
- F. Install test holes at fan inlets and outlets and elsewhere as indicated.
- G. Install fire and smoke dampers according to UL listing.
- H. Install flexible connectors to connect ducts to equipment.
- I. Connect flexible ducts to metal ducts with draw bands and approved mastic.
- J. Install duct test holes where required for testing and balancing purposes.

3.2 FIELD QUALITY CONTROL

- A. Tests and Inspections:
 - 1. Operate dampers to verify full range of movement.

2. Inspect locations of access doors and verify that purpose of access door can be performed.
3. Operate fire and smoke dampers to verify full range of movement and verify that proper heat-response device is installed.
4. Inspect turning vanes for proper and secure installation.

END OF SECTION 233300

SECTION 233713 - DIFFUSERS, REGISTERS, AND GRILLES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Rectangular and square ceiling diffusers.
 - 2. Louver face diffusers.
 - 3. Adjustable bar registers and grilles.
 - 4. Fixed face registers and grilles.
- B. Related Sections:
 - 1. Section 233300 "Air Duct Accessories" for fire and smoke dampers and volume-control dampers not integral to diffusers, registers, and grilles.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated, include the following:
 - 1. Data Sheet: Indicate materials of construction, finish, and mounting details; and performance data including throw and drop, static-pressure drop, and noise ratings.
 - 2. Diffuser, Register, and Grille Schedule: Indicate drawing designation, room location, quantity, model number, size, and accessories furnished.
- B. Samples: For each exposed product and for each color and texture specified.

PART 2 - PRODUCTS

- A. As noted on drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install diffusers, registers, and grilles level and plumb.
- B. Ceiling-Mounted Outlets and Inlets: Drawings indicate general arrangement of ducts, fittings, and accessories. Air outlet and inlet locations have been indicated to achieve design requirements for air volume, noise criteria, airflow pattern, throw, and pressure drop. Make final locations where indicated, as much as practical. For units installed in lay-in ceiling panels, locate units in the center of panel. Where architectural features or other items conflict with installation, notify Architect for a determination of final location.
- C. Install diffusers, registers, and grilles with airtight connections to ducts and to allow service and maintenance of dampers, air extractors, and fire dampers.

3.2 ADJUSTING

- A. After installation, adjust diffusers, registers, and grilles to air patterns indicated, or as directed, before starting air balancing.

END OF SECTION 233713

SECTION 235400 - FURNACES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Gas-fired, condensing furnaces and accessories complete with controls.

1.2 ACTION SUBMITTALS

- A. Product Data: Include rated capacities, operating characteristics, furnished specialties, and accessories for each of the following:
 - 1. Furnace.
 - 2. Thermostat.
 - 3. Air filter.

1.3 INFORMATIONAL SUBMITTALS

- A. Warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."
- C. ASHRAE/IESNA 90.1 Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6 - "Heating, Ventilating, and Air-Conditioning."
- D. Comply with NFPA 70.

1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace the following components of furnaces that fail in materials or workmanship within specified warranty period:

1. Warranty Period, Commencing on Date of Substantial Completion:
 - a. Furnace Heat Exchanger: **10 years**.
 - b. Integrated Ignition and Blower Control Circuit Board: **One year**.
 - c. Draft-Inducer Motor: **One year**.

PART 2 - PRODUCTS

2.1 GAS-FIRED FURNACES, CONDENSING

- A. Basis-of-Design Product: Provide the product indicated on drawings.
- B. General Requirements for Gas-Fired, Condensing Furnaces: Factory assembled, piped, wired, and tested; complying with ANSI Z21.47/CSA 2.3, "Gas-Fired Central Furnaces," and with NFPA 54.
- C. Cabinet: Steel.
 1. Cabinet interior around heat exchanger shall be factory-installed insulation.
 2. Lift-out panels shall expose burners and all other items requiring access for maintenance.
 3. Factory paint external cabinets in manufacturer's standard color.
 4. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.
- D. Fan: Centrifugal, factory balanced, resilient mounted, direct drive.
 1. Fan Motors: DC Brushless Electrically Commutated motor.
 2. Special Motor Features: Electronically controlled motor (ECM) controlled by integrated furnace/blower control.
- E. Type of Gas: Natural Gas.
- F. Heat Exchanger:
 1. Primary: Aluminized steel.
- G. Burner:
 1. Gas Valve: 100 percent safety main gas valve, main shutoff valve, pressure regulator, safety pilot with electronic flame sensor, limit control, transformer, and combination ignition/fan timer control board.
 2. Ignition: Electric pilot ignition, with hot-surface igniter or electric spark ignition.
- H. Gas-Burner Safety Controls:
 1. Electronic Flame Sensor: Prevents gas valve from opening until pilot flame is proven; stops gas flow on ignition failure.
 2. Flame Rollout Switch: Installed on burner box; prevents burner operation.
 3. Limit Control: Fixed stop at maximum permissible setting; de-energizes burner on excessive bonnet temperature; automatic reset.

- I. Combustion-Air Inducer: Centrifugal fan with thermally protected motor and sleeve bearings prepurges heat exchanger and vents combustion products; pressure switch prevents furnace operation if combustion-air inlet or flue outlet is blocked.
- J. Furnace Controls: Solid-state board integrates ignition, heat, cooling, and fan speeds; adjustable fan-on and fan-off timing; terminals for connection to accessories.
- K. Accessories:
 - 1. Combination Combustion-Air Intake and Vent: PVC plastic fitting to combine combustion-air inlet and vent through roof.
 - 2. PVC Plastic Vent Materials:
 - a. PVC Plastic Pipe: Schedule 40, complying with ASTM D 1785.
 - b. PVC Plastic Fittings: Schedule 40, complying with ASTM D 2466, socket type.
 - c. PVC Solvent Cement: ASTM D 2564.
 - 1) PVC solvent cement shall have a VOC content of 510 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2) Adhesive primer shall have a VOC content of 550 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 3) Solvent cement and adhesive primer shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- L. Capacities and Characteristics:
 - a. As described on drawings.

2.2 THERMOSTATS

- A. Controls shall comply with requirements in ASHRAE/IESNA 90.1, "Controls."
- B. Solid-State Thermostat: Wall-mounting, programmable, microprocessor-based unit with manual switching from heating to cooling, preferential rate control, seven-day programmability with minimum of four temperature presets per day, vacation mode, and battery backup protection against power failure for program settings.
- C. Provide all occupancy setback and fan control features as described and required by California Energy Commission

2.3 AIR FILTERS

- A. Disposable Filters: 1-inch- (25-mm-) thick fiberglass media with ASHRAE 52.2 MERV rating of 6 or higher in sheet metal frame.

- B. Charged Media Air Filters: Sheet metal housing arranged to be ducted in return-air duct connection to furnace, generates electrostatic charge; MERV 10 rating.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install gas-fired furnaces and associated fuel and vent features and systems according to NFPA 54.
- B. Suspended Units: Suspend from structure using threaded rods, spring hangers, and building attachments. Secure rods to unit hanger attachments. Adjust hangers so unit is level and plumb.
 - 1. Install seismic restraints to limit movement of furnace by resisting code-required seismic acceleration.
- C. Base-Mounted Units: Secure units to substrate. Provide optional bottom closure base if required by installation conditions.
 - 1. Anchor furnace to substrate to resist code-required seismic acceleration.
- D. Controls: Install thermostats and humidistats at mounting height of 60 inches (1500 mm) above floor.
- E. Wiring Method: Install control wiring in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Conceal control wiring except in unfinished spaces.

3.2 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties. Connect gas piping with union or flange and appliance connector valve.
- B. Install piping adjacent to equipment to allow service and maintenance.
- C. Vent and Outside-Air Connection, Condensing, Gas-Fired Furnaces: Connect plastic piping vent material to furnace connections and extend outdoors. Terminate vent outdoors with a cap and in an arrangement that will protect against entry of birds, insects, and dirt.
 - 1. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
 - 2. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
 - 3. Plastic Piping Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
 - a. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.

- b. PVC Pressure Piping: Join schedule number ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D 2855.
 - c. Requirements for Low-Emitting Materials:
 - 1) PVC solvent cement shall have a VOC content of 510 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2) Adhesive primer shall have a VOC content of 550 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 3) Solvent cement and adhesive primer shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- 4. Slope pipe vent back to furnace or to outside terminal.
- D. Connect ducts to furnace with flexible connector. Comply with requirements in Section 233300 "Air Duct Accessories."
- E. Complete installation and startup checks and start units according to manufacturer's written instructions.
- F. Verify proper operation of capacity control device.
- G. Adjust airflow and initial temperature and humidity set points.
- H. Set controls, burner, and other adjustments for optimum heating performance and efficiency. Adjust heat-distribution features, including shutters, dampers, and relays, to provide optimum heating performance and system efficiency.
- I. After completing installation, clean furnaces internally according to manufacturer's written instructions.
- J. Install new filters in each furnace within 14 days after Substantial Completion.

3.3 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 - 1. Perform electrical test and visual and mechanical inspection.
 - 2. Leak Test: After installation, charge systems with refrigerant and oil and test for leaks. Repair leaks, replace lost refrigerant and oil, and retest until no leaks exist.
 - 3. Operational Test: After electrical circuitry has been energized, start units to confirm proper operation, product capability, and compliance with requirements.
 - 4. Verify that fan wheel is rotating in the correct direction and is not vibrating or binding.
 - 5. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Verify that vibration isolation and flexible connections properly dampen vibration transmission to structure.

END OF SECTION 235400

SECTION 260501 - COMMON ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. General electrical system requirements and procedures.
 - 2. Perform excavating and backfilling work required by work of this Division as described in Contract Documents.
 - 3. Make electrical connections to equipment provided under other Sections.
- B. Related Requirements:
 - 1. Section 07 8413: Through Penetration of Firestop Systems.

1.2 SUBMITTALS

- A. Action Submittals:
 - 1. Product Data:
 - a. Provide following information for each item of equipment:
 - 1) Catalog Sheets.
 - 2) Assembly details or dimension drawings.
 - 3) Installation instructions.
 - 4) Manufacturer's name and catalog number.
 - 5) Name of local supplier.
 - b. Furnish such information for following equipment:
 - 1) Sections 26 2417 / 8: Panelboards.
 - 2) Section 26 2726: Wiring devices / Lighting control / Dimming equipment.
 - 3) Section 26 2816: Enclosed switches and circuit breakers.
 - 4) Section 26 5100: Interior lighting fixtures.
 - 5) Section 26 5200: Emergency battery units.
 - 6) Section 26 5600: Exterior lighting fixtures and associated control equipment.
 - c. Do not purchase equipment before approval of product data.
 - 2. Shop Drawings:
 - a. Submit on Panelboards:
 - b. Indicate precise equipment to be used, including all options specified. Indicate wording and format of nameplates where applicable. Submit in three-ring binder with hard cover.
- B. Informational Submittals:
- C. Test And Evaluation Reports: Report of site tests, before Substantial Completion.
- D. Closeout Submittals:
 - 1. Operations And Maintenance Manual Data:
 - a. Modify and add to requirements of Section 01 7000 as follows:
 - 1) Provide operating and maintenance instructions for each item of equipment submitted under Product Data.
 - 2) Include copy of approved shop drawings.

1.3 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies:
 - 1. NEC and local ordinances and regulations shall govern unless more stringent requirements are specified.
 - 2. Material and equipment provided shall meet standards of NEMA or UL and bear their label wherever standards have been established and label service is available.

1.4 OWNER'S INSTRUCTIONS

- A. Provide competent instructor for three days to train maintenance personnel in operation and maintenance of electrical equipment and systems. Factory representatives shall assist this instruction as necessary. Schedule instruction period at time of final inspection.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Confirm dimensions, ratings, and specifications of equipment to be installed and coordinate these with site dimensions and with other Sections.

3.2 INSTALLATION

- A. General:
 - 1. Locations of electrical equipment shown on Drawings are approximate only. Field verify actual locations for proper installation. Confirm lighting fixture location and height on Architectural reflected ceiling plan.
 - 2. Coordinate electrical equipment locations and conduit runs with those providing equipment to be served before installation or rough-in.
 - a. Notify Architect of conflicts before beginning work.
 - b. Coordinate locations of power and lighting outlets in mechanical rooms and other areas with mechanical equipment, piping, ductwork, cabinets, etc, so they will be readily accessible and functional.
 - 3. Work related to other trades which is required under this Division, such as cutting and patching, trenching, and backfilling, shall be performed according to standards specified in applicable Sections.

3.3 FIELD QUALITY CONTROL

- A. Field Tests:
 - 1. Test systems and demonstrate equipment as working and operating properly. Notify Architect before test. Rectify defects at no additional cost to Owner.
 - 2. Measure current for each phase of each motor under actual final load operation, i.e. after air balance is completed for fan units, etc. Record this information along with full-load nameplate current rating and size of thermal overload unit installed for each motor.

END OF SECTION 260501

SECTION 260502 - MINOR ELECTRICAL DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. Demolition and removal of selected portions of building or structure.
 - 2. Salvage of existing items to be reused or recycled.

1.2 EXAMINATION

- A. Verify field measurements and circuiting arrangements are as shown on Drawings.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition drawings are based on casual field observation and existing record documents.
- D. Report discrepancies to Architect before disturbing existing installation.
- E. Beginning of demolition means installer accepts existing conditions.

1.3 PREPARATION

- A. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- B. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

1.4 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Remove, relocate, and extend existing installations to accommodate new construction.
- B. Remove abandoned wiring to source of supply.
- C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- D. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets which are not removed.
- E. Repair adjacent construction and finishes damaged during demolition and extension work.
- F. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.

END OF SECTION 260502

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SECTION 260519 - LINE-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. Quality of conductors used on Project except as excluded below.
- B. Related Requirements:
 - 1. Section 26 0501: Common Electrical Requirements.

1.2 REFERENCES

- A. Definitions:
 - 1. Line Voltage: Over 70 Volts.

PART 2 - PRODUCTS

2.1 SYSTEMS

- A. Line Voltage Conductors:
 - 1. Copper with AWG sizes as shown:
 - a. Minimum size shall be No. 12 except where specified otherwise.
 - b. Conductor size No. 8 and larger shall be stranded.
 - 2. Insulation:
 - a. Standard Conductor Size No. 10 And Smaller: 600V type THWN or XHHW (75 deg C).
 - b. Standard Conductor Size No. 8 And Larger: 600V Type THW, THWN, or XHHW (75 deg C).
 - c. Higher temperature insulation as required by NEC or local codes.
 - 3. Colors:
 - a. 208Y / 120 V System:
 - 1) Black: Phase A.
 - 2) Red: Phase B.
 - 3) Blue: Phase C.
 - 4) Green: Ground.
 - 5) White: Neutral.
 - b. 480Y / 277 Volt System:
 - 1) Brown: Phase A.
 - 2) Orange: Phase B.
 - 3) Yellow: Phase C.
 - 4) Gray: Neutral.
 - 5) Green: Ground.
 - c. Conductors size No. 10 and smaller shall be colored full length. Tagging or other methods for coding of conductors size No. 10 and smaller not allowed.
 - d. For feeder conductors larger than No. 10 at pull boxes, gutters, and panels, use painted or taped band or color tag color-coded as specified above.

- B. Line Voltage Cables:
 - 1. Metal Clad Cable (MC) may be used as restricted below:
 - a. Copper conductors
 - b. Sizes #12 through #8
 - c. Use only in indoor dry locations where:
 - 1) Not subject to damage.
 - 2) Not in contact with earth.
 - 3) Not in concrete.
 - d. Provide with redundant insulated green grounding conductor.
- C. Standard Connectors:
 - 1. Conductors No. 8 And Smaller: Steel spring wire connectors.
 - 2. Conductors Larger Than No. 8: Pressure type terminal lugs.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General:
 - 1. Conductors and cables shall be continuous from outlet to outlet.
 - 2. Do not use direct burial cable.
- B. Line Voltage Conductors:
 - 1. Install conductors in raceway where indicated on Drawings. Run conductors of different voltage systems in separate conduits.
 - 2. Route circuits at own discretion, however, circuiting shall be as shown in Panel Schedules. Group circuit homeruns to panels as shown on Drawings.
 - 3. Neutrals:
 - a. On three-phase, 4-wire systems, do not use common neutral for more than three circuits.
 - b. On single-phase, 3-wire systems, do not use common neutral for more than two circuits.
 - c. Run separate neutrals for each circuit where specifically noted on Drawings.
 - d. Where common neutral is run for two or three home run circuits, connect phase conductors to breakers in panel which are attached to separate phase legs so neutral conductors will carry only unbalanced current. Neutral conductors shall be of same size as phase conductors unless specifically noted otherwise.
 - 4. Pulling Conductors:
 - a. Do not pull conductors into conduit until raceway system is complete and cabinets and outlet boxes are free of foreign matter and moisture.
 - b. Do not use heavy mechanical means for pulling conductors.
 - c. Use only listed wire pulling lubricants.
- C. Line Voltage Cables:
 - 1. Route circuits at own discretion, however, circuiting and numbering shall be as shown in Panel Schedules.
 - 2. Support cables using approved staples, cable ties, straps, hangers, or similar fittings, spaced as required.
 - 3. Where installing in framing, do not bore holes in joists or beams outside center 1/3 of member depth or within 24 inches of bearing points. Do not bore holes in vertical framing members outside center 1/3 of member width. Holes shall be one inch diameter maximum.

4. Conceal cables within ceilings and walls of finished areas. Cables may be exposed in unfinished areas but not run on floors of mechanical equipment spaces or in such a way that they obstruct access to, operation of, or servicing of equipment.
5. Install exposed cables parallel to or at right angles to building structure lines.
6. Keep cables 6 inches 150 mm minimum from hot water pipes.
7. Do not support cables from mechanical ducts or duct supports without Architect's written approval.
8. Prohibited procedures:
 - a. Boring holes for installation of cables in vertical truss members.
 - b. Notching of structural members for installation of cables.

END OF SECTION 260519

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SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. Furnish and install grounding for electrical installation as described in Contract Documents except as excluded below.
- B. Related Requirements:
 - 1. Section 26 0501: Common Electrical Requirements.

PART 2 - PRODUCTS

2.1 SYSTEM

- A. Manufacturers:
 - 1. Type One Acceptable Products:
 - a. 'Cadweld' by Erico International, Solon, OH www.erico.com.
 - b. 'ThermOweld' by Continental Industries, Tulsa, NE www.conind.com.
 - c. Equal as approved by Architect before bidding. See Section 01 6200.
- B. Performance:
 - 1. Design Criteria: Size materials as shown on Drawings and in accordance with applicable codes.
- C. Materials:
 - 1. Grounding And Bonding Jumper Conductors: Bare copper or with green insulation.
 - 2. Make grounding conductor connections to ground rods and water pipes using approved bolted clamps listed for such use.
 - 3. Service Grounding Connections And Cable Splices: Make by exothermic process.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Grounding conductors and bonding jumper conductors shall be continuous from terminal to terminal without splice. Provide grounding for following.
 - 1. Conduits and other conductor enclosures.
 - 2. Neutral or identified conductor of interior wiring system.
 - 3. Non-current-carrying metal parts of fixed equipment such as motors, starter and controller cabinets, instrument cases, and lighting fixtures.
- B. Connect equipment grounds to building system ground.
 - 1. Use same size equipment grounding conductors as phase conductors up through #10 AWG.
 - 2. Use NEC Table 250-95 for others unless noted otherwise in Drawings.
- C. Run separate insulated grounding cable from each equipment cabinet to electrical panel. Do not use intermediate connections or splices. Affix directly to cabinet.

- D. On motors, connect ground conductors to conduit with approved grounding bushing and to metal frame with bolted solderless lug.
- E. Ground cabinet of transformers to conduit and ground wires, if installed. Bond transformer secondary neutral conductor to cabinet.

3.2 FIELD QUALITY CONTROL

- A. Field Inspections: Notify Architect for inspection two days minimum before placing concrete over grounding conductor.

END OF SECTION 260526

SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. Quality of material and installation procedures for raceway, boxes, and fittings used on Project but furnished under other Divisions.
 - 2. Furnish and install raceway, conduit, and boxes used on Project not specified to be installed under other Divisions.
 - 3. Furnish and install main electrical service raceway to comply with electrical utility company requirements.
- B. Related Requirements:
 - 1. Section 260501: General Electrical Requirements.

PART 2 - PRODUCTS

2.1 SYSTEM

- A. Manufacturers:
 - 1. Manufacturer Contact List:
 - a. Cooper B-Line, Highland, IL www.b-line.com.
 - b. Hubbell Incorporated, Milford, CT www.hubbell-wiring.com or Hubbell Canada Inc, Pickering, ON (905) 839-4332.
 - c. Square D, Palatine, IL www.squared.com.
 - d. Steel City, Div Thomas & Betts, Memphis, TN www.tnb.com or Thomas & Betts Ltd, Iberville, PQ (450) 347-5318.
 - e. Thomas & Betts, Memphis, TN www.tnb.com.
 - f. Walker Systems Inc, Williamstown, WV (800) 240-2601 or Walker Systems Inc / Wiremold Canada Inc, Fergus, ON (519) 843-4332.
 - g. Wiremold Co, West Hartford, CT www.wiremold.com.
- B. Materials:
 - 1. Raceway And Conduit:
 - a. Sizes:
 - 1) 3/4 inch 19 mm for exterior use, unless indicated otherwise.
 - 2) 1/2 inch 13 mm for interior use, unless indicated otherwise.
 - b. Types: Usage of each type is restricted as specified below by product.
 - 1) Galvanized rigid steel or galvanized intermediate metal conduit (IMC) is allowed for use in all areas. Where in contact with earth or concrete, wrap buried galvanized rigid steel and galvanized IMC conduit and fittings completely with vinyl tape.
 - a) For metal conduit systems, flexible steel conduit is required for final connections to indoor mechanical equipment.
 - 2) Galvanized Electrical Metallic Tubing (EMT) and Flexible Steel Conduit:
 - a) Allowed for use only in indoor dry locations where it is:
 - (1) Not subject to damage.
 - (2) Not in contact with earth.
 - (3) Not in concrete.

- b) For metal conduit systems, flexible steel conduit is required for final connections to indoor mechanical equipment.
 - 3) Schedule 40 Polyvinyl Chloride (PVC) Conduit:
 - a) Allowed for use only underground or below concrete with galvanized rigid steel or IMC elbows and risers.
 - 4) Listed, Liquid-Tight Flexible Metal Conduit:
 - a) Use in outdoor final connections to mechanical equipment, length not to exceed 36 inches.
 - 5) Pre-wired 3/8 Inch Flexible Fixture Whips: Allowed only for connection to recessed lighting fixtures, lengths not to exceed 72 inches.
 - c. Prohibited Raceway Materials:
 - 1) Aluminum conduit.
 - 2) Armored cable type AC (BX) cable.
- 2. Raceway And Conduit Fittings:
 - a. Rigid Steel Conduit And IMC: Threaded and designed for conduit use.
 - b. EMT:
 - 1) Compression type.
 - 2) Steel set screw housing type.
 - c. PVC Conduit:
 - 1) PVC type. Use PVC adapters at all boxes.
 - 2) PVC components, (conduit, fittings, cement) shall be from same Manufacturer.
 - d. Flexible Steel Conduit: Screw-in type.
 - e. Liquid-tight Flexible Metal Conduit: Sealtite type.
 - f. Expansion fittings shall be equal to OZ Type AX sized to raceway and including bonding jumper.
 - g. Prohibited Fitting Materials:
 - 1) Crimp-on, tap-on, indenter type fittings.
 - 2) Cast set-screw fittings for EMT.
 - 3) Spray (aerosol) PVC cement.
- 3. Outlet Boxes:
 - a. Galvanized steel of proper size and shape are acceptable for all systems. Where metal boxes are used, provide following:
 - 1) Provide metal supports and other accessories for installation of each box.
 - 2) Equip ceiling and bracket fixture boxes with fixture studs where required.
 - 3) Equip outlets in plastered, paneled, and furred finishes with plaster rings and extensions to bring box flush with finish surface.
 - b. Non-metallic boxes may be used only for control voltage wiring systems.
 - c. Telephone / data outlet boxes shall be single device outlet boxes.
 - d. HVAC Instrumentation And Control:
 - 1) Junction boxes in mechanical equipment areas shall be 4 inches square.
 - 2) Boxes for remote temperature sensor devices shall be recessed single device.
 - 3) Boxes for thermostats shall be 4 inches square with raised single device cover.
- 4. Floor Boxes:
 - a. Type Two Acceptable Products:
 - 1) 887 cast iron box 885 brass duplex cover plate for carpet by Walker Systems.
 - 2) B-2537 cast iron box with SF3925 brass duplex cover plate for carpet by Hubbell.
 - 3) Equal as approved by Architect before installation. See Section 01 6200.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Confirm dimensions, ratings, and specifications of materials to be installed and coordinate these with site dimensions and with other Sections.

3.2 INSTALLATION

- A. Interface With Other Work:
 - 1. Coordinate with Divisions 22 and 23 for installation of raceway for control of plumbing and HVAC equipment.
 - 2. Before rough-in, verify locations of boxes with work of other trades to insure that they are properly located for purpose intended.
 - a. Coordinate location of outlet for water cooler with Division 22.
 - b. Coordinate location of outlets adjacent to or in millwork with Division 06 before rough-in. Refer conflicts to Architect and locate outlet under his direction.
 - 3. Coordinate installation of floor boxes in carpeted areas with carpet installer to obtain carpet for box doors.
 - 4. Install pull wires in raceways installed under this Section where conductors or cables are to be installed under other Divisions.
- B. Conduit And Raceway:
 - 1. Keep raceway runs 6 inches minimum from hot water pipes.
 - 2. Make no more than four quarter bends, 360 degrees total, in any conduit run between outlet and outlet, fitting and fitting, or outlet and fitting.
 - a. Make bends and offsets so conduit is not injured and internal diameter of conduit is not effectively reduced.
 - b. Radius of curve shall be at least minimum indicated by NEC.
 - 3. Cut conduit smooth and square with run and ream to remove rough edges. Cap raceway ends during construction. Clean or replace raceway in which water or foreign matter have accumulated.
 - 4. Run two spare conduits from each new panelboard to ceiling access area or other acceptable accessible area and cap for future use.
 - 5. Bend PVC conduit by hot box bender and, for PVC 2 inches in diameter and larger, expanding plugs. Apply PVC adhesive only by brush.
 - 6. Installation In Framing:
 - a. Do not bore holes in joists or beams outside center 1/3 of member depth or within 24 inches of bearing points. Do not bore holes in vertical framing members outside center 1/3 of member width.
 - b. Holes shall be one inch diameter maximum.
 - 7. Underground Raceway And Conduit:
 - a. Bury underground raceway installed outside building 24 inches deep minimum.
 - b. Bury underground conduit in planting areas 18 inches deep minimum. It is permissible to install conduit directly below concrete sidewalks, however, conduit must be buried 18 inches deep at point of exit from planting areas.
 - 8. Conduit And Raceway Support:
 - a. Securely support raceway with approved straps, clamps, or hangers, spaced as required.
 - b. Do not support from mechanical ducts or duct supports without Architect's written approval. Securely mount raceway supports, boxes, and cabinets in an approved manner by:
 - 1) Expansion shields in concrete or solid masonry.
 - 2) Toggle bolts on hollow masonry units.

- 3) Wood screws on wood.
 - 4) Metal screws on metal.
- 9. Prohibited Procedures:
 - a. Use of wooden plugs inserted in concrete or masonry units for mounting raceway, supports, boxes, cabinets, or other equipment.
 - b. Installation of raceway that has been crushed or deformed.
 - c. Use of torches for bending PVC.
 - d. Spray applied PVC cement.
 - e. Boring holes in truss members.
 - f. Notching of structural members.
 - g. Supporting raceway from ceiling system support wires.
 - h. Nail drive straps or tie wire for supporting raceway.
- C. Telephone / Data /Nurse Call / Security Systems:
 - 1. Install main service raceway as directed by Telephone Company. Leave pull wire in raceway.
 - 2. Install raceway from outlet to accessible corridor as indicated on Drawings.
- D. Boxes:
 - 1. Boxes shall be accessible and installed with approved cover.
 - 2. Do not locate device boxes that are on opposite sides of framed walls in the same stud space. In other wall construction, do not install boxes back to back.
 - 3. Locate boxes so pipes, ducts, or other items do not obstruct outlets.
 - 4. Install outlets flush with finished surface and level and plumb.
 - 5. Use 4 – 1 1/16 inch square box with single gang ring for data / telephone outlets and 4 inch square boxes for Nurse Call / Security outlets.
 - 6. Support switch boxes larger than two-gang with side brackets and steel bar hangers in framed walls.
 - 7. At time of substantial completion, install blank plates on uncovered outlet boxes that are for future use.
 - 8. Location:
 - a. Install boxes at door locations on latch side of door, unless explicitly shown otherwise on Drawings. Verify door swings shown on electrical drawings with architectural drawings, and report discrepancies to Architect before rough-in. Distance of box from jamb shall be within 6 inches of door jamb.
 - b. Properly center boxes located in walls with respect to doors, panels, furring, trim and consistent with architectural details. Where two or more outlets occur, space them uniformly and in straight lines with each other, if possible.
 - c. Center ceramic tile boxes in tile.
- E. Support factory-fabricated speaker enclosures from structure or ceiling suspension system.

END OF SECTION 260533

SECTION 260526 - IDENTIFICATION OF ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Nameplates and labels.
- B. Wire and cable markers.

1.2 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code; National Fire Protection Association; 2005.

PART 2 PRODUCTS

2.1 NAMEPLATES AND LABELS

- A. Nameplates: Engraved three-layer laminated plastic, black letters on white background.
- B. Locations:
 - 1. Each electrical distribution and control equipment enclosure.
- C. Letter Size:
 - 1. Use 1/8 inch letters for identifying individual equipment and loads.

2.2 WIRE MARKERS

- A. Description: Cloth or tape type wire markers.
- B. Locations: Each conductor at panelboard gutters, pull boxes, outlet boxes, and junction boxes each load connection.

2.3 UNDERGROUND WARNING TAPE

- A. Description: 3 inch wide plastic tape, detectable type colored red with suitable warning legend describing buried electrical lines.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install nameplates and labels parallel to equipment lines.
- B. Secure nameplates to equipment front using screws.
- C. Secure nameplates to inside surface of door on panelboard that is recessed in finished locations.
- D. Identify underground conduits using underground warning tape. Install one tape per trench at 3 inches below finished grade.

END OF SECTION 260526

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SECTION 262726 - WIRING DEVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. Furnish and install wiring devices complete with plates as described in Contract Documents.
- B. Related Requirements:
 - 1. Section 260501: Common Electrical Requirements.

PART 2 - PRODUCTS

2.1 COMPONENTS

- A. Manufacturers:
 - 1. Manufacturer Contact List:
 - a. Cooper Wiring Devices, Peachtree City, GA www.cooperwiringdevices.com.
 - b. General Electric Industrial Systems, Charlotte, NC www.geindustrial.com.
 - c. Hubbell Building Automation, Austin, TX www.hubbell-automation.com.
 - d. Hubbell Inc, Milford, CT www.hubbell-wiring.com or Hubbell Canada Inc, Pickering, ON (800) 263-4622 or (905) 839-4332.
 - e. Hunt Control Systems Inc, Fort Collins, CO www.huntdimming.com.
 - f. Intermatic Inc, Spring Grove, IL www.intermatic.com.
 - g. Leviton Manufacturing Co, Little Neck, NY www.leviton.com or Leviton Manufacturing of Canada Ltd, Pointe-Claire, QB (800) 461-2002 or (514) 954-1840.
 - h. Lightolier Controls, Dallas, TX www.lolcontrols.com or Lightolier CFI, Lachine, QB (800) 565-5486 or (514) 636-0670.
 - i. Lutron Electronics Co Inc, Coopersburg, PA www.lutron.com.
 - j. Novitas Inc, Peachtree City, GA www.novitas.com.
 - k. Ortronics, New London, CT www.ortronics.com.
 - l. Paragon Electric Co Inc, Carol Stream, IL www.icca.invensys.com/paragon or Paragon Electric, Mississauga, ON (800) 951-5526 or (905) 890-5956.
 - m. Pass & Seymour, Syracuse, NY www.passandseymour.com or Pass & Seymour Canada Inc, Concord, ON (905) 738-9195.
 - n. Red Dot div of Thomas & Betts, Memphis, TN www.tnbcom.
 - o. Siemon Company, Watertown, CT www.siemon.com.
 - p. Square D Co, Palatine, IL www.squared.com.
 - q. Suttle, Hector, MN www.suttleonline.com.
 - r. Tork Inc, Mount Vernon, NY www.tork.com.
 - s. Watt Stopper Inc, Santa Clara, CA www.wattstopper.com.
 - 2. Product Options:
 - a. Faces shall be nylon where available.
 - b. Devices of single type shall be from same Manufacturer.
 - c. Devices are listed as white. Use ivory colored devices and plates.
- B. Receptacles:

1. Standard Style:
 - a. 15 amp, specification grade, Back and side wired, self grounding.
 - b. Verified by UL to meet Fed Spec WC-596F.
 - c. Approved Manufacturers & Models –
 - 1) Hubbell - 5252-I
 - 2) Leviton - 5252-I
 - 3) Pass & Seymour - 5252-I
 - d. 15 AMP, specification grade, back and side wired, self grounding.
 - e. Category Four Approved Products. See Section 01 6200 for definitions of Categories.
 - 1) Cooper: 6262W.
 - 2) Hubbell: HBL2152WA.
 - 3) Leviton: 16252-W.
 - 4) Pass & Seymour: 26252-W.
- C. Plates
 1. Standard Cover Plates –
 - a. Nylon or high impact resistant thermoplastic.
 - b. Color shall match wiring device.
 - c. Ganged switches shall have gang plates.
 - d. Approved Manufacturers –
 - 1) Hubbell
 - 2) Leviton
 - 3) Pass & Seymour

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install devices flush with walls, straight, and solid to box.
- B. Install secondary surge arrestor in knock-out of junction box installed on bottom of automatic sprinkler controller.

END OF SECTION 262726